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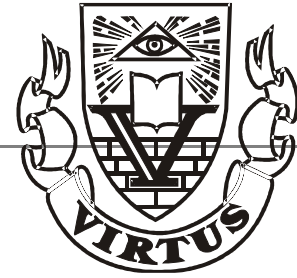
CORRUPTION, COMPLEXITY AND GOVERNANCE: THE ROLE OF TRANSPARENCY IN HIGHLY COMPLEX SYSTEMS

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Abstract

This paper draws on the available interdisciplinary literature on corruption. We describe corruption as a highly complex phenomenon, which includes heterogeneous elements with nontrivial relationships, unpredictable evolution and changing dynamics. We conclude that anticorruption efforts must be aware of this complexity and include the needed governance instruments. Self regulation, transparency and ethics are called on to play a fundamental role.

Keywords: Corruption, Complexity, Governance, Ethics

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Introduction

Countries and international agencies acknowledge the insidious economic and social effects of corruption. Scholars do not remain oblivious to the problem. The topic has been visited and revisited from political science, economics, sociology, law or ethics. While scholars produced a growing body of research and greatly enhanced the general knowledge about corruption, international agencies and countries exponentially increased the amount of funds, instruments and legal initiatives to fight corruption. Unfortunately, the theoretical and empirical success has been scarce.

The World Bank recognizes that in average, improvements mostly stagnated (WBG, 2006). Designed tools go largely unrealized in many areas such as anti-money-laundering (Sharman and Chaikin, 2009) bureaucracy quality, incentives to bribery or controls (Dollar, Hallward-Driemeier & Mengistae, 2005). In the academic arena, authors recognize research is not providing a true comprehension of the phenomenon (Goudie & Stavage, 1997) and "investigation into causes, consequences and 'cures' to corruption is still in its infancy" (Kaufmann, 1998: 141-142).

While a growing consensus emphasizes the need for re-invent anti-corruption policy, discussion turns around systems and instruments (Bardhan, 2006). Two proposals can be distinguished. On the one hand, international agencies, a section of Management science and other no-economic social science are convinced that "governments alone cannot contain corruption" (UN, 2004: 17), proposing a strategy of governance is presented. On the other, economists, who are convinced that reform should necessarily focus on combating judicial and administrative corruption. Thus, they propose an optimal law enforcement through appropriate incentives and punishment (Rose-Ackerman, 1978).

Drawing on the available interdisciplinary literature on corruption, this paper attempts to contribute to the debate adding a new element: the complexity. We suggest that literature has failed to capture the complexity of the corruption being essential.

Despite scholars (Michael, 2004; Argandoña, 2003; Jain, 2001; Ades & Di Tella, 1997) have imputed the lack of performance in anti-corruption policies to an inappropriate approach, corruption has been conceptualized as a complicated puzzle that can be solved with traditional regulatory models from public administration science, since its pieces could be analyzed as independent elements. However, corruption is not a complicated problem but rather an extremely complex phenomenon, which shows all the characteristic features of complex adaptive systems. This call has a direct and important practical implication because as a complex phenomenon, corruption largely resists traditional regulatory models.

The remainder of this article is structured as follows. After briefly summarizing the background of the "demand for governance" and "optimal enforcement", the next section describes corruption as a complex phenomenon. We distinguish between complicated problems and complex phenomena, with theoretical and practical arguments. Then, we detail the complex nature of corruption as stemming from heterogeneous elements connected through non-trivial relationships, which form a system with its own evolution and dynamics. That leads us to underline the bounded capacity of current regulatory strategies to handle such complexity in an effective way. The last part of the article argues for the potential benefits of new governance instruments. After differentiating between horizontal and vertical instruments, we suggest that ethics may be the principal element in a successful vaccine for corruption.

Governance vs optimal law enforcement

Governance refers to a "new method by which society is governed" (Rhodes, 1996). Its popularity is derived

"from its capacity —unlike that of the narrower term 'government'— to cover the whole range of institutions and relationships involved in the process of governing" (Pierre & Peters, 2000: 1). Governance is an essentially self-organizing and coordinating network of societal actors (Jordan et al, 2006). Thus, the essence of the transition from government to governance is the simultaneous participation of private and public actors (Stoker, 1998). In a governance strategy, traditional government instruments —regulatory activity based on legal rules, procedures and administrative and judiciary sanctions—, which keep their importance, are complemented by private actors with other instruments, like soft law, co-regulation, self-regulation or voluntary agreements.

Under the hypothesis that voluntary principles and standards of conduct may be economically viable, operationally feasible and socially profitable, new governance instruments are extending their presence in some realms, sectors and countries.

This view is extending to anti-corruption efforts, moving the monopoly of traditional interventionist policy instruments. It promotes some delegation of authority suggesting that in order to curb corruption "a free media, vibrant civil society, engaged local communities and an independent middle class are crucial components for good governance… wider engagement with the domestic private sector and multinationals is required" (WBG, 2006: 12-13).

The argument explains that, embedded in the winds of globalization change, old anti-corruption and traditional government instruments policies result imperfect, incomplete and ineffective (Jordan, Wurzel & Zito, 2006). Private sector and the civil society should emerge as key pillars of integrity (UN (2004) proposing strategies for strengthening "good governance"

Governance is already popular in subjects such as environmental policy, in which the regulatory activity is shifting from traditional command-and-control orientation toward market instruments and private self-regulation, reaping important success. The question is if this view —which is still a declaration of goodwill because the "next generation of governance strategies" is often left uncompleted (Coleman & Perl, 1999)— could or must extend to anti-corruption area and then to solve how choose effective and efficient instruments to involve both public and private actors in the implementation of a policy (Howlett & Rayner, 2006) and how to engage national states if old principles of regulatory government and new modes of governance when conflict exist (Eberlein & Kerwer, 2004).

The second proposal becomes from economic science. Identifying corruption as a symptom of dysfunctional governance within the public sector or as a behavioural phenomena between state and market (Rose-Ackerman, 1978; Mauro,1995), economists demand institutional quality. They underline the need for appropriate incentives and punishment (Glaeser & Shleifer, 2003).

We share partially this opinion, but we must go far beyond. An integrated approach is needed, but previously a correct dissection of corruption must be realized. In this

paper, we describe corruption as a highly complex phenomenon, which includes heterogeneous (political, social, cultural and economic) elements with nontrivial relationships, unpredictable evolution and changing dynamics. This is particularly important because complexity resists regulation and requires governance.

This paper suggests that, in curbing corruption, the adoption of governance instruments, especially business ethical self-regulation, is not an option but a requirement. Our central argument is built on corruption's nature. After drawing largely on the existing literature, we must conclude that corruption has been viewed as a complicated puzzle that can be solved with traditional regulatory models from public administration science, since its pieces could be analyzed as independent elements.

We argue that this framework is severely flawed. Corruption is not a complicated problem but rather an extremely complex phenomenon, which shows all the characteristic features of complex adaptive systems. This theoretical call has a direct and important practical implication because as a complex phenomenon, corruption largely resists regulatory models, calling for governance and specifically for ethics.

Governance and government instruments

In strictest sense, governance refers to a "new method by which society is governed" (Rhodes, 1996: 653). Its popularity is derived "from its capacity —unlike that of the narrower term 'government'— to cover the whole range of institutions and relationships involved in the process of governing" (Pierre & Peters, 2000: 1). Governance is an essentially self-organizing and coordinating network of societal actors (Jordan, Wurzel & Zito, 2006). Thus, the essence of the transition from government to governance is the simultaneous participation of private and public actors (Stoker, 1998). In a governance strategy, traditional government instruments —regulatory activity based on legal rules, procedures and administrative and judiciary sanctions—, which undoubtedly keep their importance, are complemented by private actors with other instruments, like soft law, co-regulation, self-regulation or voluntary agreements.

New governance instruments are extending their presence in some realms, sectors and countries. For instance, they are already popular in environmental policy, in which the regulatory activity is shifting from traditional command-and-control orientation toward market instruments and private self-regulation (Howlett & Rayner, 2006; Pierre, 2000).

This view is extending to anti-corruption efforts, moving the monopoly of traditional interventionist policy instruments. It is now suggested that in order to curb corruption "a free media, vibrant civil society, engaged local communities and an independent middle class are crucial components for good governance… wider engagement with the domestic private sector and multinationals is required" (WBG, 2006: 12-13).

However, even if governance is theoretically present, it has diffuse and weak implementation or

conviction and anticorruption strategies retain regulations and traditional controls as their key pieces.

A few examples will shed some light. The Governance and Anti-corruption Report of the WBG explicitly recommends the introduction of traditional "public sanctions to raise the cost to businesses to engage in corruption" (WBG, 2006: 13), forgetting other new softer-instruments, such as voluntary agreements or self-regulations, that the WGB itself has presented in certain forums Recognizing the adverse impact of corruption on economic efficiency and growth, "the IMF has turned its attention to a broader range of institutions reforms and governance issues in the reform programs it supports" (Wolf & Gürgen, 1996: 2-3). Despite this declaration, measures in this area (lifting price controls, opening up the trade system, elimination of exchange controls or privatisation of public enterprises) have been mostly related to the reduction of the government's size, without any engagement of the private sector.

The creation of positive interactions among implicated agents, especially private actors, in order to design a new process of governing where government and private instruments work together is still a declaration of goodwill which needs much further development. In fact, its practical implementation presents three main problems: (1) how to involve private actors in the anticorruption policy formulation; (2) how to obtain the involvement of both public and private actors in the implementation of policy; and, finally, (3) how to engage national states if old principles of regulatory government and new modes of governance could compete and conflict with each other (Eberlein & Kerwer, 2004). The first two difficulties require careful analysis in order to choose effective and efficient instruments (Howlett & Rayner, 2006) for formulation and implementation (WBG, 2006).

The third one is not simpler. To the question "has governance eclipsed government?", some authors (Jordan et al., 2006) suggest an inertia which comes from both a certain resilience of regulation — regulation is often very hard to eliminate— and some risk in the alternatives — the design of the "next generation strategies" is often left uncompleted (Coleman & Perl, 1999)-.

Corporate scandals have been dealt with from the traditional government perspective (that is, new regulations) and not from the governance paradigm. We suggest that this is a strategic error since the complex nature of corruption eludes simplistic solutions.

The situation in the academic arena

The situation in the academic arena is similar; governance gains some theoretical relevance but most attention is still devoted to government instruments.

Corruption and complexity

Most scholars and experts have repeatedly recognized that corruption is far from simple. Moreover, in international institutions and national governments, the mention of corruption as a complex issue turns out to be

not an exception. For instance, in his two interventions on corruption at the 2006 IMF/World Bank Group Annual Meeting, former president Wolfowitz expressly indicated that corruption is extremely complex and as such it must be fought. Like him, academia has unanimously certified that corruption is a very difficult construct, born and developed in complexity (Batty & Torrens, 2005; Collier, 2002; Klitgaard, 1988; Rose-Ackerman, 1999; TI, 2004).

Complexity has been signaled as a main impediment to offering a compact and systematic framework for corruption. (Aidt, 2003; Argandoña, 2001; Bac, 1998; Davis & Ruhe, 2003). It could explain differences in anticorruption results across countries (Gaviria, 2002); the intricacy of legal enforcement of international contracts (Lambsdorff, 2002); or even the lack of a precise and comprehensive definition (Johnston, 2000), which is far from being just a semantic issue, since a concept's definition determines what gets modeled and what is empirically tested (Aidt, 2003).

Complexity seems to rear its head in all corruption-related issues. Some authors qualify the effect of corruption on cross-border investment as a very complex one (Rose-Ackerman, 1999). Complexity is included as a key factor on the individual decisions to engage in corruption (Guerrero & Rodríguez-Oreggia, 2008). The relationships between corruption and the effectiveness of a country's legal system are defined as affected by complexity (Jain, 2001). The complex connections between corruption and the rule of law are also pointed out in the literature (Herzfeld & Weiss, 2003). Even the inner complexity of bureaucratic processes is highlighted (Buscaglia, 2001).

Although complexity is signaled as a factor that favors corruption (Lambert-Mogiliansky; 2002), its nature has been rarely examined. In many cases, the term itself remains undefined. In order to adopt a systematic and consistent treatment of governance issue across countries, the mere affirmation that corruption exhibits a high degree of complexity is not enough. Science must also be able to comprehend the nature of that complexity. The success in dealing with that challenge has been marginal.

Complexity has not always functioned as a spur for wide and interdisciplinary efforts. On occasions, the effect of integrating complexity into anti-corruption programs has been the "despair and resignation on the part of those who are concerned about it" (Bardhan, 1997: 1321). In other instances, different procedures have been applied trying to reduce complexity. Too frequently, the procedure has consisted in increasing mathematical sophistication and reducing the systemic view, producing stylized studies without practical applications. Unfortunately, in most attempts to understand, predict and develop courses of anticorruption action, strategies applied by international organizations and countries participate in this mainstream.

Those procedures do not exhibit an adequate understanding of the theoretical framework of complex systems. They have implicitly confused complex and complicated problems. Corruption, which is an extremely complex problem, has been treated as a complicated one.

From complicated problems to complex phenomena

The essential difference between complicated and complex problems is that the former can be reduced to a set of simple cause-effect problems, so that its complicated nature often rests on the scale. Its reduction to a set of problems would permit to combat corruption with a set of regulations focused on the set of single causes. Of course, this is not to mean that the solution for complicated problems is guaranteed to exist. It only means that the way of tackling complicated problems is different from the way of dealing with complex problems

Complex problems cannot be reduced to an assembly of simple components (Goodwin, 1994) because some special features are present, like the need of understanding unique local conditions, interdependency (Holland, 1995) non-linearity or non-triviality (Lorenz, 1993), capacity to adaptation and novelty as conditions change (Kauffman, 1995). Even if uncertainty is associated with both complicated and complex problems, the former, whose major difficulty is coordination, can be approached with greater degree of optimism than complex problems.

The literature on corruption has reduced the issue to an assembly of simple political (Caselli & Morelli, 2004), commercial (Rose-Ackerman, 1999) or behavioral relationships, susceptible of aggregation (Kaufman, 1998; TI, 2000;) and solvable through regulations and control-and-command instruments. Solutions that are wedded to trivial and static approaches have been consequently applied.

For instance, in a large number of occasions, it has been suggested that corruption = poor governance, identifying corruption as a complicated problem of governance weakness, which can be fought with the adoption of a host of independent policies We suggest that this view is incorrect. If corruption was a complicated problem of governance weakness, the current knowledge of simple and independent cause-effect relationships would eventually be enough to solve it (Rodriguez, Uhlenbruck, & Eden, 2005). We argue that corruption often takes forms more complex and subtle than simple transactions and as a result the complexity perspective —which discards the aggregation methodology— is needed (Aidt, 2003; Michael, 2004;).

The nature of corruption as an 'extremely complex phenomenon' must be understood, internalized and added to models and strategies, in order to ensure the systematic, integrated and consistent treatment of governance and anticorruption measures.

The Incorporation of Complexity

In spite of its intricate nature, the interest in complexity —traditionally circumscribed to natural sciences— has largely extended across other academic disciplines since 1996. The profound recognition that the world is complex has led both economics and management science to accept that "economic organization is formidably complex and economic agents are subject to very real cognitive limits" (Williamson, 1996: 311).

In recent years, the description of the firm as a 'complex adaptive system' (Foster, 2005) with dynamic efficiency (Loasby, 1998) or the view of economics as 'self-organization', have received considerable attention.

In the context of literature on economics and politics, implications of complexity have affected certain academic topics, such as the law and economics of contracts (Eggleston et al, 2000), international negotiation strategies (Kumar et al, 2005), business cycles (Grandmont, 1985), asymmetric information models or choice theory (Brock & Durlauf, 1995).

The literature on corruption has not incorporated complexity. Theories and models were dominated by the view that we could simplify and distil the essence of things by decomposition and aggregation.

More oriented to forecasting than to understanding, this dominant framework has tested hypothetical linear connections between a specific cause in the environment, and a specific effect - a part of the system-. Thus, corruption is tackled as an aggregation or set of linear problems which operate in a state of stable equilibrium.

This dominant approach has been successful in offering many and important advances in the knowledge of the simple cause-effect relationships between corruption and many other variables. Through mathematical and statistical analysis, it has derived the basic properties of each linear connection and tested its hypotheses using cross-sectional data. Moreover, experts believe their conclusions are enough to identify —not totally but largely— the environmental changes that must be carried out and therefore have restructured the available strategies in these theoretically predictable ways (Zajac & Kraatz, 1993). In consequence, anticorruption strategies can be described as a natural reaction to an increasing amount of theoretical evidence.

However, those theoretical linear relationships have turned out to be ambiguous, weak and contradictory in their empirical applications. Finally, applied strategies —such as privatizations- have failed to provide a cross-national satisfactory reduction in corruption levels. The recent evolution of transition economies expresses that confusion (Li, 2004)

We suggest that for corruption, the knowledge of simple and independent cause-effect relationships is not enough (Aidt, 2003). Corruption is not a complicated chain of independent events, which may be aggregated around a set of linear cause-effect relationships. Corruption is a phenomenon. If we expect to develop efficient anticorruption systems, the lens of complexity science are needed.

Generators of Complexity

When referring to governance and anticorruption, few researchers explicitly advocate for applying the complexity perspective. The quality of being complex is not easily described. It is a special attribute that refers to many diverse aspects and its whole analysis largely exceeds the goals of this article1. However, in the vast number of interdisciplinary studies and proposals referred

to the complex reality, scholars have identified some 'generators' of complexity (Richardson, 2005), whose presence increases the uncertainty and, therefore, the difficulty of decision-making.

In the realm of economics and organizational science (Brian, Durlauf, & Lane, 1997), authors suggest that complexity presents at least four main "generators":

a. The number of heterogeneous elements in the system (Cilliers, 2005; MacLeod & Pingle, 2005). A greater number of elements and a higher level of heterogeneity among them increase the complexity.

b. The non-trivial interaction among heterogeneous elements (Marengo & Dosi, 2005). Trivial relationships are simpler than non-linear or multi-causal relationships.

c. Continual adaptation to environmental changes by learning and evolving elements (Simon, 2002). Evolution produces surprising behavior of the system, which increases the complexity (Michael, 2004).

d. Perpetual novelty (Batty & Torrens, 2005; Day, 1994; Kaufmann, 1995), which creates new complex structures.

The verification of the presence or absence of the above complexity generators in corruption should permit us to bring out its nature. With this perspective, we have carried out an exhaustive interdisciplinary revision of the available literature. We conclude (and state four hypotheses) that the factors above are present in corruption:

Elements that Define Corruption

Literature has recognized that corruption is

a. A many-faceted (Aidt, 2003) and multidimensional (Von Alemann, 2004) phenomenon. Focusing on both causes and consequences (Kaufman, 1997; Mauro, 1998; Treisman, 2000), analyses suggest that corruption depends upon (and has effects on) a host of factors.

b. Differences among factors support the heterogeneity hypothesis, so that corruption must be tackled as a multidisciplinary phenomenon (Jain, 2001; Michael, 2004) related with many different features coming from politics, economics or law and depending on countries' culture, sociology or ethics. This is a new and very important step that explicitly recognizes that those heterogeneous dimensions interact in various and complex ways (Gaviria, 2002).

Because of (a) we have a large juxtaposition of elements, which may present complicated links, but not necessarily complexity. Because of (b) we have a system, that is, many forces working behind the scenes which interact forming a whole phenomenon called corruption (Backlund, 2000). The whole —corruption— cannot be divided into independent parts and its dynamics cannot be described through the dynamics of its elements.

Corruption is a system and, therefore, systemic descriptions represent the only way to a correct understanding. This is expressed as:

H1: The phenomenon of corruption presents a systemic structure formed by a high number of heterogeneous elements

The analysis of a systemic structure includes two main phases: the description of the structure—in which the insider heterogeneous elements are listed— and the description of its dynamics.

System's structure. The description of what elements get modeled and measured depends on the adopted definition. This is a problem because one of the more important objectives of the anticorruption effort has been to offer a unifying definition of corruption (Senturia 1931; Tanzi, 1998). From the seminal definition (Senturia, 1931) in the Encyclopaedia of the Social Science —"the misuse of public office for private gain"—, most authors confess that there are many problems in the common use of terms (Bardhan, 1997). Problems are so hard that it results difficult "to define (corruption) in terms that are clear and universally valid" (Argandoña, 2003: 255). Indeed, "everyone that writes about (corruption) first tries to define it" (Jain, 2001: 104).

In order to avoid this problematic question, we will not employ a definition but exclusively a list of the necessary elements. Literature on corruption across disciplines (Bardhan, 1997) accepts2 that three key features are present in every corrupt transaction (Jain, 2001; Klitgaard, 1988):

(1) the opportunity: a discretionary power over the allocation of resources;

(2) the profit: rents associated with its misuse and

(3) the risk: probability of evading regulations/penalties associated with the wrongdoing

Following this view, we can make a qualitative picture of corruption's elements.

Opportunity: the discretionary power

In modern societies, delegation of some power is assumed as a needed element for performance and efficiency. Both economic organizations and public institutions are complex team-productions. By essence and structure, they are obligated to delegate to some persons specific tasks, including the power over the allocation of resources. Because in complex societies both knowledge and information are distributed in an asymmetric way, some autonomy —a discretionary power— over the allocation of the resources is on the agent's hands (Giddens, 1983).

Under the often reasonable assumptions that, in complex organizations, contractual designs of monitoring and compensation systems (Prendergast, 1999) are not totally efficient, the discretionary power creates a potential space of opacity. Under the equally reasonable assumptions that differences of interests may exist (Jensen & Meckling, 1976; Williamson, 1999) and honesty may often be low (Casdelli & Morelli, 2004), the agent's autonomy may create a potentially risky space of opacity. And corruption flourishes behind opacity.

The literature suggests that this space of opacity and its consequences may be more or less damaging for the

general welfare depending on the design of the power delegation systems in both the container —weak institutions— and the content —weak policies— (Johnson, Boone, Breach, & Friedman, 2000).

1.1.- Weak institutions

Researchers have described corruption as one of the negative effects of weak institutional designs (Mauro, 1995; Rose-Ackerman, 1999; Wei, 2000, 2001). The weaknesses come from both political processes and rules of the socioeconomic game, which are united to the form and method of delegation (Kitgaard, 1988).

In general terms, the literature has mostly shown that a stable democratic system has a lower risk of corruption than a dictatorship or an unstable democracy (Sung, 2004). In relation with political processes, competition and participation (Ades & Di Tella, 1999; Bliss & Di Tella, 1997; Mendez & Sepulveda, 2006), stability (Fredriksson & Svensson, 2003), high education (Hauk & Sáez-Martí, 2002), political rights (Ades & Di Tella, 1997), free press (Brunetti & Weder, 2003), high levels of civil monitoring (Kaufmann, 1997), etc. appear as contributing to a democracy's success and, thereby, their absence represents an opportunity for corruption. Although caution is suggested because, given a legal system, this factor itself can not explain the difference in corruption levels between regions, some studies find empirical evidence that more long-standing democracies are less corrupt (Treisman, 2000).

In relation with the rules of the game, no property rights (Acemoglu & Verdier, 2000), no contract enforcement and the absence of efficient, politically and financially independent anti-corruption agencies (Doig, 1995) tend to be related with higher levels of corruption.

1.2.- Weak policies

Certain designs of public services could also provide rich opportunities for corruption to prosper. Corruption can be seen as the most prominent example of an illegal and opaque exchange between the political/administrative market and the economic/social market intended for personal gain (Ades & Di Tella, 1997).

On the political/administrative hand, efficient designs of regulations have been investigated in order to address reforms that seek the rationalization of public service —including the simplification and reduction of bureaucratic power by promoting greater accountability and transparency (Everett, Neu & Shiraz, 2007), competition (Ades & Di Tella, 1999) and incentives (Van Rijckeghem & Weder, 2001); the desire to replace economic state powers with market mechanisms (Clarke & Xu, 2002) or decentralization (Fisman & Gatti, 2002; Tanzi, 1995).

On the economic/social hand, the weak design has been analyzed in relation with the functioning of economic forces in an environment in which a large amount of resources are administered by the state. There is evidence that corruption is associated with more unofficial activity and weak market rules (Friedman et al, 2000). Its performance has been studied in certain states of "corruption's development", related with the number and size of players —'market' and 'parochial' corruption3—, their mutual relationships —collusion or non-collusion systems (Bardhan, 1997; Foellmi & Oechslin, 2007, Rose-Ackerman, 1999)—, the behavioral attitudes of both parties of corrupt contract (Guerrero & Rodríguez-Oreggia, 2008), the asymmetry among the players or the source of the rent, etc.

1. Profit: the extraction of rents.

A weak and inefficient public sector may offer some discretionary and opaque power, which itself is an opportunity for corruption. However, corruption is a calculative crime, not a crime of passion (Klitgaard, 1988). In the decision to bribe or to accept being bribed, both the profit —rent-seeking behavior— and the cost play a principal role.

Corruption is associated with scenarios where the extraction of economic rents for private gain is available (Friedman et al, 2000). In those scenarios, rent-seeking bureaucrats who distribute commodities may take bribes; and governments who allocate commodities at low prices diverting public funds may extort firms or may be extorted by corporations looking for government benefits and/or costs avoidance (Wu, 2005).

Several studies have found cross-country evidence on the connection between corruption and higher rents coming from active industrial policy and low degrees of openness (Ades & Di Tella, 1997, 1999; Wei, 2000;). Trade restrictions (Mauro, 1998), favoritism in industrial policy such as subsidies and tax deductions (Sanyal, Gang, & Goswami, 2000) price control and government-controlled provision of credits are some of the underlined factors which permit the capture and extortion in public purchases (Auriol, 2006).

2. Risk: penalties and sanctions

Corrupters calculate both costs and profits. Corruption exposes the agent to the legal penalty system. As an unethical activity, it is also open to social sanctions. Both costs are very different across countries; these differences could be stressed as a source of variation in corruption levels across countries.

In relation with the legal penalty system, a poorly-functioning judiciary is an incentive for corruption. Where the system has no penalties or where it presents leniency (Buccirossi & Spagnolo, 2006) because the law is not applied or has not effect at all, the cost of crime will be low, so that attractiveness for the rational corrupter increases.

In that sense, two policies have been extensively considered: the rationalization of sanctions (Bowles & Garoupa, 1997) and the rationalization of incentives for enforcers, such as paying rewards (Becker & Stigler, 1974).

In relation with social penalties, sociology and comparative economics suggest that institutional efforts against corruption are always incomplete strategies (Banerjee, 1997) if socio-cultural factors are not included. Socio-cultural factors have to do with attitudes toward corruption.

In this line of reasoning, religious tradition (La Porta et al, 1997; Treisman, 2000); civil vs. common law systems (Treisman, 2000); or individualism vs. collectivism (Husted, 1999) have been directly examined. High corruption levels have also been related with inequality (You & Khagram, 2004) and low economic

growth, but there appears to be a vicious circle because poor countries tolerate corruption better than rich countries.

The behavior of corruption's system: A systemic structure formed by a high number of heterogeneous elements would be complicated but possible to cope with if interactions among those elements were trivial and easy to be recognized. If that was the case with corruption, after identifying the systemic elements, the parochial re-design of the environment should be trivial.

Even though a large number of corruption models have accepted the triviality hypothesis, it does not seem to be the most appropriate. There is evidence suggesting that relationships between corruption and factors which theoretically create attractive opportunities for corruption tend to be non-trivial.

This is expressed in our second hypothesis:

H2: Relationships among elements are essentially non-trivial interactions

When modeling and understanding corruption, several serious complications are encountered since relationships among the system's elements are non-trivial.

a) Causal connections

There is evidence enough to suggest that some of the important relationships described around corruption are two-way causal connections. For instance, from the seminal work on the subject (Mauro, 1995), a large number of empirical cross-country studies has appeared to prove a negative relationship between corruption and income. Corruption would harm growth by reducing the incentives to invest. This distorts the allocation of resources, leading to underinvestment and poor growth rates.

However, others have shown that corruption seems to be itself a function of income. There is a reverse causal relation so that environments of poverty are likely to generate corruption (Mendez & Sepulveda, 2006). Its incidence is directly affected by economic wealth because of the greater anticorruption budget of rich countries. The impact of income on corruption is visible in other ways. For example, corruption seems an important impediment for FDI in developed economies, but not that much in developing countries (Egger & Winner, 2006).

Bureaucratic malpractice influences but is also influenced by the level of development (Blackburn et al, 2006). The same circular effect occurs in relation with reforms (Tavares, 2007). It is not clear whether the institutional lack of quality favors corruption or the other way around (Guerrero & Rodríguez-Oreggia, 2008). Two-way causality has been also detected between corruption and poverty, foreign aid and inequality (Tavares, 2003 ,You & Khagram, 2004).

b) Endogeneity

The existence of problems at the moment of identifying the causal direction and deciding what variables will be utilized as instruments is obviously crucial from an empirical perspective. If those problems are not controlled, results can not be trusted. If the dependence between explanatory variables and the explained variable creates a circular causality relationship, a problem of endogeneity for any econometric approach to the issue emerges.

In fact, many of the corruption models suffer from potential endogeneity. Endogeneity has been detected, for instance, between red tape and corruption (Guriev, 2004); corruption and income (Cole, 2007; Mauro, 1995); corruption and competition (Emerson, 2006) and corruption and centralization (Glaecer & Saks, 2006).

Some techniques allow to partially overcome this problem, but they are not sufficient. For instance, in the analysis of the effects of corruption on economic growth, it has been suggested to control for endogeneity by using an index of ethno-linguistic fractionalization as an instrument (Mauro, 1995) -or other similar econometric methods -, but this instrument might be directly or indirectly correlated with economic growth (Easterly & Levine, 1997) and in consequence, it is not a valid instrumental variable. Therefore, both could respond simultaneously to an omitted cultural, legal or historical factor, such as the cultural dispositions toward leisure or morality (Mendez & Sepulveda, 2006).

In a widely cited paper on the causes of corruption (Treisman, 2000), instrumental variables are used to correct for endogeneity. It only works for one of the explanatory variables, so that the author acknowledges that, because of endogeneity problems a large question mark remains over the impact of some of the other key variables.

The same problem of circular causality arises among factors that are thought to explain corruption. For instance, democracy and openness to trade are included as explanatory variables in the equation. But democracy can foster openness and openness can fuel demands for more political liberties (Rigobon & Rodrik, 2005).

It is reasonable to think there will be problems of collinearity in corruption models. Explanatory variables like culture, religion and legal tradition are likely to be correlated It then becomes difficult to distinguish their individual influences on the corruption variable. This situation increases the risk of model misspecification: finding the correct model is not guaranteed at all because of the non-trivial relationships among elements.

c) Data

Problems go even further when testing any chosen model since results may largely depend on data (Glaeser & Sacks, 2006). Available data could be inadequate measures of theoretical and real variables or concepts. This is also a problem when controlling the strategies that have been implemented and their results

Data regarding the level of corruption are often taken from the Corruption Perception Index (CPI) compiled by Transparency International. This indicator has become the most popular measure in cross-national statistical analyses over the last several years. Literature suggests that CPI results are imprecise because of both its definition and its accuracy (Johnson, 2000). In relation with the definition, Transparency International (TI, 2000) admits that CPI components often do not measure the same thing, so that data vary widely from one year to the next.

The accuracy of CPI is also problematic because of its dependency on the accuracy of the components in a

particular year. Accuracy is also compromised by the fact that the index combines component measures that cover different set of countries.

Researchers and practitioners should be aware of measurement errors and omitted-variables bias. And, since data on corruption are based on perception indices, typically constructed from experts' assessments of overall corruption in a country, there is an additional concern on perception biases. The CPI itself suffers from an endogeneity problem because the observers' perceptions about corruption change with their perceptions about other variables, like macroeconomic performance (Seligson, 2006). Although the CPI is probably the best measure currently available for a worldwide ranking, its ratings should be interpreted with some reservation.

Corruption as a dynamic phenomenon. The non-trivial systemic character is the key first ingredient for complexity, but not the only one. The key division between complicated and complex systems depends critically upon how the system changes and is transformed (Richardson, 2005). Two types of changes can be distinguished: evolution and novelty.

1. Changes that are responses to exogenous perturbations –the *evolution* of the system-. There are two categories:
    a. Systems with observable logic links between their past and future events. Past evidence can be used to make reasonably accurate forecasts.
    b. Systems where the future cannot be predicted in any reliable way. The system can respond in many ways to environmental perturbations. The system can surprise the observers, displaying a wide-range of different qualitative behaviors. We suggest that corruption presents surprising behavior

    H3: the corruption system is capable of surprising behaviors, by responding in more than one way to any change in its environment.

2. Endogenous changes emerging without exogenous stimuli —the *novelty* of the system—-. This dimension describes the self-transformation of the system; its creative response to any new internal behavior, knowledge or changes in preferences (Allen & Torrens, 2005).

We suggest that due to the hierarchical character of the corruption, the phenomenon presents 'novelty':

H4: The corruption system is capable of 'novelty', by evolving into states that are not apparent from its constituents.

Corruption's evolution. Corruption is an *evolutionary phenomenon*. Some authors (Bardhan, 1997) portray corruption as a tenacious problem whose structure evolves over times and places. Others (Ades & Di Tella, 1997) reach an identical conclusion for political corruption. Since corruption takes place in frameworks formed by legal, economic, cultural and political elements, the phenomenon is necessarily open to institutional dynamism (Hodgson, 2002). However, the literature has also neglected the analysis of these evolutionary behaviors.

We believe corruption does not follow simple patterns of behavior in answer to environmental perturbations. Societies undergo economic, political and cultural changes that affect individual decision-making and corrupt behaviors. Corrupt agents will survive if they can learn from changes and act more efficiently than governments and markets, in an adaptive process. Because short-term fluctuations in the overall system are intrinsically unpredictable, corrupt behavior survives in a changing society. And corruption adds complexity since the answer of corrupters to changes cannot be predicted.

Moreover corruption comes in many guises. Campaigns to minimize the opportunities and incentives of any form of corruption may induce the growth of another form because corrupters may quickly adapt their behavior in order to minimize the cost of penalties or social pressures. Thus, the fight against corruption and corrupt efforts may be correlated and the "absolute integrity" results impossible (Anerchiarico & Jacobs, 1996). The legal system seems unable to keep pace with corrupters and corruption may continually expand its capacity to answer.

Corruption's 'novelty'. The literature has also timidly noted that, even without reactions to exogenous perturbations, the corrupt system itself changes (Aidt, 2003). We consider that the description of corruption as a self-transforming and creative phenomenon is essential to understand the nature of its complexity as long as this factor is able to produce a high degree of behavioral complexity.

Literature on corruption has shown two different sources of novelty: the historical and the hierarchical character of corruption. Both are consequences of the social character of mankind. Corrupt individuals desire/need to interact with other corrupt individuals in the same society or organization, creating a particular history for the corrupt system. This dimension is largely connected with the hierarchical character of the phenomenon. The incentives of an individual to be corrupt are affected by others not only because of the desire of approval, but also because that individual is part of a system, and not an isolated element.

Although it is from the decisions of self-interested individuals that corruption finally stems (Husted, 1999), the phenomenon presents a social facet. A decade ago, political and sociological studies were focused on the broad range of individual behaviors and the official vice, acting or not in "organized" (Bac, 1998) or mafia groups (Gambetta, 1993). Nowadays, most of the economic analysis on corruption focuses on collective corruption entailing voluntary collaboration among self-interested accomplices. This social nature is viewed as hierarchical (Bac, 1996; Mishra, 2002).

Controlling corruption in hierarchies introduces new complexity in the analysis of this unethical behavior (Bac, 1996) because

(a) supervisory procedures must be added (Bac, 1998) and

(b) models must include dissemination mechanisms working from upper levels to lower levels, and *vice*

versa since corruption can spread in both directions (Goudie & Stasavage, 1997).

In summary, corruption must be considered as a complex phenomenon because of the number and heterogeneity of its elements that, once they meet, form non-trivial links. These links in turn pave the way to creative changes following both the environment's evolution and inner developments of the complex system. Any effective anti-corruption strategy must explicitly tackle this complexity.

Implications

The fight against corrupt practices needs to be conducted on a broad front. Curbing corruption must avoid the use of simple and instrumental strategies. It must rely on a wide variety of actors and issues. Indicators based on single and linear cause-effect relationships (supposedly manageable by traditional regulation) are not enough. A new approach is needed.

The increasing complexity of governing cannot be addressed only in a hierarchical direction (horizontal instruments) but demands the development of continuing interaction (vertical instruments) among different actors and interdisciplinary indicators, that is, governance (Rhodes, 1997). While information, resources and capacity for anticorruption are widely dispersed and asymmetrically distributed between public and private organizations and sciences, any efficient anticorruption strategy must transform that plurality into an unique governance design.

The process of building and institutionalising a "self-organising network" for anticorruption is not easy. While relationships between government and private organizations or individuals are based on coercion and control, governance interactions between public and private organizations must be rooted in mutual trust and negotiated rules of game. Government designs horizontal instruments for coercion which connect single cause with single effect; on the contrary, governance needs vertical instruments with capacity to connect a plurality of causes and effects.

Mutual trust and negotiation with non-state actors are not habitual for policy-makers, but real governance will be only possible if this new perspective is adopted and vertical instruments are developed and implemented. To obtain the involvement of the non-state actors, the WGB suggests the design of instruments "that give voice to beneficiaries (such as beneficiary surveys and citizen scorecards)"; "enabling the development of independent and competitive media that can investigate and report on governance work" or that create "opportunities for (civil society) participation and oversight" (WBG, 2006: 12 - 14), in which the business community is considered a "crucial ally" against corruption (WBG, 2006: 17). Sadly, its appeals to governance are still limited to the methodological arena. Thus, traditional indicators focused on coercive norms continue being instrumental.

As the modern moral philosophy does, most of the literature on corruption continues to focus on sanctions. Duties and norms are emphasized, but dispositions and judgement are excluded (Melé, 2005). Similarly,

institutional pressures rather than strategic analysis of social issues and stakeholders seem to guide some decision-making of multinational companies with respect to corporate social responsibility (Husted & Allen, 2006). Ethical programs from international institutions tend to be adopted primarily as a response to institutional guidelines, that is, as horizontal instruments.

But this is a very weak vision of ethics. In fact, ethics is the most vertical instrument, which allows us to explain the union between the person and his/her actions. Ethics contains all the person's facets, including rules, habits, dispositions and goals. A complete ethical understanding results an instrument able to link diverse issues and actors in the fight against corruption.

Corrupt behaviour must be understood as a prâxis, that is, as an action which is the result of many diverse past activities affected by institutional rules, social norms, personal habits or individual and organizational values. While government regulations investigate what causes corruption, and its resolution through the change a concrete cause, ethics investigates why corruption exists, obligating us to understand simultaneously dispositions, rules, values and goods.

Ethics is often presented in a fragmented manner as a separate set of rules, principles, values and virtues (Melé, 2005). However, those elements form a unity. This leads us to an appropriate analogy. Corruption is a complex phenomenon, whose diverse elements form a unity. Its eradication obligates us to employ similar instruments, that is, complete governance instruments, such as ethics.

Our conclusion is that, because of its nature of complex social phenomenon, corruption needs governance solutions. Regulation works exclusively in the horizontal direction. We need vertical instruments, which make it possible to permeate all the "onion layers".

The business community has gone over a part of this road, recognizing ethics as an efficient instrument which permits a vertical combat. The codes of voluntary ethical conduct or the programs on corporate social responsibility are good examples. If the business community is able to self-regulate its conduct, anti-corruption strategies must rely on these conditions and experiences in order to ensure success.

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NOTES

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[1] For an introduction to the study of complexity, see Holland (1995).

[2] Beyond that consensus, an ongoing debate persists in certain contexts over the exact meaning of terms such as discretionary power, misuse or penalty. The public or private character of discretionary power, the existence of illicit but legal corruption, or the corruption without monetary rents are several examples of problematic questions.

[3] "Market corruption" (Scott, 1972)—rents are allocated competitively to whichever firm or citizen who pays the highest bribes— has been studied in relation with rent-seeking contexts (Nitzan, 1994). "Parochial corruption" —situation where barriers to access favors of power-holders (Lambbsdorff, 2002)— has been related with favoritism and linked with social structure (Kingston, 2007).

HOW READABLE ARE ENVIRONMENTAL POLICY STATEMENTS? AN EXPLORATORY STUDY WITHIN THE IT INDUSTRY

Anthony Chan, Leyland Pitt**, Adam Mills***

Abstract

Environmental policy statements are nowadays fairly ubiquitous, particularly among large organizations. Such statements continue to be seen as an important element in the sustainability initiatives of organizations. However, if they are to have a chance of achieving the desired positive outcomes that those in their favor highlight, they must first be readable and comprehensible to the targeted stakeholders. To investigate the readability of environmental policy statements of IT companies, the individual environmental policy statements of Information Technology companies were collected. A readability calculation tool was then employed to assess the readability of each of these environmental policy statements. Results are reported, and the implications are considered, while limitations are noted and directions for future research are identified.

Keywords: Environmental Policy Statement, IT Company, Sustainability, Organizational Strategy

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Are it company environmental policy statements readable? Evidence from the top 100

As global concern for the future of our physical environment has increased, many organizations, government departments and agencies and not-for-profit groups have attempted to articulate their stance on these issues. Prompted by environmental disasters like the Exxon Valdez calamity and the more recent BP Gulf oil catastrophe, questions are being asked of governments and companies alike. Companies are being queried about their policies regarding the environment, and governments are being held accountable by their electorates for ensuring that business acts in a responsible manner, and punished when it doesn't.

Environmental impact statements are documents required by the National Environmental Policy Act under United States federal environmental law, to guide federal government agency actions "significantly affecting the quality of the human environment" (National Environmental Policy Act, 1969). Most large companies today have published environmental policy statements as part of annual reports, or as documents communicated to shareholders, suppliers, employees, customers and other stakeholders. There are consultants and websites offering assistance in the writing of environmental policy statements (e.g. Striano, 2008), or that provide free, adaptable environmental policy statements (http://www.environmentalpolicy.org.uk/statement.html).

The Information Technology (IT) industry has not been immune to accusations concerning its impact on the environment. On the contrary, the industry is seen as both an excessive consumer of resources, and an extreme producer of harmful waste. The energy demands of the Internet are increasing by more than 10 percent each year. The power usage of the computer industry has gone from being relatively small to overtaking other sectors like the airline industry. U.S. data centers, for example, used 61 billion kW of power in 2006, enough to supply the U.K. with energy for two months, accounting for 1.5 percent of the electricity used by the U.S. (Ellicott, 2009). As a maker of waste, the computing industry discards materials that contain a multitude of toxic substances including dioxins, cadmium, chromium, radioactive isotopes and mercury. Computer monitors contain more than 6 percent lead by weight (between 1.5 and 8 pounds in the lead glass of a cathode ray), and circuit boards contain lead-tin solders likely to leach into groundwater or to create air pollution via incineration (Royle, 2005). Most IT firms, particularly the larger multinationals, are aware of the situation and have attempted to articulate their stances on these issues by publishing environmental policy statements.

Those who write an IT company's environmental policy statement not only do so with internal (shareholders and employees) or external (suppliers and customers) audiences in mind; they also need to ensure that their environmental policy statements are clear and comprehensible to a larger audience, including government, media, environmental action groups and the general public.

In all likelihood, IT companies devote considerable effort to the development and adoption of environmental policy statements, given the strategic and public relations importance, and the fact that they necessarily seek multi-stakeholder targets. IT firms undoubtedly hope that the different stakeholders not only read them, but also understand what they are trying to communicate. Understanding the written environmental policy statement could have desirable consequences in terms of comprehension, interest and enhancement of the reputation and standing of the firm. At the heart of this comprehensibility of the environmental policy statement is readability. In order to be understood, an environmental policy statement should be readable.

The level of readability of environmental policy statements has received limited attention in the literature, and this is particularly true in the case of the environmental policy statements of IT companies. Given a desire for conciseness on one hand and aspirations toward the inclusion of all topics needed to meet the expectations of different stakeholders on the other, it is not surprising that many statements may not be seen to be particularly easy to comprehend in any meaningful way. If environmental policy statements are to be useful and understandable by all, they need to be readable. In this paper we report the results of a study that investigated these issues.

We begin by first considering the role of environmental policy statements in organizations with particular reference to IT companies, and then the notion of readability. Then we proceed to collect the environmental policy statements of the IT companies in the Greenfacts (http://www.greenfactorstudy.com/) rankings of 2009, and employ content analysis and appropriate scores to investigate the readability of the environmental policy statements gathered. The results are reported and some similarities and differences are explored. Finally, the implications are considered, the limitations are acknowledged, and directions for future research are noted.

Environmental Policy Statements and Their Relevance to IT companies

An environmental policy statement has been defined as a "written set of principles that outlines a company's mission to manage the environmental effects of its people, activities, and operations and helps to put its environmental commitments into practice" (Striano, 2008). It is an attempt by an organization to delineate the nature of its stance toward the environment and the firm's environmental practices. The statement should give clear direction to the organization's employees, management, shareholders, customers, suppliers and other stakeholders as to where it stands on environmental matters, specifically with regard to how the organization will and will not act.

The benefits of a well-written, clear, environmental policy statement are not inconsiderable. The statement provides guidance to decision-makers and employees, and enables the organization to clearly position itself in the eyes of current and potential customers. It provides a reassurance to the general public that the firm is aware of and committed to managing its impact on the environment. This should permit the organization to maintain better relationships with governmental agencies and NGOs concerned with the environment. Not least of the benefits of a well-written and sound environmental policy is the fact that it can be a powerful marketing and public relations tool.

The environmental policy statement is an integral part of the communication and strategy of any IT company. Recognizing the impact that IT companies can have on the environment, the action group Greenpeace devotes considerable space on its website to providing a "guide to greener electronics" and to ranking IT companies in terms of their environmental efforts (http://www.greenpeace.org/international/campaigns/toxics/electronics/how-the-companies-line-up/). Greenpeace also encourages website visitors to take action to get IT firms to not only "act greener" but also adhere to their stated policies. For example, a click through banners on the site (on September 29th, 2010) exhorts surfers to "Take action: Tell Dell to phase out the use of toxic chemicals".

Readability and Comprehension

Readability is foundational to the communication process. Readability is an assessment of the quality, content and style of written language that may be attributable to a document as related to the ease of reading and comprehension from the perspective of the audience. A measure or impression of readability is multi-faceted, including such technical characteristics as sentence structure, vocabulary and word length, as well as more qualitative measures such as legibility, tone and content layout (Klare, 1963). The study of readability takes into account that comprehension and understandability is as much (or more) reader-centered as author-centered, and therefore must take into account subjective factors related to the audience such as reader competence and reader motivation (Klare, 1980).

Much of the research on readability has concluded that text that is considered easy to read – relative to the intended audience – improves comprehension, retention, reading speed and reader persistence. Measures and approaches for estimating readability compare appropriateness of text content, both semantic and syntactic, to its accessibility by various audiences and education or grade levels (Gray and Leary, 1935).

Readability and effective writing have long been a concern in management. The importance of readability has been stressed in many business disciplines, including

finance and accounting (e.g. Blouin, 2010; Li, 2008), marketing (e.g., Mackey and Metz, 2010; Milne, Culnan and Greene, 2006; Kover, 2002; Leong, Ewing and Pitt, 2002; Clark, Kaminski and Brown, 1990; Kaminski and Clark, 1987) and public relations (e.g. Geary, 2001), recognizing that if readability and comprehension are not successful among the target stakeholders of a given piece of writing, the author's desired intent of writing the piece may not be achieved. A seminal paper on effective report-writing by Ehrenberg (1982) provides a number of useful guidelines under five main headings, namely: 1. Start at the End; 2. Be Prepared to Revise; 3. Cut Down on Long Words; 4. Be Brief; and 5. Think of the Reader.

A number of measures and formulae have been developed that sought to establish standards or benchmarks for assessing the level of difficulty of a piece of reading material (for a detailed review see Zakaluk & Samuels, 1988). Six of the most recognized and utilized methodologies for measuring readability are outlined below: the FOG Index, the Reading Ease Score, the Grade Level Score, SMOG, the Coleman-Liau Index and the Automated Readability Index.

One of the most widely used indices to assess report writing is Gunning's FOG index (1952). While Gunning's early work focused on children's texts, the FOG Index lends itself particularly well to reports and papers. Ehrenberg (1982) puts forward a simplified description of the FOG index as follows: "We count the words of three or more syllables and the number of sentences on about half a page of writing. (I count the long words in my head and the sentences on my fingers.) We then divide the number of long words by the number of sentences." He notes that:

"A piece with a fog-factor of 2 or 3 remains easy to read. If the count goes up to 4 or 5, it becomes heavy going. Yet academic and technical writing often averages 6 to 8 long words per sentence, and sometimes more than 10. Which is why it is like it is. (Long words strain our short-term memory. They make it difficult to remember how a sentence started by the time we reach its end.)"

The SMOG Measure (Simple Measure of Gobbledygook) was developed by McLaughlin (1969) as a more accurate and easily calculated substitute for Gunning's FOG Index. SMOG calculations are based loosely on counting the number of words with three or more syllables in a given number of sentence samples, and estimates the years of education needed to completely understand a piece of writing. The SMOG Measure is widely used, particularly in the healthcare industry (e.g. Hedman, 2008).

Rudolf Flesch (1948) concerned himself specifically with devising a measure of readability for adult material. He proposed two measures of readability: the Flesch Reading Ease Score, and the Flesch–Kincaid Grade Level Score. Flesch's Reading Ease Score is based on the computation of Average Sentence Length (or ASL, the number of words divided by the number of sentences) and Average Number of Syllables per Word (or ANS, the number of syllables divided by the number of words). The ASL and ANS are calculated and weighted to provide a score on a 100-point scale with higher scores

related to greater ease of understanding. For most documents, Flesch recommended a target readability score of approximately 60 to 70. Various government agencies and institutions around the world employ the Flesch Reading Ease Score to access the readability of their public documents and forms, and the Score is often bundled with word processing software including Microsoft Office Word. The Flesch–Kincaid Grade Level Score also uses ASL and ANS but employs different weightings so that results correspond to U.S. school grade levels. For example, a Flesch–Kincaid Grade Level Score of 8.0 means that an eighth grader should be able to understand the document, and so forth. The two scales correlate approximately inversely with each other.

The Coleman-Liau Index (Coleman and Liau, 1975) and Automated Readability Index (Senter and Smith, 1967) took a slightly different approach to gauge the understandability of a piece of text, with the intent of capitalizing on technology to assist in calculation. Their outputs again approximate the U.S. grade level thought necessary to comprehend a piece of text, but unlike the previous four other indices, the CLI and ARI refer to characters per word rather than syllables per word. Operating on the premise that characters (as related to word and sentence length) are more readily and accurately counted mechanically than are syllables, the CLI and ARI were some of the first tests designed to exploit technology in the analysis of readability.

While early computing and text scanning devices could be used to count characters without assessing text, current computer technology has the ability to cope easily with both approaches. Recent versions of Microsoft Word, for example, have Flesch's Reading Ease Score and the Flesch–Kincaid Grade Level Score built into their programming, and dedicated websites such as http://www.read-able.com/ enable users to calculate multiple readability indices in a very short time.

A key requirement for any environmental policy statement is that it will be readable and understandable, and as with any effective written communication, it is necessary to consider both the writing and the target readership in assessing readability. The latter, however, is particularly challenging with respect to environmental policy statements as there are often multiple target stakeholder and readership groups with varying levels of education and sophistication. It is not surprising that many environmental policy statements can be seen as confusing or difficult to comprehend, given the simultaneous needs to a) remain concise, b) remain approachable and understandable for all target stakeholder groups, and c) meet the content expectations of these various groups with often unrelated areas of interest. Failure of many statements to understand and balance these three requirements, resulting in a lack of readability for one or more stakeholder groups, stokes the growing cynicism with which many environmental policy statements are met, both by those within an organization and outside of it.

The Study Methodology

As stated earlier, this study of information technology company environmental policy statements focuses on the 25 IT companies identified by Greenfacts (http://www.greenfactorstudy.com/). GreenFactor is a joint research initiative between Strategic Oxygen and Cohn & Wolfe, both consulting companies, to "illuminate 'green' marketing opportunities and further 'green'-focused research on a global scale". GreenFactor's (2008) study surveyed 11,740 IT professionals of small, medium, and large companies in 13 countries. Respondents are asked to identify 6 IT brands that they most associated with being "green", which was defined as "efficient power consumption, recyclable/reusable packaging, recycling offers for older equipment, use of non-toxic materials, or making investments in future green concepts such as alternative materials" (GreenFactor, 2008).

The first phase of the methodology therefore involved extracting as many environmental policy statements from the 25 IT companies' websites as possible. Each environmental policy statement's text was imported in to an Excel spreadsheet along with the company's name and its ranking in the Greenfactor study. This was later reduced to terciles, based on "High", "Medium" and "Low" perceived "greenness" of the IT company brands. Then the text of the environmental policy statement was analyzed using the Readability Test Tool (www.read-able.com). This is a free online service that permits the user to analyze the readability of any piece of text, whether it be text from a website, a piece of text input directly, or text from a link on a web page. The site then analyzes the text and reports on its readability with regard to the:

- *Flesch Kincaid Reading Ease   Score*
- *Flesch Kincaid Grade Level*
- *Gunning Fog Score*

- *SMOG Index*
- *Coleman Liau Index*
- *Automated Readability Index*

And also the:

- *Number of sentences*
- *Number of words*
- *Number of complex words*
- *Complex words as a percent of total words in the script*
- *Average words per sentence*
- *Average syllables per word*

The Results

The results of the readability analysis of the environmental policy statements of the Greenfactor IT companies are presented in Table 1, for all the indicators outlined above. The mean, standard deviation, minimum and maximum scores for each of the readability measures, as well as the basic descriptives of the text (number of sentences, words, etc) are reported. It will also be noted that an "Average Grade Level" is also reported in the table – this is a simple average of the scores on the combined Flesch Kincaid Grade Level, Gunning Fog Score, SMOG Index, Coleman Liau Index and Automated Readability Index measures. In simple terms the scores in Table 1 should be interpreted as follows: Ideally, the score on the Flesch Kincaid Reading Ease measure should be positive and high, the scores on the Average Grade Level, Flesch Kincaid Grade Level, Gunning Fog Score, SMOG Index, Coleman Liau Index and Automated Readability Index are better low than high, and the scores on the number of sentences, number of words, complex words, percent of complex words, average words per sentence and average syllables per word are better low than high.

Table 1: Descriptive Statistics – Readability Measures of IT company Environmental policy Statements

Indicator	Mean	Std. Deviation	Maximum	Minimum
Flesch Kincaid Reading Ease	34.62	12.11	62.30	10.30
Flesch Kincaid Grade Level	10.38	1.91	15.20	1.91
Gunning Fog Score	10.44	2.63	15.50	2.63
SMOG Index	8.19	1.72	12.00	1.72
Coleman Liau Index	18.60	2.28	21.60	2.28
Automated Readability Index	10.02	2.20	15.00	2.20
Average Readability	11.53	1.74	15.32	1.74
No. of sentences	131.28	114.44	477.00	5.00
No. of words	750.08	499.15	2431.00	8.00
No. of complex words	177.08	116.39	524.00	1.00
Percent of complex words	24.30	5.99	38.30	5.99
Average words per sentence	7.85	3.77	17.89	2.75
Average syllables per word	1.91	0.15	2.17	0.15

It is clear from Table 1 that the readability of the environmental policy statements of the Greenfactor IT companies varies greatly. The Flesch Kincaid Reading Ease score mean is 34.62 with a standard deviation of

12.11. The range of readability on this indicator is considerable – one company scores a high of 62.30, which means that its environmental policy statement is extremely readable, while the lowest score is 10.30, which means that the company's environmental policy statement borders on incomprehensibility. The range on all the grade level indices is also extremely wide, with some firms' environmental policy statements being extremely easy to read, and others requiring high levels of education to be comprehensible. For example, the highest score on Gunning's Fog Index is 15.50, which means that in rough terms, in order to understand it, an individual would need around 16 years of education. Texts that are designed for a wide audience generally require a Fog index of less than 12, while texts that require a close-to-universal understanding generally require an index of less than 8 (Gunning, 1952). Similarly, one of the firms studied has an environmental policy statement with readability on the Coleman Liau index of 21.60, which means that an individual would require 22 years of education (equivalent to a PhD), to be able to read and comprehend it easily.

In order to see whether the readability of environmental policy statements differed by IT company ranking in the Greenfactor study, we divided the firms into terciles (as previously described), and compared the Flesch Kincaid Reading Ease Scores and the Average Readability Indices across the terciles, using simple analysis of variance (ANOVA) procedures. The results of this analysis are presented in Exhibit one.

It is clear from Exhibit 1 that there are no significant differences across the terciles in terms of the readability of the environmental policy statements of the IT companies measured by the Flesch Kincaid Reading Ease Score. However, perusal of the diamond plot in the exhibit seems to suggest that there is a possibility that the environmental policy statements of the "High" greenness tercile of IT firms might indeed be more readable than the medium and (particularly) the low terciles. The reasons for this are obviously debatable, open to speculation, and worthy of future investigation. It could be that the greener companies have thought more clearly and carefully about their environmental policy statements, and have spent more time on making their environmental policy statements clearer and more readable. It could also be that these firms, once having formulated their environmental policy statements, have then engaged the services of writing professionals, perhaps in an ad agency or PR consulting firm, to rewrite their environmental policy statements to make them more readable. The same phenomenon is observable but to a lesser extent (and is also not significant) in the case of the Average Readability index (a mean of the means of the summed Flesch Kincaid Grade Level, Gunning Fog Score, SMOG Index, Coleman Liau Index and Automated Readability Indices). There is a possibility that the environmental policy statements of the greener IT brands require fewer years of education to be comprehended.

The mean Flesch Reading Ease Score for all firms in the sample stands at 34.62 (sd = 12.11). Numerous sources (e.g. Kerr, 2007) state that Reader's Digest magazine has a readability index of about 65, Time magazine scores about 52, and the Harvard Law Review has a general readability score in the low 30s. When one considers that the higher the score on the 100–point index of the Flesch Reading Ease scale, the higher the ease of reading, and that most organizations that make use of this score target a minimum score of 60, it is clear that on average the readability of the environmental policy statements of the IT companies in our sample is low. The same can be said for the scores on the all the Grade Level indicators, where the mean for all the firms in the sample is 11.53 (sd = 1.74), with a high grade score of 15.32. The interpretation of this is that for the reader to understand what is being said in the average IT company environmental policy statement would require some 12 years of schooling, and at the extreme, to have at least attended university. Many people would likely have difficulty understanding what some IT firms are trying to communicate in their environmental policy statements.

This raises the issue of whether those who manage IT companies should seek to develop environmental policy statements targeting different stakeholders. The most useful purpose of environmental policy statements may be primarily as an internal tool to help senior executives crystallize their thoughts in the pursuit of a sound environmental policy. If it is anything else, such as communicating this stance to others, including customers and employees and the general public (some of whom may not have completed high school), then problems might occur.

Limitations, Managerial Implications and Avenues for Future Research

Limitations

Environmental policy statements are, of course, not the only tools that IT companies use to communicate their stances on sustainability and the environment with stakeholders. Generally, such messaging is communicated by a range of communication styles activities, and communications tools than environmental policy statements have not been included or assessed in this study.

Without definition of target audiences by the corporate authors, it is conceivable that some of the environmental policy statements analyzed in this research have been constructed by senior executives for stakeholders such as other senior managers, investors and senior government officials who the authors assume would have above-average abilities to comprehend complex or sophisticated written language or subject matter.

This study used the environmental policy statements of 25 of the Greenfactor companies for analysis. While this is a reasonable sample considering organizational typology, we do recognize that the data collected has therefore not included large and small IT companies all over the world not included in the Greenfactor ranking.

Additionally, the analysis herein represents data from a "snapshot" in time and is therefore representative only of the environmental policy statements of the 25

companies in Fall 2009, and does not reflect any changes that may have occurred since. Indeed, if any of the companies in question have changed or revised their environmental policy statements significantly since then a re-analysis of the data could result in notably different readability scores.

Managerial Implications

This study suggests that, generally, the environmental policy statements of many IT companies (such as the 25 included in this study) are written at a level of comprehension greater than that of the audience, leading to lower than average measures of readability.

It is our recommendation for management, then, to take into account the average reader skill and comprehension level of the largest group of target stakeholders when writing single and universal environmental policy statements. In most cases, we assume, this would entail revising policy statements from a senior management or government level "down" to the readability and comprehension levels of the general public or a certain public demographic group.

That said, it is arguably easy to over-emphasize the education-related aspect of readability. In fact, it may well be the case that even highly educated executives and public officials prefer to read and better comprehend text that is written at a lower readability level. There may be a subtle difference between a document being "not difficult" to read (i.e., "I can understand it") and "easy" to read (i.e., "Not only can I understand it, but I can read it easily and enjoy reading it"). While the audience's prior education, knowledge of the subject matter and reading skill will, intuitively, determine their comprehension, it can similarly be argued that the audience's interest in and motivation toward the subject matter of the environmental policy statement will determine the extent to which they believe in and act on it (Gray and Leary, 1935).

Avenues for Future Research

A number of worthwhile directions for future research are suggested by the findings of this study. First, it would be worthwhile in future studies to include a larger sample of various-sized IT companies – if possible, including firms that were nominated for, but not included in, the Greenfactor study. There are also other corporate ranking systems (for example, Greenpeace), which may yield a very different ordering or set of data than the Greenfactor rankings. In this light, interesting comparisons could be made between ranking systems and ranking priorities. The environmental policy statements of exclusively non-ranked IT companies could also be included in analyses, then compared with data found in the sets of ranked companies. This comparison might shed further light on our observations above that readability of environmental policy statement tends to deteriorate as corporate ranking decreases.

Second, a more detailed computerized content analysis of the readability of environmental policy statements in the current sample, or in future samples suggested above, would shed further light on the nature of the text contained within them. For example, WordStat (Peladeau, 1999) permits users to impose concept-

representative dimensions so a piece of text can be analyzed in terms of the frequency with which the predetermined concepts occur. Then, using correspondence analysis (Greenacre, 1993), different types of organizations can be contrasted against the concepts and placed on a two-dimensional perceptual map that facilitates graphic interpretation.

Another type of computerized content analysis, Leximancer, could also provide useful insights into the content of environmental policy statements. Leximancer is a software program designed for interpreting and visualizing complex textual communication. The program uses data-mining technology to interpret prose data and identify the main concepts in a body of text, and relate these concepts to one another using conceptual-thematic and relational-semantic analyses (for a detailed description see Rooney, 2005). Once a concept has been identified, the software goes beyond keyword definition and searching by creating a thesaurus of closely related word phrases that tend to travel together. The program then displays a visual concept map that portrays the main concepts and their interrelationships.

Conclusion

In this paper we have described a study of the readability of the environmental policy statements of the IT companies in the Greenfactor sustainability rankings. We sought to answer the question of whether or not these environmental policy statements were in fact "readable" or not. Our conclusion is that the environmental policy statements, generally speaking, are not readable at average comprehension levels. In some cases, the environmental policy statements included in this study required almost unrealistically high education and reading skill for comprehension.

If the target audience of the policy statements has average or lower reading skills, we argue that the environmental policy statements will not be understandable and therefore useful to the stakeholder groups they are intended for. Even where target audiences are more educated and sophisticated, less readable environmental policy statements will be less likely to interest, engage and motivate these stakeholders.

Some of the most successful popular writers of our time, such as John Grisham and Stephen King, write at a Flesch-Kincaid grade level of 7. Laws in many parts of the world require that medical and safety information be written at a Flesch-Kincaid grade level of 5 (Doak, Doak and Root, 1996). As the cultural historian Jacques Barzun said, "Simple English is no person's native tongue" (see http://www.the-rathouse.com/JacquesBarzun.html).
Those who write the environmental policy statements of IT firms would do well to remember that writing for readers who may not be as sophisticated or educated as the author can be difficult, and takes of careful thought and practice.

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Exhibit 1: ANOVAs – Flesch Kincaid Score and Average Index By Tercile

Oneway Analysis of Flesch Kincaid Reading Ease By Tercile
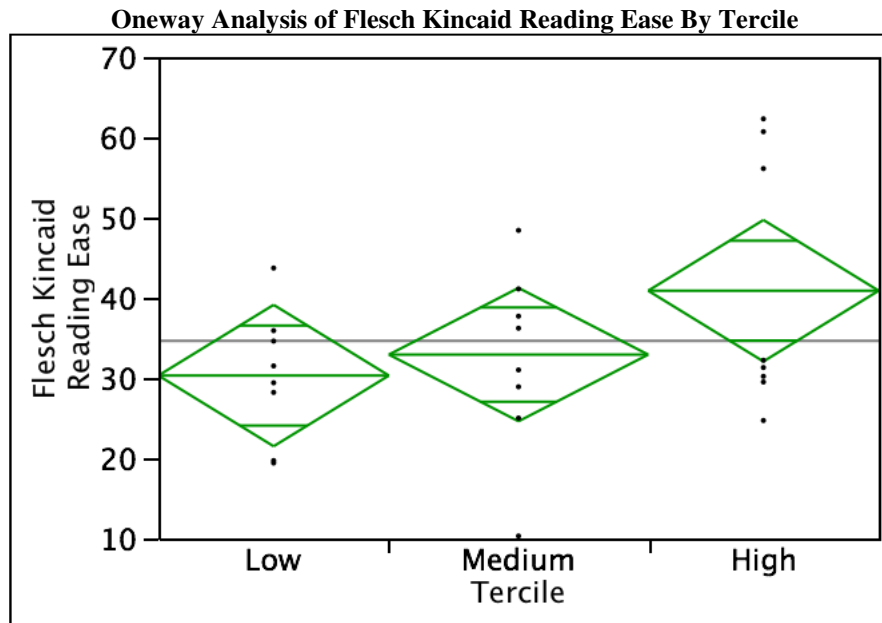
Oneway Anova: Summary of Fit

Rsquare	0.133205
Adj Rsquare	0.054406

Analysis of Variance

Source	DF	Sum of Squares	Mean Square	F Ratio	Prob > F
Tercile	2	488.5817	244.291	1.6904	0.2075
Error	22	3179.3039	144.514		
C. Total	24	3667.8856			

Means for Oneway Anova

Level	Number	Mean	Std Error	Lower 95%	Upper 95%
Low	8	30.3000	4.2502	21.486	39.114
Medium	9	32.9111	4.0071	24.601	41.221
High	8	40.8750	4.2502	32.061	49.689

Oneway Analysis of Average Index By Tercile
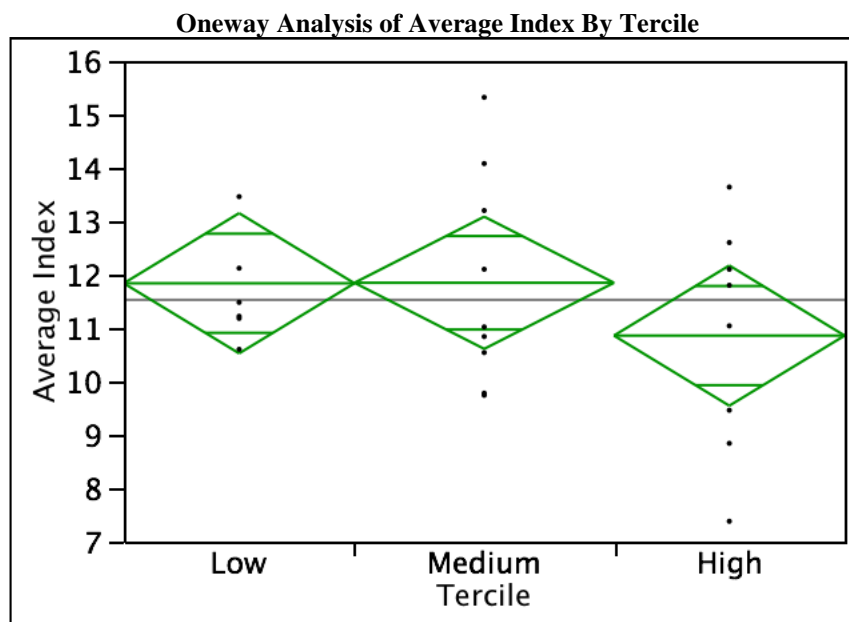
Oneway Anova: Summary of Fit

Rsquare	0.069562
Adj Rsquare	-0.01502

Analysis of Variance

Source	DF	Sum of Squares	Mean Square	F Ratio	Prob > F
Tercile	2	5.276804	2.63840	0.8224	0.4524
Error	22	70.580700	3.20821		
C. Total	24	75.857504			

Means for Oneway Anova

Level	Number	Mean	Std Error	Lower 95%	Upper 95%
Low	8	11.8375	0.63327	10.524	13.151
Medium	9	11.8467	0.59705	10.608	13.085
High	8	10.8575	0.63327	9.544	12.171

Appendix 1
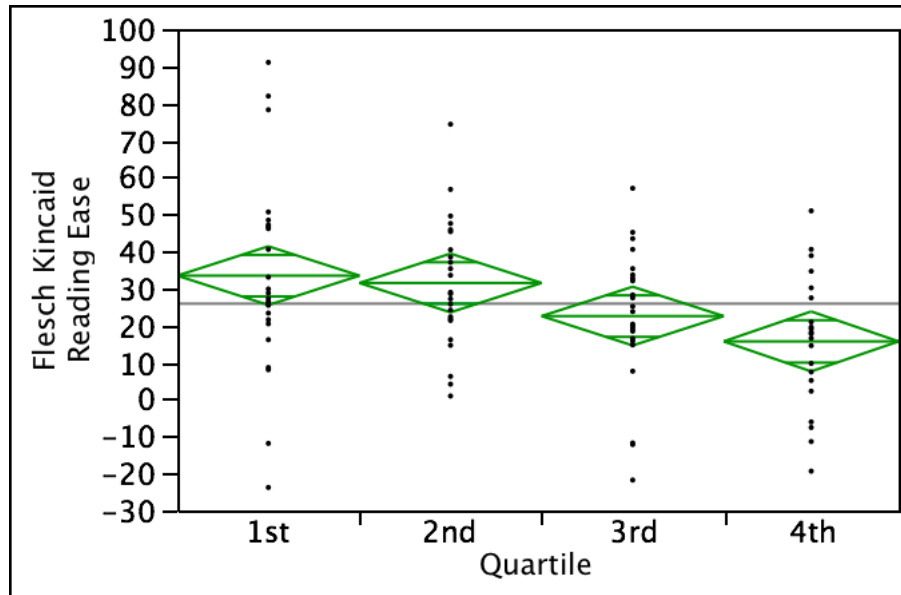
Figure 1. Oneway Analysis of Flesch Kincaid Reading Ease By Quartile

Table 2. Oneway Anova: Summary of Fit

Rsquare	0.116244
Adj Rsquare	0.088336
Root Mean Square Error	19.97822
Mean of Response	25.83737
Observations (or Sum Wgts)	99

Table 3. Analysis of Variance

Source	DF	Sum of Squares	Mean Square	F Ratio	Prob > F
Quartile	3	4987.422	1662.47	4.1653	0.0081*
Error	95	37917.270	399.13		
C. Total	98	42904.692			

Table 4. Means for Oneway Anova

Level	Number	Mean	Std Error	Lower 95%	Upper 95%
1st	25	33.4000	3.9956	25.468	41.332
2nd	25	31.4240	3.9956	23.492	39.356
3rd	25	22.4760	3.9956	14.544	30.408
4th	24	15.6417	4.0780	7.546	23.738

BANK'S ORGANIZATIONAL FORM AND EFFECTIVENESS OF THE RECOVERY PROCESS

Matteo Cotugno, Stefano Monferrà***

Abstract***

Recent empirical findings by Sapienza (2004), Micco and Panizza (2006) and Berger et al. (2008) have pointed to the correlation between bank ownership and lending behavior. We formulate and test hypotheses on the role played by the type of bank ownership (Independent and Dependent) and by the functional distance of the bank in influencing the Loss Given Default Rate (LGDR). This paper refers to data on the Italian Banking System. The empirical results are consistent with our hypotheses on the LGDR and control variables relation. We provide evidence that the LGDR is positively related to the distance between the bank headquarters and the borrower's location. Besides, the resulting data support the idea that Independent Banks present a low LGDR. Finally, our findings indicate that market power and LGDR are negatively related.

Keywords: Ownership; Subsidiary; Control; Functional distance; Loss given default.

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***Even if this paper is the result of the shared research of all the authors, paragraphs 1, 7 can be attributed to S. Monferrà – Project Coordinator – paragraphs 2-3-4-5-6 can be attributed to M. Cotugno.

Introduction

This paper purposes to analyze the effects of the organizational form of a bank on the effectiveness of the processes to recover defaulted loans. In particular, out of a sample of 2,697 Italian banks (2005-2008), it verifies empirically whether Independent Banks experience a lower Loss Given Default Rate (LGDR) than Dependent Banks do. Independent Banks are privately owned banks whose shares are in the hands of families, individual investors and institutional investors. A bank is acknowledged as being a Dependent (or Subsidiary) Bank when it has another bank as its controlling shareholder (in quite a few cases, it is a Bank Holding Company when banking groups are involved).

According to the principal-agent theory, Dependent Banks are subject to greater supervision by their principal than Independent Banks. Thanks to the appointment of most of the Board members of the Dependent Bank, the parent company is able to exercise a closer monitoring activity on the behavior of the management that, therefore, will find it hard to act against the interest of the principal. Empirical analyses show that Subsidiaries report a better performance than Independent Banks do, owing to a greater control by their majority shareholder (Crespì et al., 2004). Subsidiaries are characterized by a greater effectiveness of their internal-control mechanisms (CEO replacement, top management dismissal): assuming an inadequate performance, the CEO or top management turnover is higher in Dependent Bank than in Independent Banks (Barro and Barro, 1990; Blackwell et al., 1994).

As far as we know, there are no studies that investigate the relationship between the organizational form of a bank and the effectiveness of its credit recovery process. At any rate, this paper may be traced back to that field of literature that investigates the effects of the ownership structure on the types of relationship established with customers. In particular, foreign-owned banks tend to establish relationships that mostly privilege the transactional approach, in concomitance with an assessment of creditworthiness based on hard information (Sapienza, 2004; Micco and Panizza, 2006; Berger et al., 2008) .

This paper assumes that, being subject to the control of a parent company, Dependent Banks are farther removed from their customers from the socio-cultural perspective. In fact, from the organizational point of view, they feature two different hierarchical levels: the branch and the loan officer refer to the lending policies issued by the Dependent Bank, but the latter must conform to the provisions issued by the parent company. The need for the branch and the loan officer of the Dependent Bank to conform to policies issued by a decision-making center that is far removed from the organizational point of view determines an estrangement of the power center with respect to the socio-cultural context of the borrower. In the Italian credit market, this situation is particularly relevant since, over time, the process of consolidation of the banking system has resulted in a relocation of the decision-making centers, particularly to Northern Italy (Zazzaro, 2006).

Therefore, Dependent Banks are more likely to establish credit relationships based on transactional

banking, as their organizational complexity and socio-cultural distance make the establishment of a relationship based on private information quite difficult. Transactional lending is an intermediation model that fails to take soft information sufficiently into account, although the latter is likely to play a fundamental role for maximizing the recovery value, most of all when the borrower is facing a downturn. Therefore, Dependent Banks could experience higher LGDRs in consequence of relationships based on transactional lending, unlike Independent Banks that are closer to the territory and are characterized by a less complex organizational form.

This paper is organized as follows: section 2 describes the literature and research hypotheses; section 3 presents the sample and data used in the analysis; sections 4 and 5 illustrate the econometric model and the related variables; section 6 sets out the results of the empirical analysis; and section 7 presents the conclusions.

Literature review and research hypotheses

There is no specific reference in literature to such themes as the organizational form of banks and their credit recovery process. Nevertheless, this paper endeavors to refer back to three main research fields: the determinants of the recovery rate within the credit processes; the effect of the bank ownership structure on the type of relationship established with customers; and the functional distance and its effects on the loan portfolio quality.

According to the relevant literature, the Loss Given Default Rate is affected by three main factors: the type of relationship established with the customer; the credit contract specificities; the organizational complexity and effectiveness of the structure entrusted with the recovery (Mattarocci, Gibilaro, 2009). The lending technology affects the LGDR, since a strong and on-going relationship allows the bank to minimize the assessment mistakes, thanks to a reduction of the information asymmetries with the customer (Longhofer, Santos, 1999). The literature claims that leaner organizational forms, characterized by a limited socio-cultural distance between lender and borrower, facilitate the establishment of relationship lending (Nakamura 1993 and 1994; MacNulty 2001; Berger et al. 2002; Bonaccorsi di Patti et al. 2005). Thanks to customer proximity, a widespread presence in local markets often characterized by a lower competitive emphasis, frequent exchanges of information and a high social interaction between loan officer and customers served, small banks have a competitive advantage when managing firms with greater information opacity.

From the point of view of the borrower, part of the literature highlights a relationship between LGDR and relationship lending. In fact, given the strong relationship, it is unlikely for a borrower to fail to honor his debt, since it would be hard for him to find other banks willing to grant a loan on the same terms and conditions (Berger, Undell, 1995).

In the Italian context, Dependent Banks are characterized on average by a greater size (refer to table 3), a greater functional distance and a dual Parent Company-Dependent Bank-Branches hierarchical level. Therefore, a Dependent Bank would seem less likely to establish strong credit relationships than an Independent Bank, engendering the likely loss of effectiveness in the customer monitoring process. In fact, a close relationship allows handling the financial straits of a firm since the initial phases of its downturn, seeing to the restructuring of the debt before the assets value is fully destroyed (Cosci, Mattesini, 1997).

Besides, an improved knowledge of the customer allows structuring credit contracts getting to an adequate balance between borrower's requirements and bank's risk taking. From this point of view, thanks to a closer relationship, Independent Banks should succeed in improving their contract-related management, collecting greater guarantees, particularly in respect of the more risky type of customers. Finally, a leaner organizational form allows, perhaps, a more effective litigation management, resorting to out-of-Court procedures that are unquestionably faster and characterized by a higher recovery rate than judicial forms of bankruptcy management. These are the reasons why Independent Banks are believed to be characterized by an organizational form suitable for reducing the loan LGDR.

The relationship between bank ownership and bank lending technology has been analyzed into a number of studies (Sapienza, 2004; Micco and Panizza, 2006; Berger et al., 2008). In particular, considering a dataset of 97,760 credit relationships, Sapienza (2004) has shown that State-owned banks mostly favor large firms and firms located in depressed areas. Furthermore, she has shown the influence of electoral results and property affiliation on the interest rate applied by the bank. Berger et al. 2008 have analyzed the relationship between bank ownership (foreign, state-owned, private and domestic banks) and lending technology. The outcome of the analyses shows that foreign banks prefer to establish relationships with large-sized and relatively transparent companies. Besides, the enterprises that entertain relationships with foreign banks have a greater multiple banking propensity. On the other hand, the enterprises that entertain relationships with state-owned banks are generally smaller and more opaque from the point of view of information. Furthermore, this type of enterprises shows no preference for multiple banking relationships. The bank ownership structure affects also the bank risk taking level. Considering a sample of 38 bank holding companies over the 1978-1985 period, Sauders et al. 1990 have shown that stockholder-controlled banks exhibit a significantly higher risk taking behavior than managerially controlled banks.

The empirical studies at hand stress that an excessive cultural distance between ownership and borrower may induce a bank to establish transactional-type relationships, with a relative loss of soft information and effectiveness in the credit monitoring processes. The effect of the cultural and physical distance between parent company and subsidiary is dealt with in literature with specific reference to its impact on performance.

A few studies show that the internal control mechanisms are more effective in Dependent Banks than in Independent Banks given that, assuming a poor

performance, the likelihood of a dismissal of the CEO or the top management is higher among the former. Moreover, as the physical and socio-cultural distance of a Subsidiary from its parent company increases, there is an intensification of the activities monitoring the operations of a Dependent Bank (Stottinger & Schlegelmilch, 1998). The concentration of the control powers in the hands of the parent company entails the recourse to lending policies affected by the reference context of the latter. Such a situation increases the likelihood for Dependent Banks to establish primarily transactional relationships.

A proxy of the socio-cultural difference used in literature by Alessandrini et al. 2005 is functional distance (i.e., kilometric distance between headquarters and branches), which would seem to play a fundamental role on the type of relationships established between bank and customer. The presence of soft information and the closeness of the loan officer to the customer facilitate the bank in both the lending and the loan monitoring phases, as well in the credit recovery process. There are empirical evidences that show the impact of functional distance on the access to credit on the part of the enterprises (Alessandrini et al., 2009; Degryse et al., 2007) and on the probability of default of bank loans (Jiménez and Saurina, 2004; Cotugno et al., 2010), while the studies testing the relation with the Loss Given Default are still few (Mattarocci and Gibilaro, 2009).

The Italian context has progressively witnessed the increase in the functional distance and the relocation of the main decision-making centers to Northern Italy, with a subsequent divergence between territorial needs and lending policies made at a central level in geographical areas with a different socio-cultural level (Zazzaro, 2006). In fact, 27.5% of Italian banks are organized in the form of domestic subsidiaries of a banking group structured in pyramidal form with extremely complex control chains (Bank of Italy, 2010). The market share of the five leading Italian banking groups amounts to 52.5% (data reported in December 2009).

Furthermore, the functional distance is also a measure relative to the organizational complexity of a bank. The formulation of the bank lending policies is concentrated in the bank headquarters and the decision-sharing processes within the organizations are often complex and produce a number of diseconomies. While the local loan officer accumulates over time a specific knowledge of the local economy, he needs to invest time and resources to codify and transmit within the organization the information that is likely to affect the top management decisions. In Dependent Banks, the physical distance that separates the local loan officer from the parent company headquarters is particularly great and the lending policies are not always affected by the feedback from branch personnel. While the negative effects of an excessive increase in the functional distance can be toned down by delegation mechanisms, the relevant literature points to the potential diseconomies and inefficiencies of such processes (Alessandrini et al., 2009). The increase in the functional distance and the relative difficulty in codifying the soft information within the organization increase the likelihood for complex organizations to

establish relationships based on hard information with persons characterized by a lower opacity of information.

As far as we know, the literature produced up to now has failed to consider the relation existing between the organizational form and the functional distance of a bank and its credit recovery capabilities. In particular, the organizational form considered in this paper is the distinction between Dependent Banks and Independent Banks.

Based on these statements of facts, two hypotheses can be made, namely:

Hp1: the Loss Given Default Rate is positively correlated with the functional distance between headquarters and branches;

Hp2: the Loss Given Default Rate depends on the organizational form of the bank (Dependent Bank versus Independent Bank) and the joint effect of functional distance and bank ownership.

Sample and data

The sample used for the analysis is made up of Italian banks surveyed by the ABI Banking Data, in the four years 2005-2008; altogether, it comprises 2,697 observations (broken down into 684 banks in 2008, 689 in 2007, 672 in 2006 and 652 in 2005).

The representativeness of the sample over the four-year period is on average equal to 84.9% of the Italian banking system (the annual percentage is 85.5% in 2008, 84.9% in 2007 and 86.25% in 2006, 83.2% in 2005). The accounting data relating to the financial statements posted by the individual banks was drawn from the ABI Banking Data.

The source of the data on the geographical location of the bank headquarters and branches is the Bank of Italy; this consists of a dataset of 150,407 branches (46,346 branches in 2008, 38,045 in 2007 and 33,486 in 2006, 32,530 in 2005), which also takes account of the effective opening period of a branch on the market during the observed years, and thus also valorizes the case of open/closed branches or those sold to other institutions[1]. The source of the data on the provincial distribution of the branches is also the Bank of Italy, while the macroeconomic data was drawn from the National Institute of Statistics (ISTAT). The outliers present in the database were treated with the Winsoring technique, considering 1 percentile on both tails of the distribution sample.

Variables

In order to assess the LGDR, a proxy was constructed on the basis on the supervisory statistical return flow (Sironi, Zazzara, 2008; Mattarocci, Gibilaro, 2009). The characteristics of the data collected and processed by ABI Banking Data have enabled an estimate of the LGD as the ratio of the amount of bad debts that become worthless

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[1] In view of the cases of the sale of branches to other institutions during the course of the year, the number of branches of the sample does not coincide with the data reported in the Bank of Italy's Annual Report Glossary.

(the LGD entailed by the occurrence of a default) to the amount of loans that become distressed in the previous period. In formula:

LGDt = (DLWOt/ DLt-1)

where:

LGDt = Estimated value of the LGD;

DLWOt = Amount of distressed loans written off;

DLt = Amount of distressed loans.

The set of variables adopted in the model can be grouped and distinguished based on the homogeneity of the analysis profile investigated in the four following macro-classes: relationship lending; banking business structure, macroeconomics and local market competition. The analytical description of each variable is illustrated in Table 1.

Table 1: Definition of variables

Variables	Abbrev.	Measure
Dependent Variable		
Loss Given Default $_t$	LGD	Distressed loans written off $_t$/ Distressed loans$_{t-1}$
Ownership and functional structure		
F-Distance $_t$	DIST	Natural logarithm of sum of Distance between ZIP Code of Headquarter of bank and ZIP Code of branches
	OWN	Dummy equal 1 if the bank is controlled and 0 if the bank is independent
Ownership		
	AVGDIST	Sum of Distance between ZIP Code of Headquarter of bank and ZIP Code of branches/Branches
Average Distance		
Bank size $_t$	TA	Ln(Total Assets $_t$)
Banking business structure		
Collateral $_t$	COLL	Collateralized loans$_t$/Gross Loans$_t$
ROA $_t$	ROA	Before Tax Profit $_t$/Total Assets $_t$
Capital Ratio $_t$	CR	Equity $_t$/Total Assets $_t$
Specialization $_t$	SPEC	Loans $_t$/Total Assets $_t$
Macroeconomics and Local Market competition		
Herfindahl-Hirschman Index $_t$	HHI	Index of concentration of branches in the bank's provinces of relevance
Market Power $_t$	MP	
Δ GDP $_t$	Δ GDP $_t$	GDP variation

Notes: Net loans = customer loans; Gross loans = customer loans + individual loan loss allowance + portfolio loan loss allowance;

As concerns the dependent variable (loss given default rate) it must be highlight that the general banking data base (i.e. Bankscope) does not allow the determination of this variable. This is an important original aspect of this work. Previous studies, in fact, provide a more general analysis of the problem of loan portfolio quality, based on the variables relating to non-performing loans. There are very few empirical analyses based on LGD data (Mattarocci, Gibilaro, 2009; Dermine, Neto de Carvalho, 2006).

Regarding the regressors, the first variable considered is the ownership, which is a dummy that takes the value 1 when the bank is controlled and 0 otherwise. According to the Italian Banking Act a bank is defined subsidiary when an entity has a majority of the voting power of ordinary shareholders' meeting or has the power

to appoint the majority of the members of Board of Directors.

In previous studies (Alessandrini et al. 2009; Degryse and Ongena, 2005) the functional distance was adopted as a measure of geographical and cultural distance between banking decision-making centre and local banking system. It was calculated by considering the distance between the postal code (ZIP CODE) of the bank's head office and the postal code of the municipalities in which the various branches are located (excluding the bank's liaison offices). Thereafter, each distance thus obtained, and pertaining to each Italian Banks Association code (ABI code), was weighted for the number of months each branch was open during the year. Analytically, the formula used in the calculation is the following:

$$\text{Distance}_i = \ln\left(1 + \sum_{j=1}^{k}\left(\left|\text{ZIP CODE HeadQuarters}_i - \text{ZIP CODE Branch}_{ij}\right| \times \frac{m_{ij}}{12}\right)\right)$$

where, for each year of observation, with reference to the i-th bank the sum of the distances between the head office's postal code and the j-th branch's postal code is

obtained, weighted by the branch's months of opening (m = 1, 2, 3,...., 12).

As organizational variable is used in the regression the average distance defined by the following formula:

Ascolta

Trascrizione fonetica

Dizionario - Visualizza dizionario dettagliato
1. sostantivo
    1. la
2. abbreviazione

1. A
3. pronome
    1. it
    2. her
    3. you
4. articolo
    1. the
    2. a
    3. an

$$\text{Distance Average}_i = \sum_{j=1}^{k} \left(\left| \text{ZIP CODE HeadQuarters}_i - \text{ZIP CODE Branch}_{ij} \right| \times \frac{m_{ij}}{12} \right) \Big/ \text{Total Branches}_i$$

This variable is not used in previous analysis but in our opinion using only the functional distance may come to the wrong conclusions. For example, a bank that has many branches in a narrow geographical area could have a higher functional distance than another that has a few branches but very far from the headquarter. For this reason, the variable Average Distance is introduced that quantifies the average distance expressed in kilometers between the headquarter and the different branches.

The first control variable adopted in the model is the level of collateralized loans. Basel 2 identifies as the key risk mitigation the collaterals obtained by the bank. Empirical studies (Jiménez and Saurina, 2004) verify the correlation between the amount of collaterals and the bank's functional distance (distance between the bank's head office and the customer). The results show how banks featuring a shorter functional distance are more likely to acquire guarantees.

A further control variable considered is the Return On Assets (ROA) of the previous year. Recent empirical studies (Godlewski 2004; Boudriga et al. 2009) highlighted a negative relation between the bank's lagged ROA and the level of risk taking (non-performing loans relied). In particular, the authors maintain that a bank with satisfactory levels of profitability has a low propensity to assume risky choices that may penalize the profitability attained. We included in the regression the previous year's ROA to prevent model endogeneity problems. It is very likely, in fact, that the higher the LGDR the lower the ROA, as a result of the greater credit adjustments.

A number of studies confirm that the bank's level of risk-taking, namely the amount of NPLs that it generates, depends on its Capital Ratio. The option-pricing model enables the demonstration of how a bank, in the absence of a capital requirement, tends towards excessive leverage and portfolio risk in order to maximize its shareholder value at the expense of deposit insurance (Benston et al. 1986; Furlong and Keeley 1989; Keeley and Ferlong 1990). The bank's capital ratio/risk-taking relation should be reversed: a higher level of capitalization reduces the probability that the bank yields to opportunistic behavior in its risk-taking decisions and adopts robust and balanced risk management models to reconcile the profitability expectations of shareholders and the depositor interests. In fact, the empirical results produced by Salas and Saurina (2002) on a sample of

Spanish banks demonstrate that with the increase of the capital ratio, the amount of outstanding problem loans decreases. The theoretical foundations of the appropriateness of imposing minimum capitalization constraints on banks meet these conditions: a higher capital entails higher losses for the banks' shareholders in case of default, and hence lower risk-taking incentives (Repullo 2002). We have included the previous year's Capital Ratio in the model to prevent any model endogeneity problems. Based on the supervisory regulations in fact (BIS, 2006), it is likely that the LGDR may affect the bank's Capital Ratio level.

The final firm-specific variable considered in literature is the degree of specialization of the bank's lending activity. The literature on this subject is vast and spreads across specific comparable conditions, such as, for example, the limits of the universal banking model, the bank diversification decisions by business, the bank income structure and portfolio diversification. The choice of a specialized banking business competitive model allows the broker, on the one hand, to effectively accumulate economies of experience and, on the other, to losing the economies of scope related to the appropriateness of implementing alternative strategies of the related diversification (Johnson 1996; Rajan 1996; Santos 1998). In theoretical terms, diversification reduces the bank's level of risk-taking through a compensation of gains/losses mechanism, in relation to the overall product portfolio (Winton 1999). Excessive competitive pressure on the realization of profits may in fact lead the bank to take more risks with the less accurate and efficient selection of investment projects worth funding. Therefore, a bank with a large share of non-interest revenue would be more selective and thus record fewer Non-Performing Loans. However, this issue is controversial. Hu et al. (2004), in fact, using a sample of 40 Taiwanese banks, demonstrate a direct correlation between revenue diversification and NPLs during the 1996-1999 period. Micco et al. (2004), using a sample of banks in developing countries, noted a significant and positive relationship between the presence of Non-Operating Revenues and Problem Loans in the 1995-2002 period.

The Herfindahl-Hirschman Index (HHI) represents the variable linked to the level of competition on local markets. The HHI is calculated as an average of the bank's concentration indexes in the provinces where it is

present; in particular, in the absence of data on the intermediary's market share, an approximation based on

$$HHI_i = \sum_{j=1}^{k} \frac{\left(\dfrac{Bank\ branches_{ij}}{Total\ system\ branches_j} \times 100 \right)^2}{k}$$

where the ratio between the i-th bank's branches in the j-th province and the total branches present in the same province represents the market share on the bank's provincial level.

The inclusion of this variable is suggested by the wide literature that studies the impact of the competitive dynamics of markets on the quality of the loan portfolio of banks (for recent studies see Udell 2008; Jimez et al. 2010). Traditional theses associate greater risk-taking by the bank to a market with high competition (competition-fragility): the bank acting in a monopolistic or oligopolistic position, as competition grows, is driven to compensate the drop of margins by progressively increasing the level of risk taken, to avoid a progressive loss of market share; this idea appears to be supported by

the number of branches in the market (Coccorese 2008) was carried out. The formula used is the following:

both theoretical (Marcus 1984; Keeley 1990; Broecker 1990; Marquez 2002) and empirical studies (Demsetz, Saidenberg and Strahan 1996). The underlying logic links the reduction of market power to the decline of profitability and the consequent progressive shift towards the assumption of riskier positions. On this subject, however, recent empirical studies (Boyd, De Nicoló and Al Jalal 2006; De Nicoló, Loukoianova 2007) support the opposite view (competition-stability).

The model also includes a variable representing the bank's Market Power. This variabile is calculated as the presence of branches of the bank not in the provincial capitals (i.e. municipalities) like Bongini et al. 2007. The calculation formula used is as follows:

$$Market\ Power_i = \sum_{j=1}^{k} \frac{\left(\dfrac{Branches\ in\ municipalities_{ij}}{Total\ branches\ in\ provinces_{ij}} \right)}{k}$$

where j varies with the provinces in which the i-th bank has a local presence and can reach the number of provinces equal to k, the maximum of 103 (or local presence of the bank in all Italian provinces). Il Market Power, unlike the HHI, better defines the effect of the local distribution of the branches. A bank can feature a low HHI (calculated at the provincial level), but find itself in a substantially oligopolistic situation, because its branches are located in municipalities where competition is lowest. The banks with a considerable market power (i.e. most branches are located in municipalities) operate in oligopolistic conditions and find it more convenient to invest in soft information (Petersen, Rajan, 1994).

However, among macroeconomic variables, the most frequently used in literature is the economic growth rate (GDP). Altman et al. 2005 demonstrate the existence of a positive relationship between recovery rate and GDP, with reference to the corporate bond market. Similar results are shown in Caselli et al. 2008, based on a portfolio of 11,649 contracts concluded on the Italian loan market.

Econometric model

The research hypotheses formulated were tested by adopting a multivariate regression model (OLS) in the cross-section and time-series dimensions. It approximates the impact of the lending relationship approach on the recovery rate, also taking into account the possible effects

related to the specificity of the bank's business, the competitive dynamics of the local markets and the national macroeconomic trend (control variables).

The formulation of the OLS model is the following:

$LGDR_{it} = \beta_0 + \beta_1 \Delta GDP_{it} + \beta_2\ \Delta GDP_{it-1} + \beta_3\ DIST_{it} + \beta_4\ OWN_{it} + \beta_5\ AVGDIST_{it} + \beta_6\ DIST_{it}* OWN_{it} + \beta_7\ TA_{it} + \beta_8\ ROA_{it-1} + \beta_9\ CR_{it-1} + \beta_{10}SPEC_{it} + \beta_{11}\ HHI_{it} + \beta_{12}\ MP_{it} + \varepsilon_{it} + u_i$

where i identifies the individual bank belonging to the sample (i = 1, 2, 3,..., 2,697); $LGDR_{it}$ is the i-nth bank's Loss Given Default Rate; t expresses the time variable (t = 2005, 2007 and 2008); β_1, β_2,… β_{12} are the parameters to be estimated. Also indicated in the model are the constant (β_0) and the error terms (ε_{it}; u_t). The panel regression approach adopted is of the random effect type; this hypothesis is subject to verification with the Hausman test shown in Table 4.

Results

The descriptive statistics of the sample are shown in Tables 2, 3 and 4 respectively. The correlations between the variables that have been adopted are shown in Table 4.

From an analysis of the descriptive statistics, it turns out that the LGDR of Dependent Banks is, on average, higher than that of Independent Banks (0.177 and 0.095, respectively). Such difference proves significant with a 1% confidence level. The average distance of Dependent

Banks proves greater than that of Independent Banks, just as their functional distance. An analysis of the means test proves that Independent Banks are more prone to secure guarantees than Dependent Banks; in fact, the former have nearly 69% of their lending covered by (real or personal) guarantees while the Dependent Banks' share of guaranteed loans ranges around 58%.

A joint evaluation of these features suggests that Dependent Banks are more inclined to establish transactional relationships, as they are characterized by a greater organizational complexity. The lower recourse to guarantees presupposes a difficulty in the monitoring activity and a lower amount of private information in the creditworthiness assessment processes. Independent

Banks, with a 1% significance level, are on average more capitalized than Dependent Banks; according to the theory, this outcome should suggest a lower risk taking by Independent Banks (Benston et al., 1986; Keeley and Ferlong, 1990). As regards the competitive arrangements, unlike Independent Banks, Dependent Banks are located in provinces characterized by a higher level of concentration. In any event, in their choice of location between municipalities and provincial capitals, Dependent Banks are located for the most part in provincial capitals, unlike Independent Banks that are mostly located in municipalities, working in contexts that are on the average less competitive.

Table 2: Univariate descriptive statistics, Italian Banks – Whole Sample (2005-2008).

Variables	N. Obs	Mean	SD	Min	Median	Max
Dependent Variable						
Loss Given Default Rate	1 808	0.109	0.158	0.000	0.047	0.837
Organizational Variable						
F-Distance	2 697	4.833	2.806	0.000	4.735	13.576
Average Distance	2 697	38.528	67.100	0.000	13.610	261.380
Control	2 697	0.183	0.387	0.000	0.000	1.000
Banking business structure variables						
Specialization	2 697	0.639	0.197	0.003	0.689	0.947
Collaterals	2 697	0.674	0.216	0.000	0.729	0.926
Capital Ratio	2 697	0.122	0.070	0.026	0.107	0.554
ROA	2 697	0.009	0.010	-0.042	0.010	0.039
Local competition and macroeconomics						
HHI	2 697	908.957	281.609	355.107	879.487	1992.649
Market Power	2 697	0.742	0.335	0.000	0.875	1.000
Δ GDP	2 697	0.008	0.012	-0.010	0.016	0.020

All variables are winsorized at the bottom and top 1% levels.

Table 3: T-test Indipendent Banks versus Controlled Banks

	Independent Banks			Dependent Banks			Mean t-test	
Variables	N. Obs	Mean (μ_1)	SD	N. Obs	Mean (μ_2)	SD	t-value	$H_0 = \mu_1 - \mu_2 = 0$
Dependent Variable								$H_1 = \mu_1 - \mu_2 < > 0$
Loss Given Default	1,552	0.095	0.142	330	0.177	0.207	-8.761	Reject H_0
Organizational Variable								
F-Distance	1,671	4.385	2.469	374	6.995	3.181	-17.45	Reject H_0
Average Distance	1,671	37.803	77.405	374	118.410	132.747	-11.294	Reject H_0
Banking business structure variables								
Specialization	1,671	0.645	0.178	374	0.653	0.267	0.7628	Non Reject H_0
Collaterals	1,671	0.694	0.204	374	0.584	0.246	9.0028	Reject H_0
Capital Ratio	1,671	0.128	0.065	374	0.099	0.078	7.3268	Reject H_0
ROA	1,671	0.009	0.010	374	0.009	0.012	0.4365	Non Reject H_0
Local competition and macroeconomics								
HHI	1,671	892.642	274.545	374	982.265	301.030	-6.0602	Reject H_0
Market Power	1,671	0.798	0.307	374	0.4919	0.0175	17.0073	Reject H_0

All variables are winsorized at the bottom and top 1% levels.

An analysis of the correlations proposed in Table 4 points to a significant and positive relationship between

LGDR, functional distance and average distance. On the other hand, it points to a negative relationship between LGDR, market power and level of collaterals. To verify in more forceful manner the effects of the organizational form on the LGDR, Table 5 shows the results of the proposed econometric model. To avoid problems of multicollinearity, four econometric models have been built by selecting in respect of each one of them the regressors characterized by a lesser correlation.

Table 4: Bivariate Descriptive Statistic (2005-2008). Correlation between some variables, case wise.

		1	2	3	4	5	6	7	8	9	10	11
1	LGDR	1.000										
2	F-Distance	0.156*	1.000									
		(0.000)										
3	Average Distance	0.127*	**0.642***	1.000								
		(0.000)	(0.000)									
4	Specialization	0.038*	0.221*	-0.032	1.000							
		(0.098)	(0.000)	(0.169)								
5	Collaterals	-0.141*	-0.132*	-0.303*	0.097*	1.000						
		(0.000)	(0.000)	(0.000)	(0.000)							
6	Capital Ratio	-0.075*	-0.393*	-0.231*	-0.157*	0.117*	1.000					
		(0.001)	(0.000)	(0.000)	(0.000)	(0.000)						
7	ROA	-0.003	0.064*	-0.094*	0.011	0.150*	0.255*	1.000				
		(0.884)	(0.005)	(0.000)	(0.624)	(0.000)	(0.000)					
8	Total Assets	0.217*	**0.773***	**0.596***	0.102*	-0.337*	-0.375*	-0.003	1.000			
		(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.886)				
9	HHI	-0.000	0.226*	0.129*	-0.121*	-0.064*	-0.103*	0.019	0.100*	1.000		
		(0.994)	(0.000)	(0.000)	(0.000)	(0.005)	(0.000)	(0.409)	(0.000)			
10	Market Power	-0.160*	-0.216*	**-0.470***	0.123*	0.376*	0.189*	0.243*	**-0.465***	-0.081*	1.000	
		(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)		
11	GDP	0.035	0.006	0.012	-0.028	-0.021	0.027	0.212*	-0.020	-0.062*	0.032	1.000
		(0.126)	(0.809)	(0.611)	(0.228)	(0.372)	(0.235)	(0.000)	(0.396)	(0.007)	(0.167)	

* Significance level at least 10%
In bold character: variables that have high correlation and have been put in different regression model.

The results of the regressions are shown in Table 5 and follow a random effect approach, in line with the Hausman test results. The resulting models are statistically significant with an R-square varying from 6.7% to 5.6%.

Table 5: Dependent variable Loss Given Default Rate; Cross section and time series regression with Random Effect

	Model 1	Model 2	Model 3	Model 4
Δ GDP$_t$	-0.491**	-0.480**	0.450*	0.474**
	(2.09)	(2.04)	(1.92)	(2.02)
Δ GDP$_{t-1}$	-1.276**	-1.303**	1.299**	1.303**
	(2.29)	(2.34)	(2.33)	(2.34)
Ownership	0.0474***	0.0515***	0.0636***	
	(3.72)	(4.04)	(5.28)	
Specialization	0.0162	0.0194	0.0251	0.0279
	(0.63)	(0.72)	(0.96)	(1.06)
Collaterals	-0.0477**	-0.0538**	-0.0626***	-0.0582***
	(-2.15)	(-2.42)	(-2.85)	(-2.61)
Capital Ratio$_{t-1}$	-0.0431	-0.0883	-0.136	-0.133

	(-0.50)	(-1.01)	(-1.63)	(-1.59)
HHI	-0.0000178	-0.0000252	-0.0000182	-0.0000199
	(-1.12)	(-1.55)	(-1.14)	(-1.23)
ROA$_{t-1}$	0.399	0.702	0.748	0.774
	(0.72)	(1.24)	(1.36)	(1.39)
Total Assets	0.0131***			
	(4.16)			
Distance		0.00441**		
		(2.24)		
Market Power		-0.0394**		-0.0521***
		(-2.40)		(-3.27)
Average Distance			0.0000986*	
			(1.94)	
Ownership*Distance				0.00723***
				(4.69)
Constant	-0.0551	0.135***	0.122***	0.164***
	(-1.00)	(4.13)	(3.81)	(5.13)
N. Obs	1808	1808	1808	1808
Groups	666	666	666	666
R-square Overall	0.0670	0.0627	0.0563	0.0562
Chi 2	89.27***	84.72***	74.79***	78.59***
Hausman test	8.28	8.82	10.07	7.22

Heteroskedasticity-robust t-stat is in brackets. The symbol *** indicates a significance level of 1% or less; ** between 1 and 5%; * between 5 and 10%.

With reference to Hp1, the regression shows that banks with a greater functional distance report a higher LGDR level. This result is consistent with the expectations and with the findings in literature (Alessandrini et al., 2009; Mattarocci and Gibilaro, 2009). In particular, the substantial difficulty in transmitting soft-type information within the organization conditions the type of relationship established with customers (Degryse and Ongena, 2005; Alessandrini et al., 2009). Besides, the monitoring activity fails to report with due timeliness an initial phase of crisis of an enterprise. The literature stresses the significance of timeliness in the recovery process and in the ability of a bank to maintain a positive assets value (Cosci and Mattesini, 1997). The headquarter-branches distance has been calculated taking also the Average Distance into account, with a view to considering a different geographical distribution of the branches. Although a 10% significance is reported, even the Average Distance proves to affect the LGDR with a sign consistent with expectations. Therefore, the physical distance plays a relevant role in the recovery processes, irrespective of the calculation techniques.

With reference to Hp2, the regressions show that the organizational form is an important element in determining the bank LGDR. In all the models, the dummy is statistically significant with particularly high t-stat values. Consistently with expectations, Dependent Banks report a higher LGDR than Independent Banks. Hence, the organizational form affects the bank recovery process and, in particular, Dependent Banks seem to establish relationships mostly based on a transactional approach, as they meet with problems in the collection of private information. The monitoring process only allows a delayed detection of a customer's straits, and the lending policies formulated by the parent company are far-removed from the socio-economic fabric of the borrower. This is the reason why Dependent Banks report a higher LGDR than Independent Banks.

The joint Ownership x Functional Distance effect is empirically tested in Model 4. This variable proves statistically significant with a sign of the coefficient that is consistent with expectations. Ownership and functional distance jointly affect the bank's LGDR.

Insofar as the control variables are concerned, there is a positive relation between LGDR and GDP, consistently with the preceding literature (Caselli et al., 2008). The size of the bank, measured by the logarithm of the total balance sheet assets, proves statistically significant and with sign consistent with the theory (Mattarocci and Gibilaro, 2009). As shown even in Table 4, the bank size is highly correlated with the functional distance (0.77); therefore, this result seems to confirm the datum that the organizational complexity conditions both the type of relationship and the processing of information.

The Market Power in Model 2 is significant at a 1%

level with a negative coefficient. The banks that work for the most part in municipalities report a lower LGDR than banks that work in the provinces. This result witnesses the significance of soft information in a credit relationship since in small local communities, characterized by a higher level of concentration of the banking market, there is a lower level of information asymmetry. The other control variables used in the model (Capital Ratiot-1, ROAt-1, HHI, Specialization) do not prove statistically significant and, therefore, it is reasonable to affirm that there is no significant relation between them and the LGDR.

Conclusions

This paper purposes to analyze the effects of the organizational form of banks on their recovery rate. In particular, with reference to the possibility of establishing relationship-driven lines of credit, the relevant literature stresses the relevance of bank ownership, particularly with reference to foreign-owned banks. This paper analyzes the difference between Dependent Banks and Independents Banks in terms of effectiveness of the recovery process. The outcome of the analysis shows that Dependent Banks report a higher LGDR level. This finding could also be explained by the estrangement of the parent company with respect to the socio-cultural context of the borrower.

It seems that the organization as a group fails to enhance in an adequate manner the soft information in credit relationships, slowing down the recovery process. Furthermore, it turns out that Dependent Banks collect on average lower collaterals that Independent Banks. The functional distance plays a decisive role with respect to the LGDR, and this is also confirmed when calculating the average distance. So far, the delegation-centralization mechanisms do not seem efficient enough in complex bank structures and the Dependent Bank model points to a structural weakness in the recovery process. A joint ownership-functional distance analysis confirms the hypothesis that the physical distance makes a greater impact when the organizational form provides for a dual Branches-Dependent Banks-Parent Company hierarchical level.

The strong territorial entrenchment of Independent Banks is witnessed by their greater market power, with positive repercussions on the LGDR. In the competitive choices relative to the geographical location of branches, it should be borne in mind that their entrenchment in province capital entails a lower recovery rate with respect to their presence in municipalities.

Due emphasis is laid on the fact that the organizational form and ownership of a bank is not only relevant with reference to comparisons among different nations (as reported in the literature on foreign ownership). In the event that there are considerable socio-cultural disparities within the same country, the bank organizational form is likely to play a decisive role on the bank lending behavior and, therefore, on the effectiveness of the credit recovery process.

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IDIOSYNCRATIC VOLATILITY AS AN EXPLANATION OF THE SMALL FIRM EFFECT: AUSTRALIAN EVIDENCE

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Abstract

In the context of Australian stockmarkets, we examine how a company's size and stock idiosyncratic volatility relate to return performance. The paper's main conclusions may be summarized as follows. The stocks of the smallest firms markedly outperform the largest capitalized stocks, and for such small capitalized stocks, those with greater idiosyncratic volatility have markedly superior returns. It appears that the relationship of higher returns with higher idiosyncratic volatility is consistent with the mathematics of idiosyncratic volatility. In which case, the small size effect may also be interpreted as the mathematical outcome of idiosyncratic volatility. The paper further examines the condition on which the higher returns reported for either small firm size or high idiosyncratic volatility are likely to be wealth-forming. Finally, we observe that the high performances of the stocks of the smallest firms are likely irrelevant to the class of firms that are of interest to the institutional investor.

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Introduction

In separating the influences of market capitalization and idiosyncratic volatility in U.S. markets, Spiegel and Wang (2005) find that companies with high idiosyncratic volatility tend to be of small firm size, and, since stock returns are decreasing with firm size, stock returns are also increasing with idiosyncratic volatility. They conclude that while both these variables appear to bear a systematic relationship with a stock's returns, the relationship of returns with idiosyncratic volatility subsumes the relationship with firm size. Malkiel and Xu (1997, 2006) have also highlighted the intriguing possibility that the small firm size effect might actually be an idiosyncratic volatility effect. Against this, however, authors such as Ang et al. (2006, 2008) have reported that they find a negative relationship between returns and idiosyncratic volatility.

In this paper, we examine the relationship of stock returns with firm size and idiosyncratic volatility in the context of the Australian (ASX) stockmarket. The Australian stockmarket by virtue of its distinctive characteristics provides opportunities for realistic robustness tests in regard to asset pricing in other markets. The market is much smaller than U.S. markets (the 200th company is capitalized at approximately $150 US million at the time of writing) as well as being highly

concentrated with around 2,000 listed companies, which are confined to a relatively small number of industries, most specifically, financials and materials dominated by mining and resource stocks (Ghrghori, Chan and Faff, 2006, provide a more extended overview of the Australian market's distinctive characteristics).

Our paper's main conclusions may be summarized as follows. Portfolios of the smallest capitalized stocks markedly outperform portfolios of the largest capitalized stocks, and for such small capitalized stocks, portfolios with greater idiosyncratic volatility generate markedly superior returns on an equally-weighted basis. Notwithstanding, for very large companies, higher idiosyncratic volatilities appear to identify decidedly lower returns. Our findings thereby provide a link with prior findings in the literature that have identified a more pronounced negative relationship of returns with idiosyncratic volatility for large companies (Ang et al., 2008; Bali and Cakici, 2008), as well as with reports in the literature of both a positive and a negative association between returns and idiosyncratic volatility (as discussed below). We show additionally how the high returns identified with high idiosyncratic volatility might be attributable to the mathematics of averaging returns that are distributed with a degree of log-symmetry. In which case, we are observing "returns created by volatility." We observe, further, that when the idiosyncratic volatility

is the outcome of "fundamental" growth and decline, the returns created by idiosyncratic volatility are wealth-creating (as advocated by Dempsey, 2002); whereas when the idiosyncratic volatility is due to "noise" the process is not of itself wealth-creating (as advocated by Arnott, Hsu and Moore, 2005). Our observations thereby allow for an interpretation of Arnott et al.'s principle of "fundamental indexation" in terms of idiosyncratic volatility. Finally, we conclude that the higher returns for smaller firms – which are indeed dramatic at the lower end of firm size – are almost certainly irrelevant to the class of firms that are of interest to the institutional investor.

The portfolio analysis as adopted here calculates stock returns across compartmentalized ranges of firm size and idiosyncratic volatility. By sorting on portfolios the noise of individual stock returns created by nonsynchronous trading and measurement error is reduced (Vaihekoski, 2004). The portfolio approach is therefore simple and robust. It is the method advocated by the late Fischer Black (Black, 1993; Mehrling, 2005, see p. 112). Although it lacks statistical tests – as compared with, for example, the Fama and Macbeth (1973)/Fama and French (1992) method - Black's argument was that the method simulates the portfolios that investors might actually use, and rather than providing a "once-off" analysis, the method tends to give guidance as to where to look for the next most promising theoretical enhancements. And unlike linear regression tests, the portfolio method does not assume any specific functional form for the relations among the variables.

The rest of the paper is arranged as follows. Section 2 presents prior literature while Section 3 describes the data and the methodology employed in this paper. In section 4 we discuss the results and section 5 concludes the paper.

Background

With confirmation of the Fama and French three-factor model, a consideration of a company's market capitalization or firm size effect has become almost standard practice. Nevertheless, the evidence is not all one-sided. Banz (1981), for example, documents the size effect over a 45-year period for U.S. stocks and finds that while the effect is pronounced in the smallest firms there is no clear linear relationship between firm size and returns. Horowitz, Loughran and Savin (2000) conclude that the size effect is no longer prevalent in U.S. stocks. In the Australia market, Beedles, Dodd and Officer (1988) find that the size effect is prevalent and is robust to several methodological adjustments. They find evidence that transaction costs can explain a part of the size anomaly but that they do not appear to be the dominant factor. Other studies, however, find little or no evidence of the firm size effect in Australian markets. Brown, Kleidon and Marsh (1983) find that although the size anomaly exists, it is nevertheless not stable through time and that estimates of the size effect are subject to the historical time studied. Consistent with the findings of Banz in the U.S., they find that the relationship between firm size and returns is located in the smallest stocks.

Chan and Faff (2003) report a flat regression relationship between returns and market capitalization for Australian stocks, and Gaunt (2004) finds no clear evidence of the firm size effect in Australian markets.

Malkiel and Xu (1997) show a high negative correlation between a company's size and its idiosyncratic volatility and suggest that idiosyncratic risk might explain the size effect. They consider that idiosyncratic risk is rationally priced if portfolio managers must justify (to clients) the performance of individual stocks within their portfolios, while Malkiel and Xu (2006) provide a formal model consistent with idiosyncratic risk being priced when investors (either voluntarily or non-voluntarily) are incompletely diversified. Similar to the approach adopted in the preset paper, Malkiel and Xu (1997) divide stocks into portfolios based on their idiosyncratic volatility and report their average return over the period 1963-1994. The results show a clear trend for stocks with higher idiosyncratic risk to generate higher returns. Goyal and Santa-Clara (2003) also find that equally-weighted average stock volatility is positively related to the value-weighted market returns.

Ang, Hodrick, Xing and Zhang (AHXZ) (2006, 2008), however, dispute the validity of these results and report that stocks with higher idiosyncratic volatility (calculated on one month of daily data) in relation to the three-factor Fama and French (1993) model have decidedly lower equally-weighted returns. AHXZ (2006) report that for U.S. stocks, the average return differential between the lowest and highest quintile portfolios formed on one-month lagged idiosyncratic volatilities is about -1.06% per month for the period 1963-2000; while AHXZ (2008) present evidence that the negative relation between idiosyncratic volatility and average returns is strongly significant for each of their largest seven equity markets (Canada, France, Germany, Italy, Japan, the U.S., and the U.K.), and is also observed in the larger sample of 23 developed markets, averaging 1.31% per month between the highest and lowest quintiles formed on idiosyncratic volatility. They report also that the negative volatility effect is more pronounced for larger companies than it is for very small firms.

Similarly to AHXZ (2006, 2008), Bali and Cakici (2008) use within-month daily data to calculate idiosyncratic volatility in relation to the three-factor Fama-French (1993) model, and find no robust significant relation between idiosyncratic volatility and equally-weighted expected returns. However, the value-weighted average return differential between the lowest and highest idiosyncratic volatility portfolios is about – 0.93% per month and highly significant for the extended sample period of July 1963–December 2004. This result is very similar to the finding of AHXZ for equally-weighted returns (−1.06% per month) reported above. The pattern observed in their quintile portfolios is not monotonic however: average returns actually increase from quintile 1 (low idiosyncratic risk quintile) to quintile 3 and then average returns decline, so that quintile 5 experiences a substantial decrease in average returns. It is noteworthy that quintile 5 which contains 20% of stocks sorted by highest idiosyncratic volatility contains

only 2% of the market, while quintile 1 (which contains 20% of stocks sorted by lowest idiosyncratic volatility) contains 54% of the market. This is consistent with a strong negative correlation between the firm's market capitalization (size) and idiosyncratic volatility.

Malkiel and Xu (2006) suggest that the AHXZ (2006) findings may be due to an errors in the variables problem when fitting their model to the short data sample; while Huang, Liu, Rhee, and Zhang (2007) argue that AHXZ's results are driven by monthly stock return reversals. After controlling for the difference in the past-month returns, Huang et al. show that the negative relation between average return and the lagged idiosyncratic volatility disappears. Fu (2008) points to a similar conclusion. He shows that idiosyncratic risk varies substantially over time and suggests that idiosyncratic volatility calculated from a single month fails to identify the expectation of idiosyncratic volatility in the subsequent month. Using rolling monthly data, Fu provides in-sample estimates of the conditional idiosyncratic variance of stock returns based on an EGARCH model and finds a significantly positive relation between stock return and idiosyncratic volatility.

Following an approach similar to Fu's (2008) EGARCH method, Brockman and Schutte (2007) estimate conditional idiosyncratic volatility and confirm that the relation between stock return and idiosyncratic volatility is positive in international data. Similarly Spiegel and Wang (2006) and Eiling (2006) adopt the EGARCH models to estimate conditional idiosyncratic volatility. Both find a positive relation stock return and idiosyncratic volatility in U.S. data. Spiegel and Wang also report that idiosyncratic volatility dominates liquidity in explaining the cross-sectional variation of average returns.

Thus we note that a degree of controversy surrounds even the direction of any idiosyncratic volatility effect for stock returns. A possible solution to the impasse is that, on the one hand, stocks are priced with the expectation that in the long run idiosyncratic volatility is rewarded, but that on the other hand, unexpected increases in stock idiosyncratic volatility of themselves presage uncertainty and subsequent falls. Supporting such conjecture, Eun and Huang (2005) find a similar result to Fu for Chinese stocks using a 24-month rolling window. However, in their updated study Eun and Huang (2007) cross over to measuring risk using daily returns for the month preceding the return calculation (as AHXZ), on which basis, they report the opposite conclusion to their earlier one, namely that of a negative relation between return performance and idiosyncratic volatility, as consistent with AHXZ.

In studies that combine the small firm size and idiosyncratic volatility effects, Bali et al. (2005) have contended that the findings of Goyal and Santa-Clara (2003) showing a relationship between market returns and prior-month levels of idiosyncratic volatility are driven largely by stocks of small firms. Consistently, Angelidis and Tessaromatis (2005) report that it is the idiosyncratic volatility of stocks of small firms that is associated with the small firm size effect. Again, Brown and Ferreira (2004) argue that it is the idiosyncratic volatilities of small firms that are significant positive predictors of stock returns.

Data, Definitions and Methodology

A. Data

We obtain the data for this study from two sources. The Australian Graduate School of Management (AGSM) equities database was used to calculate monthly returns. The Securities Industry Research Centre of Asia-Pacific (SIRCA) database, which includes daily returns for Australian equities from 1980 through 2004, was matched with the AGSM database, and used to calculate idiosyncratic volatility.

In order to be included in the sample for a given month, a stock must have been traded in 35 of the previous 60 months (to calculate the stock's beta and idiosyncratic volatility for that month). Our final sample included 190,218 monthly observations of 2,347 companies. In any month, the number of companies ranged from just less than 200 to more than 1,000. Company sizes ranged from $30,000 to $46 billion (with an average capitalization size of approximately $400 million). In the two-dimensional sorts, the minimum number of observations assigned to any portfolio was 270.

B. Definitions

The variables market capitalization and idiosyncratic variance are defined as follows.

Market capitalization (company size) ($MC_{i,t}$):

The market capitalization of stock i for month t ($MC_{i,t}$) is measured as the number of company i''s shares outstanding multiplied by the share price at the end of month t.

Idiosyncratic variance (volatility) ($IV_{i,t}$):

We consider a market pricing model consistent with the CAPM as:

$$r_{i,t} = \alpha_i + \beta_{i,t}\left(r_{M,t}\right) + \varepsilon_{i,t} \tag{1}$$

where at each time t, $r_{i,t}$ is the excess return on stock i, $\beta_{I,t}$ is the beta of stock i, $r_{M,t}$ is the excess return on the total market of assets, M, α_i is the intercept term, and $\varepsilon_{i,t}$ are the error terms. For each stock i, beta ($\beta_{i,t}$) in each month t is calculated from the previous 60 months of historical data as:

$$\beta_{i,t} = \frac{Cov\left(r_{i,m}, r_{M,m}\right)}{Var\left(r_{M,m}\right)} \tag{2}$$

where $r_{i,m}$ and $r_{M,m}$ are, respectively, the returns for stock i and the market index M in months m = t-59 to month t. If a security did not trade for at least 35 of the previous 60 months, it is not included in month t's calculation. We estimate the total return variance for

stock i in month t (TVi,t) in respect to monthly returns $r_{i,m}$ (m = t-59 -> t) as:

$$TV_{i,t} = \sum_{m=t-59}^{t} \left(r_{i,m} - \bar{r}_i\right)^2 /(N-1)$$

(3)

where $\bar{r}$ i is the mean monthly return for stock i over the N months of data available over the preceding 60 month period; and similarly, we calculate the market variance at time t (MVt) as:

$$MV_{M,t} = \sum_{m=t-59}^{t} \left(r_{M,m} - \bar{r}_M\right)^2 /59$$

(4)

where $\bar{r}_M$ is the mean market monthly return of the market returns rM,m over the preceding 60 months. Finally, we calculate the idiosyncratic variance of stock i for month t (IVi,t) as:

$$IV_{i,t} = TV_{i,t} - \beta_{i,t}^2 MV_t$$

(5)

C. Methodology

Stocks are ranked on their market capitalization (MC) in month t and partitioned as ten portfolios with the same number of stocks in each portfolio. For each portfolio constructed at month t the monthly equal-weighted and value-weighted realised returns are calculated for the following month t+1. The portfolios are rebalanced each month based on market capitalization (MC) and a time-series average of the monthly equal-weighted and value-weighted returns is calculated for each portfolio decile. The same procedure is used in relation to idiosyncratic variance (IV).

We proceed to observe the extent to which a sort of portfolios on one variable (market capitalization or idiosyncratic variance) is a sort on the other variable. Additionally, we form a set of 100 (10x10) portfolios across pairs of the variables MC and IV, which allow us to identify the pattern of returns on one variable while holding another variable constant.

A comment on the formation of the above 10x10 portfolios is warranted. In double sorts on two variables aimed at controlling for the first variable while observing the impact of the second variable, the more usual approach is to sort first on the controlled variable into say 10 portfolios before each such portfolio is sorted into say a further 10 portfolios on the second variable. The problem here is the high correlation of our explanatory variables, which implies that a sort on the first variable will also effectively be a sort on the second variable, with only a very limited range of portfolio-averaged values for portfolios formed on the second variable. For this reason, we adopt the approach of forming portfolios on the maximum spread of the values of the second variable free of the restriction that each portfolio must have an equal number of stocks. Thus we create 10x10 sorts for each pair of variables by referencing each stock to each of its

decile portfolios. For example, a stock that appears in the decile 1 portfolio for the IV variable and decile 1 portfolio for the MC variable appears in the percentile portfolio (1, 1), while a stock that appears in decile portfolio 1 for the IV variable and decile 2 portfolio for the MC variable appears in the percentile portfolio (1, 2), and so on.

Analysis of Results

A) Single Sort Portfolios

Figures 1 and 2 plot the returns of portfolios constructed, respectively, on the variables of market capitalization (MC) and monthly idiosyncratic variance (IV). The relationships are plotted for equally-weighted (EW) and value-weighted (VW) returns over portfolio stocks. The corresponding values are tabulated as panels A–B of Table 1 along with the average values of idiosyncratic variance for each of the market capitalization portfolios in Panel A, and the average values of market capitalization for each of the idiosyncratic variance portfolios in Panel B. We note that the portfolios formed on increasing market capitalization are monotonically decreasing in idiosyncratic variance (Panel A) and the portfolios formed on increasing idiosyncratic variance are monotonically decreasing in market capitalization (Panel B). Our additional observations on the two relations are as follows.

(i) Portfolio Returns versus Market Capitalization (Figure 1)

In the relationship between portfolio returns and market capitalization shown in Figure 1 (equally-weighted and value-weighted returns are essentially identical for portfolios 2-10), we observe that the relationship is declining with market capitalization. Thus the graph appears to be broadly consistent with the relationship that Spiegel and Wang (2006) report for non-Australian stocks. We note, however, that this inverse relationship holds only for firms with quite low market capitalizations. We also note that Chan and Faff (2003) report a flat regression between returns and market capitalization for Australian stocks. It is possible that stocks driving the return performance of our portfolios 1 and 2 have been suppressed in Chan and Faff's linear regression analysis. Our findings, however, are consistent with Banz (1981) for the U.S. and Gaunt (2004), Brown et al. (1983) and Beedles et al. (1988) for Australia, who find that the size effect holds only for their smallest stocks.

(ii) Portfolio Returns versus Idiosyncratic Variance (Figure 2)

Figure 2 displays the relationship between portfolio returns and idiosyncratic variance. The relationship between both equally-weighted and value-weighted returns contradict each other. The equally-weighted returns are monotonically increasing (with the exception of portfolio 10) which is consistent with the findings of such as Malkiel and Xu (1997, 2006) and Fu (2008). The downward direction of the value-weighted portfolio returns from portfolio 4 onwards is precipitous. Clearly, larger capitalized stocks with higher idiosyncratic

variance are somehow associated with declining returns. A possible explanation is that increases in variance for stocks of larger companies indicate apprehension and auger declines. Notwithstanding, our results are consistent with the observations of both AHXZ (2008) and Bali and Cakici (2008), who, as noted above, report that the stocks of large companies are particularly sensitive to their observed negative relationship between average returns and idiosyncratic volatility. Intriguingly, therefore, our findings cross over between previous findings in the literature of both a positive and negative correlation of idiosyncratic volatility with average stock returns.

B) Double Sort Portfolios

Pairwise sorts of variables allow the explanatory power of one variable to be examined while controlling for the explanatory power of a second variable. Figure 3 again shows the superior performances of low-capitalized stocks (as Figure 1). The graph reveals a clear relationship between returns and idiosyncratic variance for stocks of small companies that is consistent with the trend for equally-weighted portfolios in Figure 2. We note that the largest companies with high idiosyncratic variance in Figure 3 (portfolio (10,10)) have markedly negative returns (which is consistent with Figure 2 where value-weighted portfolio returns decrease with idiosyncratic variance).

Figure 3 reveals that stocks of small market capitalization with high idiosyncratic volatility provide remarkably high average returns. Although this appears as something of a phenomenon, it is possible to interpret the returns as the mathematical outcome of averaging over highly divergent returns that are bounded below by a zero return. To see this, allow for the moment that stock prices are distributed log-normally. Log-normality of returns implies:

$$P_{i,1} = P_{i,0} . \exp[\mu_i + Z.\sigma_i] \qquad (6)$$

where $P_{i,1}$ is stochastic outcome price of stock i at the end of the period, $P_{i,0}$ is price of the stock at the commencement of the period, and μ_i and σ_i are, respectively, the mean drift rate and standard deviation of the continuously compounding growth rate for the stock, and Z is the unit normally-distributed variable. If for the moment also we take it that the drift continuously compounding growth rate (μ_i) is zero, the symmetry about zero of the unit normal Z function in equation 6 implies that the outcomes $P_0 \exp(x)$ and $P_0 \exp(-x)$ are equally likely for any x. So, for example, setting x = 69.3% per period, we have the outcomes $P_0 \exp(0.693) = P_0$ x 2 (a doubling of investment value), and $P_0 \exp(-0.693) = P_0$ x ½ (a halving of investment value) as equally likely. And similarly, the outcomes P_0 x N and P_0 x1/ N are equally likely for any N. The intuition is that no matter how negative the decline in a share price, the share price itself cannot become negative, whereas the upside is unbounded. To illustrate, we might imagine a portfolio of a large number of identical stocks of equal value which have zero drift and zero variance. The

outcome portfolio return is clearly 0%. Now consider that such stocks are subjected to idiosyncratic volatility such that half the stocks double their value and half the stocks lose half their value. The outcome portfolio return is 25%. So we note that the idiosyncratic volatility, of itself, has created a return. More generally, when a large number of identical stocks are subjected to idiosyncratic volatility in accordance with equation 6, the outcome return, R, is determined as:

$$R = \mu_i + \tfrac{1}{2}\sigma_i2 = \mu_i + \tfrac{1}{2} IV_i \qquad (7)$$

for example, Jacquier, Kane and Marcus (2003).[1] The phenomenon of returns augmented by volatility is effective to the extent that continuously compounding returns are symmetrically distributed. The continuously-compounded returns in our sample are not normally distributed and are inclined to be negatively skewed. For this reason, equation 7 of itself will tend to overstate the relationship between idiosyncratic volatility and returns. Nevertheless, the average monthly idiosyncratic volatility for the decile portfolios in Panel B of Table 1 ranges between zero and 14.15%, indicating that if continuously compounding returns had in fact been normally distributed, the difference between the average returns for the lowest and highest idiosyncratic-ranked decile portfolios should be about ½ 14.15% = 7.07% per month. In fact, the difference is only (2.51–0.98)% = 1,65% (Panel B of Table 1).

An important issue is the extent to which the higher recorded returns reported for small firms with high idiosyncratic volatility are likely to be wealth creating. Malkiel (2004), for example, has questioned whether econometrically determined excess returns associated with either the book-to-market equity ratio or firm size can be exploited to produce real money.

To respond, we consider that idiosyncratic volatility may be interpreted as the outcome of either one or both of two distinct price-formation processes. The first process is that stocks are liable to grow or decline fundamentally through time. In other words, at each point in time, each stock has an upside and a downside potential. In this case, the phenomenon of log-symmetric outcomes leads to a real wealth outcome, as we illustrate by stocks either doubling or halving in value through successive time periods in Figure 4. The process may be conceptualized in terms of two stocks of $100, one of which doubles to $200, and the other which halves to $50 over a period. The process generates a real return of 25% per period. This is the process advocated by Dempsey (2002).

The second process is that stocks are priced up and down as "noise," so that over-valued stocks have downside potential and under-valued stocks have upside potential, as advocated by Arnott et al. (2005). In this case, no real return is generated. This is illustrated in Figure 5, which may be conceptualized in terms of a portfolio of stocks each with a true value of $100, but which with equal probability may double or half in price

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[1] We note that with $\mu = 0$ and $\sigma = 0.693$ (the above binomial example), we have ½$\sigma2$ = ½(0.6932) = 0.24 (24%), which is approximately the calculated return, 25% (above).

as noise. Such stocks may be represented as oscillating with a statistical distribution such that for each stock priced at $200 (true value $100), another stock is priced at $50 (true value $100), with two stocks priced at $100, one from a previous over-pricing of $200, and one from a previous under-pricing of $50, as depicted in Figure 5. As the stocks oscillate, a portfolio that invests in each of the representative stocks retains its value ($450 = $200 + 2 x $100 + $50). Consistently, the value-weighted return per period is calculated as zero [($50*100%+$100*100%+$200*-50%+$100*-50%)/$450 = 0%]. However the equally-weighted portfolio return calculated each period is 25% [(100%+100%-50%-50%)/4]. The outcome that when idiosyncratic volatility is generated by noise, equally-weighted returns mathematically outperform value-weighted returns suggests the possibility of a noise explanation for the Bali and Cakici (2008) observation of a more negative association between idiosyncratic volatility and value-weighted returns as compared to the association between idiosyncratic volatility and equally-weighted returns. With idiosyncratic volatility generated by noise, realization of an actual return equal to the equally-weighted return (25% in Figure 5), requires that the investor is able to rebalance the portfolio as the same amount ($100) in each stock after each price change. This is the strategy of "fundamental indexation" advocated by Arnott et al. (2005).

Conclusion

Consistent with Fama and French (1996), we report that the average stock returns for the very smallest companies

are dramatically higher than for larger companies. Such size effect, however, is in evidence only for stocks of companies of less than approximately $6 million market capitalization, which are well outside the company size range expected to be held by institutions. Our findings here are roughly consistent with previous Australian findings (by Gaunt, 2004; Brown et al., 1983 and Beedles et al., 1988). Consistent with such as Malkiel and Xu (1997, 2006) and Bali et al. (2005) we find that the returns of portfolios of stocks of small firm size are strongly and positively associated with their idiosyncratic volatility. This finding suggest that the higher returns of portfolios of stocks of small firm size may be the mathematical outcome of averaging over returns that are widely distributed (high idiosyncratic volatility) but which have a degree of symmetry as log-returns. Two interesting possibilities arise. The first, allowing that the idiosyncratic volatility is the outcome of re-valuations (as opposed to "noise"), is that idiosyncratic volatility – and thereby the small firm effect - implies a real wealth creation (consistent with Dempsey's 2002 hypothesis, "risk creates its own reward"). The second possibility is that the observed idiosyncratic volatility – and thereby the small firm effect - represents "noise." In this case, taking advantage of the noise requires a continuous re-indexing of a portfolio so as to avoid over investing in the over-valued stocks, consistent with "fundamental indexing" as advocated by Arnott et al. (2005). We conclude that the phenomenon of idiosyncratic volatility suggests an area for exciting research into the fundamental nature of stock price formation.

Figure 1. Average monthly returns and market capitalization
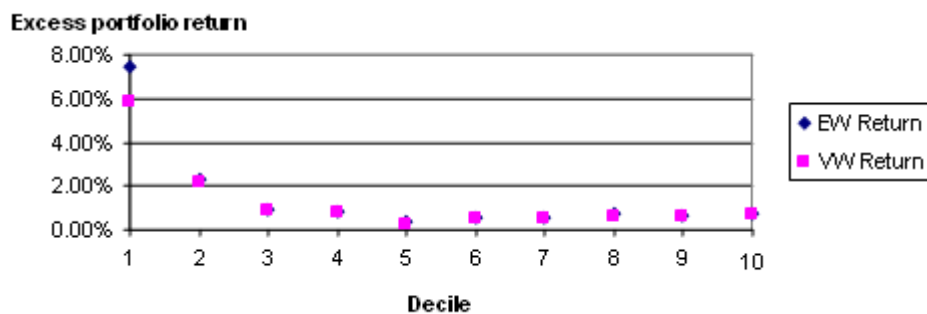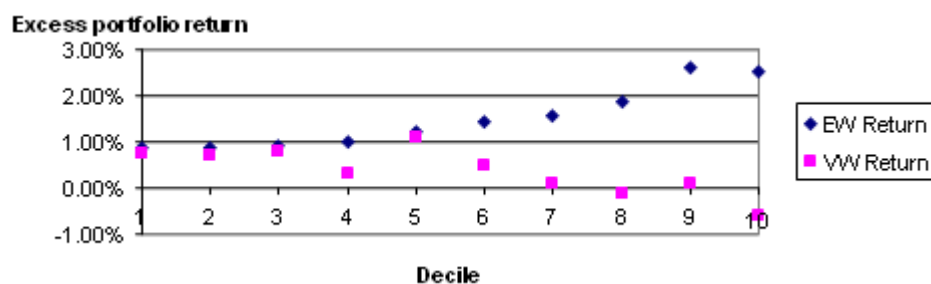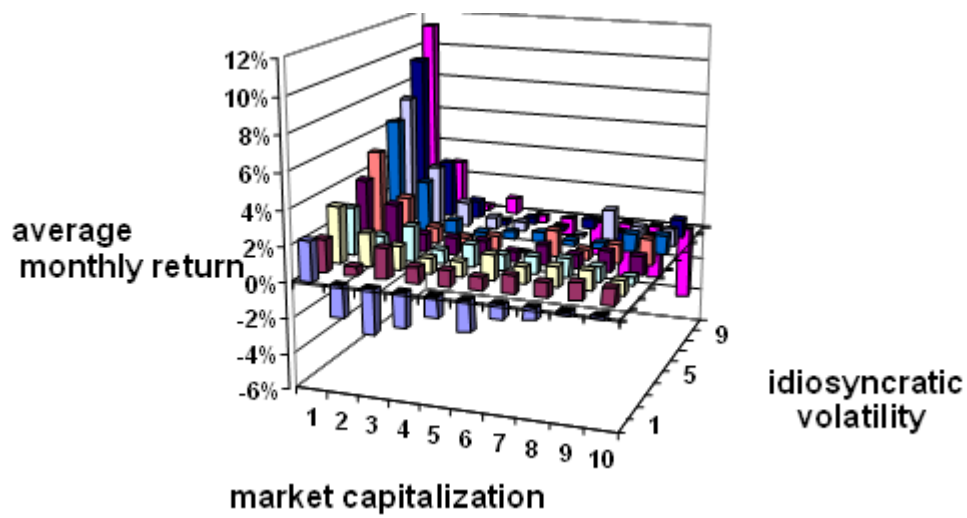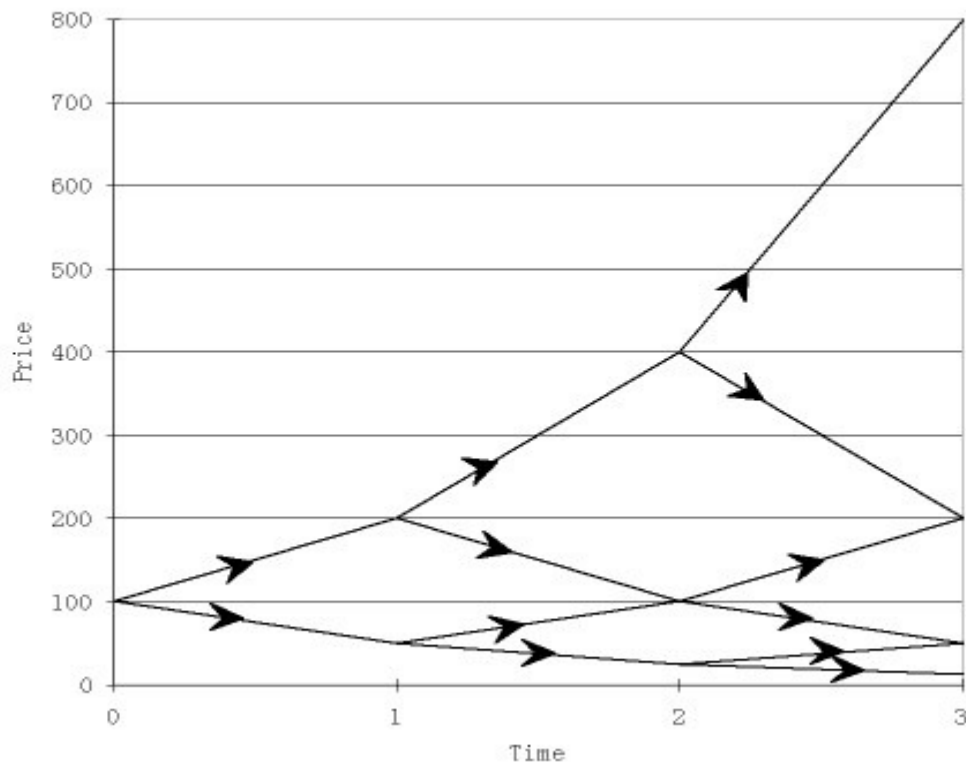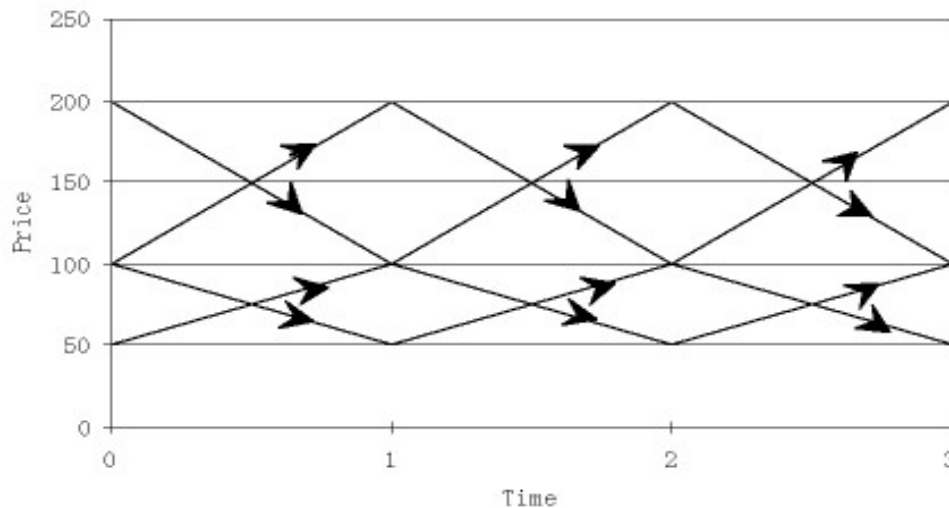

Figure 2. Average monthly returns and idiosyncratic volatility

Figure 3. Average monthly returns on market capitalization and idiosyncratic volatility

Figure 4. The outcome pattern of prices when a stock commences with a value of $100 and proceeds to either double or half its value each period as the outcome of fundamental growth or decline.

Figure 5. The outcome pattern of prices when stocks oscillate about their true value of $100 by either doubling or halving their market price each period as the outcome of "noise."

We calculate average monthly returns for portfolios formed on market capitalization (*MC*) and monthly idiosyncratic variance (*IV*). In each month, *t*, all stocks are ranked separately based on both market capitalization and idiosyncratic volatility. Both equally weighted (EW) and value-weighted (VW) average monthly returns are calculated for each portfolio. The portfolios are rebalanced monthly. The returns in the table are the average for each portfolio during the period. Panel A reports returns for portfolios formed on market capitalization. The average idiosyncratic volatility for each portfolio is tabulated in the final row. Panel B reports returns for portfolios formed on idiosyncratic volatility. The average market capitalization for each portfolio is tabulated in the final row.

Table 1: Average Monthly Returns of Portfolios Formed on Market Capitalization and Idiosyncratic Variance

Panel A: Portfolios Formed on Market Capitalization (as Figure 1)									
1	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**
Average MC(m) $2	$4.2	$7.3	$11.6	$18.0	$29.4	$52.3	$106.8	$284.8	$2,074
EW Return 7.46%	2.25%	0.94%	0.81%	0.34%	0.54%	0.53%	0.69%	0.68%	0.73%
VW Return 5.84%	2.19%	0.93%	0.80%	0.32%	0.54%	0.52%	0.68%	0.66%	0.74%
Average IV 6.85%	5.64%	4.95%	4.14%	3.55%	2.81%	2.36%	1.90%	1.03%	0.53%

Panel B: Portfolios Formed on Idiosyncratic Variance (as Figure 2)									
1	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**
Average IV -0.27%	0.13%	0.33%	0.59%	0.94%	1.43%	2.14%	3.21%	5.21%	14.15%
EW Return 0.86%	0.89%	0.91%	0.98%	1.20%	1.44%	1.57%	1.86%	2.63%	2.51%
VW Return 0.74%	0.68%	0.77%	0.30%	1.09%	0.49%	0.07%	-0.12%	0.07%	-0.63%
Average MC(m) $1,041	$881	$550	$357	$219	$135	$82	$55	$37	$24

We calculate average monthly returns for portfolios formed on pairs of market capitalization (MC) and monthly idiosyncratic variance (IV)). In each month t each stock is ranked separately on the variables (MC and IV) and allocated to a decile portfolio (1-10 as in Table 1) according to its ranking on the variable. Thus, each stock is allocated to two portfolios (1-10). Portfolios 1-100 are then formed based on variable pairs according to the cross rankings of their allocations to portfolios 1-10. For example, a stock from portfolio 1 of lowest market capitalization and from portfolio 1 of lowest idiosyncratic variance is assigned to portfolio (1, 1), a stock from portfolio 1 of lowest market capitalization and from portfolio 2 of next-to-lowest idiosyncratic variance is assigned to portfolio (1, 2), and so on. Equally weighted (EW) average monthly returns are calculated for month t for each portfolio. The portfolios are rebalanced monthly. The returns in the table are the average for each portfolio over the period.

Table 2: Average Monthly Returns of Portfolios Formed on a Two-Dimensional Sort on Market Capitalization and Idiosyncratic Variance

	MC 1	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**MC 10**
IV 1	2.29%	-1.80%	2.50%	-1.97%	-1.18%	-1.73%	-0.79%	-0.64%	-0.22%	-0.17%
2	1.85%	0.50%	1.79%	0.88%	0.93%	0.73%	1.02%	0.84%	1.01%	0.94%
3	3.23%	1.92%	1.38%	0.87%	0.86%	1.43%	0.98%	1.18%	1.14%	0.78%
4	2.72%	1.25%	1.98%	0.82%	1.30%	0.91%	1.01%	1.08%	0.84%	0.46%
5	3.85%	2.58%	1.05%	1.01%	1.02%	0.58%	1.12%	0.80%	1.16%	1.04%
6	5.08%	2.56%	0.98%	0.56%	0.85%	-0.06%	1.47%	0.53%	1.03%	1.55%
7	6.40%	2.90%	0.76%	0.24%	0.48%	0.58%	0.27%	0.30%	1.04%	1.14%
8	7.42%	3.38%	1.39%	0.68%	0.55%	-0.29%	0.13%	1.77%	0.94%	0.98%
9	9.42%	3.26%	1.06%	-0.31%	0.36%	-0.24%	0.59%	-1.05%	-1.54%	1.07%
IV 10	11.29%	2.87%	0.32%	0.90%	-0.44%	-1.00%	-2.11%	-3.41%	-3.15%	-4.14%

Header spanning row: **Average monthly returns for portfolios formed on market capitalization and idiosyncratic variance**

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FINANCIAL INCENTIVES TO ENHANCE CAPITAL INVESTMENTS IN THE EMERGING MARKET ECONOMY OF SOUTH AFRICA

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Abstract

Governments often provide financial incentives to enhance capital investments, as capital is one of the four main production factors in the business environment. Financial incentives may attract capital investments, which should increase economic development and job opportunities in the long run.

The objective of this research embodies the improvement of financial decision-making with reference to financial incentives to enhance capital investments in emerging market economies. While there are a variety of financial incentives which can be applied, this research paper concentrates on the well-known financial incentives, viz. the wear and tear allowances, the initial and investment allowances, the investment tax credits, cash grants, as well as tax havens and tax holidays.

South Africa is a developing country and is classified as one of the 21 emerging market economies of the world. As the empirical study focuses on the top listed South African companies, the conclusions of this study may also be valuable to other countries with emerging market economies, where the enhancement of investments is one of the key attributes.

Keywords: Accelerated Depreciation, Cash Grants, Initial Allowances, Investment Allowances, Investment Tax Credits, Tax Havens, Tax Holidays, Wear And Tear Allowances

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Introduction and objective of research

The globalization of financial markets, the increasing competition amongst enterprises, as well as social and technological changes, have led to an increasing uncertainty and instability in the financial and trade environments (Zopounidis & Doumpos, 2002:167). To counter these uncertainties and instabilities, governments provide financial incentives to enhance capital investments, as capital is one of the four main production factors (along with labour, raw materials and entrepreneurial talent). Governments offer a great amount of financial incentives to attract skills, technologies and capital investments. These financial incentives benefit the countries offering them, as well as the companies using them. Financial incentives may attract capital investments, which then may create more job opportunities which provide an increasing number of people with personal income to survive. Financial incentives are another way of achieving goals faster in the free market, compared to the usual business development. (Weigand, 1983:147).

The objective of this research focuses on the improvement of financial decision-making with reference to financial incentives to enhance capital investments. While there are a variety of financial incentives which can be applied, this research paper concentrates on the well-known financial incentives which are often available in emerging market economies to enhance capital investments. They are as follows:

- Depreciation allowances, including the wear and tear allowances, initial allow-ances and the investment allowances;
- Investment tax credits;
- Cash grants;
- Tax havens; and
- Tax holidays.

South Africa is a developing country and it is classified as one of the 21 emerging market economies of the world (MSCI Barra, 2010). It should be emphasised that the enhance-ment of investments is one of the key attributes of an emerging market economy (Heakal, 2010). As the empirical study focuses on the top listed South African companies, the conclusions of this study may be valuable to enhance capital investments in other emerging market economies. The financial incentives mentioned above will be discussed in the following sections.

Depreciation allowances

Depreciation allowances embody three types of financial incentives, viz. the wear and tear allowances, the initial allowances and the investment allowances. It must be emphasised that the prerequisite which must be met to ensure that the depreciation allowances hold any value to a firm, is that the enterprise must have a tax basis consisting of taxable income against which the depreciation allowances can be written off. In the absence of an adequate tax basis due to insufficient taxable income, depreciation allowances will be of no value to an enterprise. When contemplating this financial incentive to enhance capital investments, a government should ensure that the target enterprises are already profitable businesses, and are not newly established firms without any tax basis yet. The three types of depreciation allowances receive attention in the following sections.

2.1   Wear and tear allowances

This financial incentive may be calculated according to the declining balance method where the annual write-off amounts decrease annually, or the straight-line method where a fixed amount is written off every year. Enterprises usually get accelerated depreciation for tax purposes during the first part of the asset lifespan when they apply the declining balance method, compared to firms which use a straight-line depreciation method. Receiving accelerated depreciation should influence an enterprise in two manners, namely (Berg, De Waegenaere & Wielhouwer, 2001:207):

• The depreciation is off-set against the taxable income and the tax liability decreases consequently, which benefit the net cash inflow after taxation of the enterprise; and

• When future depreciation is received earlier, the advantage of the time value of money may play a part by benefiting the particular enterprise.

The cost of an asset for the purpose of the wear and tear allowances is usually considered to be the cost price which would have been incurred had such an asset been acquired in terms of a cash transaction negotiated at arm's length. These assets should typically have the following features:

• the asset must be owned by a taxpayer; or

• the asset must be acquired by the taxpayer under an installment credit agreement.

A wear and tear allowance is normally allowed to the extent that a qualifying asset is used for trade purposes. Therefore, if an asset is used 80% of the time for trade and 20% for private purposes, the allowance will often be granted on 80% of the amount by which the value of the asset has reduced. If an asset is used for trade for less than a full year of assessment, the allowance must also be apportioned. This would usually apply if an asset is acquired or disposed of during a year of assessment. A wear and tear allowance usually accompanies an initial or an investment allowance (Harcourt, 1968:82).

2.2   Initial allowances

An initial allowance is a form of an accelerated depreciation allowance which is granted in the year the asset is brought into use. The remaining balance of the asset is often written off accordingly with smaller wear and tear allowances over the lifespan of the asset. The initial allowance does not result in a total write-off greater than the cost of the asset. There is actually a deferment of the tax liability for the taxpayer, which is counterbalanced by the reduced wear and tear charges in later years. An initial allowance will benefit an enterprise due to the time value of money, as the cash flow benefit will be received earlier during the lifespan of the asset.

The following numeric example will explain the additional tax benefit of an initial allowance of 40% and a straight line wear and tear allowances over the asset lifetime of five years, when the cost of capital equals 10% per annum, a tax rate of 30% is applied and the cost of the asset amounts to €100 000:

Present value of tax benefit of the initial allowance at the end of the first year =

€100 000 x 0,4 x 0,3 / 1,10 = €10 909

Present value of the tax benefit of the wear and tear allowances over the asset life-

span = €100 000 x 0,6 / 5 x 0,3 x [[1 − {1 / (1,10)5}] / 0,10] = €13 647

The total tax benefit for this scenario is therefore equal to €24 556.

When no initial allowance is available and only the wear and tear allowances are applied, the present value of the tax benefit will be as follows:

€100 000 / 5 x 0,3 x [[1 − {1 / (1,10)5}] / 0,10] = €22 745

The preceding example proves that when a government provides an initial allowance, the present value of the tax benefits may be significant, but the determining factors will be:

• the extent of the initial allowance,

• benefit due to the time value of money, and

• that the target enterprises have adequate tax basis to utilise the depreciation allowances.

2.3   Investment allowances

Investment allowances have the same nature as the other two depreciation allowances and are therefore classified accordingly. An investment allowance does not, however, impact on the tax value of an asset and is therefore not

shown on the balance sheet of an enterprise. It represents an additional write off for tax purposes over and above any initial allowance and wear and tear allowances totalling the cost price of the asset. The tax benefit thereof is usually received at the end of the first year of the asset lifespan. The following numeric example will explain the additional tax benefit embodied by an investment allowance of 35%, when the cost of capital equals 10% per annum, a tax rate of 30% is applied and the cost of the asset amounts to €100 000:

€100 000 x 0,35 x 0,3 / 1,10 = €9 545

Similar to the application of an initial allowance, the amount of the tax benefit will depend on the extent of the investment allowance, the time value of money, and whether the target enterprises have adequate taxable income to employ the investment allowances. Previous studies by Hong and Smart (2010:82) have also shown that income shifting by enterprises may tempt governments to abolish the investment allowance to counterbalance revenue losses, and thus increasing the effective tax rates of enterprises. On the other hand, the importance of international tax planning should also be emphasized, as capital investments may counter the negative consequences of revenue losses by governments in the long run. One of the main goals of governments should be to lower corporate tax rates by employing, amongst others, the investment allowance to attract more capital investments. This may increase the standard of living in any country.

Investment tax credits

In comparison to a depreciation allowance, which requires that enterprises must have a tax basis consisting of taxable income against which the depreciation allowances can be written off, the amount of the investment tax credit is equal to a percentage of the cost of new capital investments which may be deducted from an enterprise's tax liability (Brigham & Daves, 2004:656). Although taxable income is not mentioned as such when applying the investment tax credit, it is without any doubt implied, as an enterprise must have taxable income in order to arrive at a tax liability. In this sense the investment allowance and the investment tax credit is much the same. It should be realised that the extent of the benefit written off against the tax liability of an enterprise will depend on the percentage of the investment tax credit, the time value of money, and whether the target enterprises have adequate tax liabilities to benefit from the investment tax credit. When an investment tax credit is written off against the tax liability of an enterprise, the firm's net cash inflow after taxation will increase.

To compare the extent of an investment tax credit and an investment allowance, the following numeric example can be employed. The time value of money is here ignored as the investment tax credit and the investment allowance are both employed at the same point in time. If the investment tax credit is equal to 10%, while the cost of the asset amounts to €100 000, the investment tax credit will be €10 000 which can be offset against the tax liability of the enterprise. Should a tax rate of 30% be applied (as in preceding numeric examples), the extent of an investment allowance must be as follows to match the tax benefit of the investment tax credit:

€10 000 / (€100 000 x 0,3) = 0,333 = 33,3%

Given the preceding tax rate, an investment tax credit of 10% will therefore be equivalent to an investment allowance of 33,3% at the same point in time.

According to Altug, Demers and Demers temporary investment tax credits do not always lead to an increase in investments, but may lead to more volatility in investments (2009:509). It is therefore not only the extent of the investment tax credit that matters, but whether it has a temporary or permanent nature may also be of prime importance for enhancing capital investments.

Cash grants

Cash grants as financial incentives to enhance capital investments, do not require a tax basis due to taxable income or a tax liability, like the depreciation allowances or the investment tax credit respectively do. As a cash grant increases the cash flow of an enterprise, it helps to partially decrease the sensitivity for the cash outflow of investments, which is advantageously to a firm (Agca & Mozumdar, 2008:208). Enterprises receive a cash inflow when needed, which will increase the solvency and liquidity of the firm.

By giving cash grants, the government should get what they want, and that embodies an enhancement of capital investments. The details of the projects which an enterprise must undertake to qualify for a cash grant is always specified by government, for example in terms of the type of project relating to the business activities, the minimum project lifespan, the minimum investment amount required and the number of permanent employment opportunities which must be created (Shah, 2009:345). Governments offer cash grants to enterprises with the expectation that the firms will bring capital investments to the country and create jobs to help stimulate the local economy (Martinez & Price, 2005). It should be emphasised that if enterprises deviate from the specifications of the investment project, according to the legal agreement between the government and the particular enterprise, the government may require that the cash grant should be partially or fully refunded by the enterprise.

Tax havens

Tax havens are countries with jurisdictions that actively make themselves available for tax avoidance and tax reduction, but this is no longer the principal function of a tax haven. Various aspects of financial planning are the main functions that make tax havens so attractive (Ginsberg, 1997:5). Along with its low tax rates, tax havens may also postpone the imposition of tax, which allows rapid financial development of firms and the enhancement of capital investments (Dharmapala & Hines, 2009:1058). While the tax reduction schemes may erode the tax revenues of those countries, the reduction of

the tax liabilities of enterprises should enhance capital investment in tax havens (Hong & Smart, 2010:82). It is, however, a prerequisite that tax havens should be politically established and be properly governed. A country can be classified as a tax haven when it complies with the following criteria (Addison, 2009:705-706):

- no or low taxation is charged;
- a deficiency of the exchange of information prevails;
- a deficiency of transparency exists; and
- no or very little real activities occur in those countries as the actual business operations materialise mainly abroad.

Tax havens operate as a channel for world trade and a large portion of the world's money is either in a tax haven or is distributed through one. Tax havens enhance capital investments through generating tax free revenues. This financial incentive offers economic diversification for the particular country making use of this financial incentive. It must be remembered that the main goal of enterprises worldwide is to maximize their return on their invested capital with the lowest risk involved. Countries which decide to operate as tax havens, should experience an enhancement of capital investments on the assumption that they have good legislation, a stable political environment, a responsive authority, as well as low or no taxes (Ginsberg, 1997:607).

Tax holidays

Tax havens and tax holidays are closely related to one another, as both these financial incentives avoid or reduce the tax liabilities of enterprises. Tax holidays are a financial incentive that grants enterprises a partial or total exemption from corporate income tax for a limited period (Lin, 2006:163). Countries will often seek to attract capital investments by offering a tax holiday. When the tax holiday period is over, the normal corporate tax will usually apply. Some countries may grant a tax holiday to enterprises on the condition that the firms must stay in the country during a stipulated period. If depreciation allowances or investment tax credits are deferred until after the tax holiday, this particular financial incentive

should not cancel the benefits of other financial incentives, but the present value of the depreciation allowances or investment tax credits may be much lower (Mintz, 1990:84). Tax holidays are according to Cleeve the most effective of all the fiscal incentives in attracting capital investments (2008:135).

Research methodology

The objective of this research was formulated as the improvement of financial decision-making with reference to financial incentives to enhance capital investments in emerging market economies. The perceptions of business leaders of large enterprises in a country with an emerging market economy are therefore essential to achieve the research objective. The empirical sample was defined as the top 20 listed companies in South Africa, based on their annual turnover for the 2008 financial year (Financial Mail, 2009). They are considered to be the leaders of large enterprises in the business environment of this country which has an emerging market economy.

A questionnaire was constructed, based on the literature study, and sent with a covering letter to the executive managers of the 20 companies. Three of them replied that the questionnaire was not applicable as they are only involved in financial investments and not capital investments. The actual sample was consequently reduced to 17. It was necessary to follow up and eventually 10 completed questionnaires were available, which provides a response rate of 58,8%.

Empirical results

The empirical results obtained are provided under the following headings:

8.1 The importance of the determining factors when using financial incentives

The perceptions of the respondents on the importance of the factors which should be taken into account when applying financial incentives to enhance capital investments, are shown in Table 1.

Table 1: The importance of the factors considered when using financial incentives to enhance capital investments, according to the perceptions of the respondents

Factors	Extremely important	Highly important	Mode-rately important	Little important	Not important
Utilising an available tax basis of your group of companies	1	4	4	1	
Deferring tax payment to a later stage	3	3	2	2	
Reducing future tax payments		8		2	
Increasing cash flows of your group of companies by receiving a cash grant			5	2	3

Creating job opportunities in your group of companies	2		2	5	1

A clear depiction of the responses according to the preceding table is necessary to arrive at the right conclusions. Weights were therefore given to the various responses of the respondents. Weighting of the responses was possible as it was stated explicitly on the questionnaire that the five point Likert interval scale used forms a continuum (Albright, Winston & Zappe, 2002:224-229 & 245). The following weights were given to the responses to rank the factors which are considered when financial incentives are applied:

Assign a weight of 5 for: Extremely important
Assign a weight of 4 for: Highly important
Assign a weight of 3 for: Moderately important
Assign a weight of 2 for: Little important
Assign a weight of 1 for: Not important

The weighted responses on the importance of the factors contemplated when applying financial incentives to enhance capital investments, appear in the next table.

Table 2: Weighted responses on the importance of the factors considered when using financial incentives to enhance capital investments, in a declining order of importance

Total weighted score calculated	Declining order of importance	The importance of various factors
37	1	Deferring tax payment to a later stage
36	2	Reducing future tax payments
35	3	Utilising an available tax basis of your group of companies
27	4	Creating job opportunities in your group of companies
22	5	Increasing cash flows of your group of companies by receiving a cash grant

It is interesting to notice that increasing the cash flows of the enterprise by receiving a cash grant has the lowest weight. From a theoretical point of view, cash grants would have been the main choice, as it has no prerequisite of an adequate tax basis or a tax liability. It can be concluded that, as the enterprises involved in the empirical survey are the top companies in South Africa,

8.2 The importance of the financial incentives for capital investments

The perceptions of the respondents on the importance of the financial incentives to enhance capital investments are

an adequate tax basis or a tax liability is no obstacle to them against obtaining financial incentives which require a tax basis or a tax liability.

The three factors which have the highest weights focus on the deferment of tax payments (that must eventually be paid), reducing future tax payments (which will benefit the future cash flow of the enterprise) and the utilisation of the enterprise's available tax basis.

addressed in Table 3. It is important to mention that it was stated explicitly on the questionnaire that the assumption is made that the financial incentives are available to the respondents.

Table 3: The importance of the financial incentives to enhance capital investments (on the assumption that they are available), according to the perceptions of the respondents

Financial incentives	Extremely important	Highly important	Mode-rately important	Little important	Not important
Wear and tear allowance	1	2	6	1	
Initial allowance	1		5	3	1
Investment allowance	1	1	3	4	1
Investment tax credits	1		3	6	
Cash grants	1		1	5	3
Tax havens			2	5	3
Tax holidays		1	1	5	3

The responses of Table 3 were weighted as discussed previously and the following table provides the results obtained.

Table 4: Weighted responses on the importance of the financial incentives to enhance caapital investments, in a declining order of importance

Total weighted score calculated	Declining order of importance	The financial incentives
33	1	Wear and tear allowance
27	2	Initial allowance
27	2	Investment allowance
26	4	Investment tax credits
21	5	Cash grants
20	6	Tax holidays
19	7	Tax havens

The importance of the well-known wear and tear allowances is emphasised by the respondents. It is, however, necessary to mention that according to Table 3 only three of the 10 respondents rated this financial incentive as extremely or highly important, while six respondents allocated a "moderately important" to the wear and tear allowance for enhancing capital investments. The total scores of the initial allowance, investment allowance and the investment tax credits are the next important incentives.

According to the preceding table, cash grants, tax holidays and tax havens are not perceived by the respondents to be very important financial incentives to enhance capital investments. Countries should rather pay attention to the depreciation allowances and the investment tax credits to enhance capital investments according to the respondents.

8.3 The expected success rates of the financial incentives to enhance capital investments

It is interesting to study the expected success rates of the financial incentives used for enhancing capital investments, as it is presented in Table 5.

Table 5: The expected success rates of financial incentives to enhance capital investments, according to the perceptions of the respondents

Financial incentives	Average expected success percentages	Median of the expected success percentages
Wear and tear allowances	77,2%	80,0%
Initial allowances	50,6%	50,0%
Investment allowances	40,6%	30,0%
Investment tax credits	19,4%	17,5%
Cash grants	18,8%	12,5%
Tax havens	10,0%	0,0%
Tax holidays	6,3%	0,0%

Note: One respondent did not provide any answers, while another respondent answered it only partially.

The average expected success percentages of Table 5 correspond to a large extent with the results obtained from Table 4. The sequence of the financial incentives in a declining order of the average expected success percentages to enhance capital investments, is the same as the sequence of the financial incentives in a declining order of importance, except in the case of tax havens and tax holidays. The average and the median of the expected success percentages of the wear and tear allowances and the initial allowances are equal to or exceed the 50% level, while the average and the median of the expected success percentages of the other financial incentives indicate that the respondents do not believe that they will be very successful.

Conclusions

This research focuses on financial incentives used to enhance capital investments. As South Africa is classified as an emerging market economy, the conclusions of this research may also be important to other countries with emerging market economies, where the enhancement of investments is one of the key characteristics. The main conclusions of the empirical study, which has the top listed South African companies as its sample, are as follows:

1. The three most important factors as perceived by the respondents, when making use of financial incentives to enhance capital investments, are the deferment of tax payments (that must eventually be paid), reducing future tax payments (which will benefit the future cash flow of the enterprise) and the utilisation of the enterprise's available tax basis. It may be surprising that the improvement of the cash flow of an enterprise is not rated as very important when they receive a cash grant. A possible answer may be found in the fact that the respondents, who are the top companies in South Africa, have an adequate tax basis or a tax liability needed to obtain financial incentives which require either a tax basis of a tax liability.

2. The empirical results of this research paper underlines the importance of the well-known wear and

tear allowances. It should, however, be mentioned that a minority of the respondents rated this financial incentive as extremely or highly important, while a majority of respondents allocated a "moderately important" to the wear and tear allowance for enhancing capital investments. The other financial incentives which are also considered as important by the respondents to enhance capital investments are the initial allowance, investment allowance and the investment tax credits.

3. The sequence of the financial incentives in a declining order of the average expected success percentages to enhance capital investments, is the same as the sequence of the financial incentives in a declining order of importance, except in the case of tax havens and tax holidays. The conclusion regarding the financial incentives in a declining order of importance is therefore confirmed when the respondents indicated the expected success percentages of the various financial incentives.

4. The average and the median of the expected success percentages of the wear and tear allowances and the initial allowances are equal to or exceed the 50% level, while the average and the median of the expected success percentages of the other financial incentives indicate that the respondents do not believe that they will be very successful.

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INSTITUTIONALISING A VALUE ENACTED DOMINANT ORGANISATIONAL CULTURE: AN IMPETUS FOR WHISTLEBLOWING

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Abstract

Whistle blowing on organisational wrongdoing is becoming increasingly prevalent. However, a renewal of existing literature reveals that every potential whistle blower is not always inclined to blow the whistle, despite protection being accorded to whistleblowers through legislation. The cost of blowing the whistle can be a deterrent to potential whistle blowers. It is quite plausible that an organisational culture which institutionalizes a dominant value based system can decrease whistle blowers expectations of retaliation. The purpose of this article is to provide a conceptual framework for a dominant value enacted organisational culture which can serve as an impetus for whistle blowing in the public sector. It is important that organisations make their value systems "lived" practices to motivate potential whistleblowers to report on wrongdoing. It can be argued that the institutionalisation of enacted values can lead to low perceptions of retaliation, which is often a deterrent in blowing the whistle.

Keywords: Whistle blowing, retaliation, values, organisational culture

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Introduction

Unethical behaviour has become part of everyday life in the South African public sector. There is heightened focus on the impact of organisational wrongdoing and how to eliminate it in an effective manner. Whistle blowing is commonly considered as an effective approach to eliminate unethical conduct.

The purpose of this paper is to examine the impact of a value enacted organisational culture in promoting whistleblowing. Despite the protection of whistleblowers through legislation, potential whistleblowers are dissuaded from blowing the whistle because of numerous cases of retaliation within organisations. The article ascertains the impact of retaliation on organisational culture and its influence on potential whistleblowers.

An organisational culture that condemns retaliation through its actions is more likely to encourage disclosure of perceived unethical conduct. Without a dominant organisational culture, driven by humanizing values, whistleblowing may not be an effective approach to disclose unethical conduct in the public sector. The efficacy of whistleblowing is dependent on various conditions. It is suggested that organisational culture is an important condition to consider for effective whistleblowing.

Locus of whistleblowing within the public sector

Whistleblowing can be considered as the disclosure by organisational members of illegal, immoral or illegitimate practices within an organisation to persons or agencies that may be able to take action (Near and Miceli, 1985:4). Such perceived wrongdoing can directly or indirectly affect the whistleblower. Whistleblowers, as ethical agents of responsibility and accountability, are often protected by legislation when they behave responsibly toward society. They attempt to protect people from the organisations they are employed in, when these organisations behave against the common good of society. The acknowledgement of such a need for protection implies that ethics is problematic in many organisations. Even though whistleblowing via internal channels is less threatening to an organisation compared to external reporting, generally whistleblowing within an organisation is not favoured. Often, whistleblower reports of wrongdoing is ignored or buried, thereby unsuccessfully stopping wrongdoing and possibly

subjecting the whistleblower to retaliation (Miceli and Near, 1992:260.)

Within the public sector, corruption can be considered as any conduct in relation to individuals entrusted with responsibilities in public office, which violates their duties as public sector employees and which is aimed at obtaining undue gratification of any kind for themselves or for others (Department of Public Service and Administration, 2006:3). Government has to fight corruption, if it is to ensure public faith in the public service, maintain trust and sustain an ethos of democratic values and principles.

Whistleblowing, as a mechanism to combat corruption, can provide public sector employees with a tool to disclose wrongdoing in a protected environment. Whistleblowing enforces the principles of accountability, professional ethics, good governance and transparency which constitutes the foundation of sound public administration. The Protected Disclosures Act (PDA) of 2000 was passed to encourage employees to disclose information about unlawful or irregular behaviour in the workplace.

Whistleblowing protection was originally part of the Open Democracy Bill. Based on the comparative experiences of Australia and the United Kingdom, it became a freestanding law in an endeavour to give it greater recognition and promotion (Chêne, 2009:9). Any disclosure in good faith, offers protection to the whistleblower from retaliation, as long as they meet the requirements and follow the procedure set out in the Act.

The PDA Act of 2000 upholds the expectation of a "democratic and open society in which government is based on the will of the people and every citizen is equally protected by law " as specified in the Constitution, 1996. The Act reassures employees, both in the public and private sectors, with sincere concerns about malpractice that there is a safe alternative to silence, by providing protection against victimization. The Act also encourages organisations to establish workplace structures to enable whistleblowing and in seeking to protect whistleblowers organisational detriment, prescribes the route to follow in the event of disclosure (Dimba, Stober and Thomson, 2004:148). It further entrenches the obligation of employers to protect whistleblowers.

It is envisaged that whistleblowing will ensure that wrong doing is properly raised and addressed in the workplace and with the individual responsible. In view of growing demands for an ethos of good governance in the public sector, the implementation of whistleblower protection can be considered as an exponent of the call for greater accountability of government to society.

Despite government initiatives like whistleblowing to combat corruption, Dimba, et al. (2004:143) contends that research has shown that employees are reluctant to blow the whistle against corrupt activities. Incidents of retaliation by employees have been cited as a contributory factor to such reluctance. Dimba et al. (2004:4) make mention of the engineered system of repression through a spynetwork during the apartheid era which has generated a culture of mistrust. Apartheid era

spies, referred to as "impimpis" faced gruesome public death if they were suspected of being informants.

Further, whistleblowers suffered great loss in terms of finances, emotional stress, strained relationships and career upliftment. Uys (2011:65) cited cases where a whistleblower lost his job five months later after being reinstated, while another was faced with a major legal debt. Such evidence does not empower people to participate in their governance, neither does it make government accountable for its decisions.

Since the introduction of the PDA 2000, only five cases were brought to the Labour Court, while numerous other cases did not reach the Labour Court. The numerous cases of whistleblowing being inappropriately handled demonstrate that the protection given to whistleblowers is poor, thereby, discouraging potential whistleblowing. This is supported by attendees at a workshop held by the Public Service Commission to enhance excellence in governance in the public sector. Public sector employees at the workshop indicated awareness of cases of fraud, but they were too afraid to blow the whistle because of becoming victims of what the Act referred to as " occupational detriment" (Dimba et al., 2004:149). The fear of reporting extended beyond the workplace, to the protection of property, families and their own lives. The Act can be criticized for not requiring employers to do anything other than not victimize whistleblowers. This lack of imperative does not place any urgency to implement whistleblower policies and systems as stipulated by law.

Uys (2008: 905) argues that the employer is in a more advantageous whistleblowing position than the whistleblower, despite the protection offered by the PDA, 2000. Some of the advantages enjoyed by the employer include the following (Uys, 2008:905):

- Employers victimizing whistleblowers do not face criminal sanctions as it is not constituted as a criminal offence.
- Whistleblowers who suffer occupational reprisals after disclosure have to provide conclusive evidence, which is often difficult to prove.
- Internal disciplinary procedures, which seldom allow external legal representation, places whistleblowers in a vulnerable position, making it difficult to successfully represent their cases.
- The non-requirement for an independent investigation and the failure to place responsibility on prescribed bodies to investigate the disclosure, offers no guarantee that the disclosure will be investigated.

De Maria (2006:3) argues that retaliation frequently takes place faster than the protection, which places the employer at a strategic advantage, while traumatizing the whistleblower in the interim. Given the intense history of mistrust between the employee and the employer in the South African public sector, one of the major challenges in implementing effective whistleblowing is how to promote a culture of whistle blowing in organisations that equate whistleblowing with the "impimpi" culture.

The body of empirical literature regarding whistleblowing is in its infancy in developing democratic

states like South Africa. In view of escalating cases of corruption in the public sector, the examination of a dominant value enacted organisational culture as an impetus for encouraging whistleblowing can be considered of great value. Since whistleblowing to the media is frowned upon and disclosure only to recognised agencies is given protection, whistleblowers need to feel confident and safe that blowing the whistle in good faith would lead to a focus on the message and not the messenger. This necessitates a culture of values that is shared and enacted throughout the organisation. While the law is essential, it should not be seen as a panacea in and of itself.

Retaliation: potential impediment to whistleblowing

Retaliation is often considered as undesirable action taken against a whistleblower, in direct response to the act of whistleblowing. Rehg (1998:17) defines retaliation as action taken by members of an organisation against an employee in response to the employee reporting wrongdoing. Actions of retaliation include involuntary transfer, poor performance appraisal, demotion, ostracism, coercion to withdraw accusation, steps taken to undermine the process, imposition of hardship, denial of training and dismissal.

Literature indicates that wrongdoers use retaliation to deter whistleblowing or when wrongdoers suspect that whistleblowers will use external channels to report wrongdoing (Near and Miceli, 1985:12). In addition, retaliatory actions may be used by the organisation to silence the whistleblower totally or discredit the whistleblower (Magnus and Viswesvaran, 2005:287). Such retaliatory actions are incongruent with organisations that have institutionalized values into their culture.

Given the potential for positive outcomes to result from whistleblowing, it can be argued that organisations that use retaliation in response to whistleblowing do not value honesty, justice, loyalty and general public interest.

Despite legislation protecting whistleblowers, cases of retaliation have been reported. A survey of whistleblowers revealed that 95 percent had suffered retaliation of various forms (Miceli, Near and Dworkin, 2008: 381). Effects of retaliation include family problems, financial problems, depression, declining physical health and high legal costs (Bouville 2008:980). These are some of the serious consequences that befall whistleblowers, where suffering is seen as an essential part of whistleblowing (Bouville, 2008:580).

A study by Magnus and Viswesvaran (2005:292-293) revealed the following correlates of retaliation against whistleblowers:

- Reporting of frequent and severe wrongdoing which threatens the organizations' future performance.
- Reporting to external channels which risk public scrutiny and legal intervention.
- Violation of a cultural norm that actively operates to continue and support transgressions.

- A whistleblower of high status in the organisation who is considered to have betrayed the organisation.

Research also suggests that low paid employees are most susceptible to retaliation since they may be powerless compared to wrongdoers on whom the organisation is dependent.

Without guarantees against retaliation, employees may well have little confidence in internal disclosures. In this regard, several studies indicate that retaliation increases the chance that employees will blow the whistle to parties outside the organisation (Near and Miceli 1985:8). Employees, therefore by perceiving adverse employment consequences of whistleblowing, become fearful and suspicious of organisational commitment to whistleblowing. It is generally assumed that a whistleblowers' experiences (perceived or actual, reward or retaliation) following the act of whistleblowing, will have strong effects on the willingness of others and likelihood to blow the whistle in the future (Miceli and Near, 1992:101).

The cost-benefit analysis can influence employees' whistleblowing decisions. Although retaliation against whistleblowers can encourage whistleblowing behaviour (Miceli and Near, 1992:101), the serious consequences of retaliation can also discourage whistleblowing behaviour. In this case a process of weighing the costs and benefits of whistleblowing may reveal that costs like retaliation may outweigh potential benefits like cessation of corrupt practices. Retaliation can also be used by wrongdoers to influence potential whistleblowers cost-benefit analysis by emphasizing the perceived costs and minimizing the perceived benefits of whistleblowing, thereby inducing fear. It is also quite plausible that anger towards the wrongdoer can overpower the fear brought about by wrongdoer retaliation. Further, potential whistleblowers may be prepared to risk personal and financial losses because of perceptions of responsibility for addressing wrongdoing.

Irrespective of the severity of retaliation, retaliation in any form affects value based relationships within the organisation and harms the organisation. Rehg et al. (2008:228) contend that if whistleblowers suffer retaliation they are likely to review the procedures for organisational response as unjust. Procedural injustice can lead to withdrawal of trust and loyalty. In a study by Rehg et al. (2008:235), they found that in the long term retaliation may deter would-be whistleblowers, because of its chilling effect on other would-be whistleblowers. However, any form of retaliation is an ineffective strategy to discourage whistleblowing. Most often, retaliation backfires since it can lead to external channels of reporting which can affect the reputation of the organisation and negatively impact on organisational performance. Further, retaliation can lead to the work environment degenerating into an atmosphere of mistrust, thereby affecting the ethical culture in the organisation.

Retaliation and organisational culture

Organisations that employ a bureaucratic ethic that values conformity with organisational ideologies can employ values like trust, loyalty and justice to merely perpetuate a regimented organisational culture. Shahinpoor and Matt (2007:37) found that such organisations are like feudal kingdoms, where questioning is perceived as disloyal and dealt with punitively.

Shahinpoor and Matt (2007:38) identified the following features of an organisational culture that will likely condone retaliation and condemn whistleblowing:

- Maintaining self serving interests.
- Excessive drive for order, unity and loyalty.
- Obsession with internal political order.
- High ranking employees meticulously conform to organisational ideologies and not by their independence of thought.
- Managers and leaders surrender themselves into yes-men/women, who are isolated from discussions of actions.

By perpetuating an organisations' own values without criticism, conformity can be enforced through bureaucratic processes. A school of thought argues that since bureaucratic organisations are less responsive to change than other organisations, whistleblowing will be negatively responded to because it represents a challenge to the authority structure which is critical for the success of the bureaucracy (Near and Miceli, 1995:701). Such organisations cannot be transformed if individual conscience and criticisms are not tolerated. Shahinpoor and Matt (2007:38) argue that "principled dissent promotes basic human values like loyalty, integrity, courage and individual conscience. "Principled dissent" can be considered as efforts by the individuals in the organisation to protest because of current practice. Whistleblowing can be considered as a form of "principle dissent" since it is a critical and non-conformist point of view. Organisations that retaliate against whistleblowers can be considered as those that place high value on "organisational fit", which is conformity to organisational values and which may not be congruent with the personal values of the whistleblowers. In such organisations, those who challenge the status quo often face greater personal challenges and resistance (Shahinpoor and Matt, 2007:39).

An organisational culture which does not appreciate and value employees, who show commitment to the organisation, will regard whistleblowing as an act of non-conformity to organisational policy. Even though whistleblowing can be considered as an act of "principled" organisational dissent based in integrity, honesty and loyalty; an organisational culture that values conformity can place the whistleblower in a very vulnerable position. Standing apart from the organisation can be reflective of a challenge to such organisational conformity and in opposition to acceptable current practices. The organisation can retaliate because of the need for conformity, which invariably makes it's ethical convictions questionable.

An organisation which retaliates against whistleblowers can be criticised for violating the fundamental human dignity of employees (Alford, 2001:125). Retaliation can be considered as an act which punishes whistleblowers for not "fitting in" with the organisational culture. Alford (2001:35) argues that whistleblowers are not only expected to conform to organisational values or to comply with the culture of the organisation, but also to become enemies of their own personal values. Such organisations can be deemed as corrupt since they are restricting disclosure in good faith. Shahinpoor and Matt (2007:43) argue that organisations that retaliate against whistleblowers discourage and thwart the flow of constructive critique, thereby forcing the employee to assume the organisational persona. Since there is no consistency between the employee's personal values and the organisational values speaking with honesty, loyalty and integrity is not acceptable. Instead, employees are rewarded for supporting the organisational culture and punished for being whistleblowers. In this regard, the very values that are important to the whistleblower is considered a liability by the organisation.

Alford (2001:60) argues that organisations that respond to whistleblowing with retaliation have a culture that includes a moral world of its own and which does not require justification on any grounds outside itself. Such organisations are not likely to be motivated by promoting and protecting ethical values of employees, but are rather mainly motivated by instrumental values. Seen in this way, such an organisational culture perpetuates a "dehumanized organisation" which extinguishes dignity and disobedience to authority. In such a climate where whistleblowing is not supported, employees are less likely to report wrongdoing and may not be considered as more credible in doing so. It may also reflect the unwillingness of the organisation to change (Shahinpoor and Matt, 2007:41).

Some of the features of an organisational culture that engages in retaliation against whistleblowers can include the following (Shahinpoor and Matt, 2007:42):

- Impairment of employees' physical, intellectual and emotional qualities.
- Retardation of opportunities for learning and growth.
- Lack of employee right to have a voice, to act freely and autonomously and to be taken seriously as an individual of conscience.
- Lower morale, less productivity and decreased inclination to be loyal to an organisation that is intolerant of constructive criticism.
- Non-recognition of personal dignity.
- Dehumanization of individuals.
- Integrity is not promoted by forcing employees to go along with organisational wrongdoing.
- Low value placed on being loyal and working towards the common good as reflected in the organisation's mission statement.
- Development of a non-learning organisation which places low emphasis on hard working, highly motivated, respected and competent employees.

The above features of an organisational culture which supports retaliation is unlikely to enjoy ethical and practical benefits that flow to individuals and the organisation. By suppressing opportunities for self

examination and self improvement, such organisations diffuse any attempt at challenging and revealing unethical conduct. It can be argued that a dominant culture where strong core values are emphasized and stressed through action is not deemed important. As a result, there is no basis for conveying a strong sense of identity to members, facilitating commitment and enhancing social stability. Such organisations can be considered as inefficient, irrational and unethical in retaliating against whistleblowers.

Concept of a dominant organisational culture

Over the years, different definitions of organisational culture have been developed. Most of the definitions agree that organisational culture refers to a system of shared assumptions held by members within the organisation, which include morals, norms, attitudes and principles that help to create standards for people to co-exist (Werner, 2008:26). The organisational culture serves as the foundation for the organisation's management system and as a set of practices and behaviours that exemplify and reinforce the elements.

Culture theorists perceive the organisation as a social entity which motivates and influences employee behaviour. Organisational leaders are expected to identify the factors that constitute the organisational culture. The organisational culture reflects organisational values, appropriate behaviour to shape such a culture and systems that instil these behaviours in the organisation (Werner, 2008:25).

The organisational culture serves to give employees an identity, establish greater commitment to organisational goals, provide guidance in terms of acceptable behaviour, create social system security with associated emotional security and act as a yardstick to evaluate and correct deviant behaviour (Werner, 2008:28). It is important that a deeply entrenched culture is established. Werner (2008:27) refers to such a culture as a dominant organisational culture where enacted values are reflected in the everyday behaviour of employees. Enacted values represent the values that are actually exhibited or converted into employee behaviour. Conversely, espoused values are explicitly stated as what is preferred by an organisation. Such preference does not automatically produce the desired behaviour, since not everyone "walks the talk" (Kinicki and Kratner, 2003:44). Therefore, a dominant culture emerges when enacted values are reflected in employees' behaviour. In such a culture there is greater commitment to core values and higher organisational commitment. Harquail and Fox (1993:162) are of the view that strong cultures provide more clues on how to behave, more reinforcing information about what is right to do and may have higher penalties for non-conformity. When organisational culture is weak, employees tend to develop their own possible identities for ways of behaving, resulting in essential values not being shared by employees. With less direction and approbation of unacceptable conduct, ethics can be compromised.

Bowditch and Bouno (2001:291) are of the opinion that three basic factors make a significant difference on how a dominant culture can be influential in shaping the behaviour of the employees in an organisation. Firstly, the greater the degree of shared beliefs and values, the greater the culture's influence, since there are basic assumptions that guide behaviour, and influence organisational life. Secondly, widely shared beliefs and values across the organisation has a powerful effect because more people are guided by them. Finally, in cultures where the relative significance of different assumptions is widely known, the effect on employee behaviour will be more pervasive since there is less ambiguity about which beliefs and values should prevail in problem situations.

Since it is difficult on the surface to predict a dominant culture, insight into the historical and current activities is imperative. Given the difficulty, it can be suggested that observation, interviews comparing information and joint assessments from internal and external sources can contribute to a more objective deciphering of organisational culture.

A dominant organisational culture affects all aspects of organisational life such as the ways in which employees perform, types of decisions made, organisational policies, procedures and organisational effectiveness. Academic researchers concede that the organisational culture can be a driver of employees' attitude and organisational effectiveness. Results from several studies indicate that the congruence between an employee's values and the organisation's values was significantly associated with organisational commitment, loyalty, honesty and ethical behaviour (Kinicki and Kreitner, 2003:50).

Perpetuating a dominant organisational culture

Every organisation should establish a culture that encourages good performance that is ethical. Encouraging behaviour that supports values like honesty, trust, integrity and loyalty should be part of this culture.

Weaver (2006:351) noted that an ethical identity leads to consistent ethical behaviour. Behaviour can be considered to be ethical when it is not merely based on what is good for oneself, but also considering what is good for others (Van Vuuren, 2008:63). Ethical behaviour can be developed and institutionalised through actions. This necessitates the establishment of an organisational culture where values are enacted rather than merely espoused. Organisations that foster ethical behaviour provide greater opportunity for the development of moral identity, likely leading to greater ethical behaviour among employees (Weaver, 2006:352). Vadera, Aguilera and Caza (2009:560) used the studies of Aquino and Reed (2002) and Skitka and Mullen (2002) to show that moral identity associated with social justice influenced individuals to behave according to their moral mandates when such moral values are threatened. Studies by Selfert (2002 in Vadera et al., 2009:563) uncovered that the highest likelihood of whistleblowing occurred when all whistleblowing circumstances relating

to justice within the organisation were fair. This stream of research therefore indicates that when organisations are perceived to have a dominant value based culture, then employees are more likely to blow the whistle.

Sustaining a dominant organisational culture can be supported by a number of approaches to an enacting value system. It can be argued that an enacted value system within the organisation can encourage valid whistleblowing that can be used to improve operations within an organisation.

Strategies and processes in organisations play a major role in developing and strengthening such values. This implies that it cannot be assumed that employees will be naturally ethical or prone to behave ethically. Van Vuuren (2008:63) argues that while this may be true, there are many genuinely ethical employees who often unknowingly commit wrongdoing and there can also be employees who wilfully behave unethically. In reality, it has to be accepted that legislation alone cannot prevent corrupt practices in organisations. Therefore, any organisation needs to focus on the practice of values that can set standards that employees should adhere to. Establishing such an ethical culture, reflecting legitimate organisationally sanctioned behaviour enhances the expected efficacy of the whistleblowing intention of would be whistleblowers. A study by Zhang, Chiu and Wei (2009:35) on internal whistleblowing in China showed that an ethical climate was positively associated with whistleblowing. Based on a six year research study on 18 visionary companies, Collins and Porras (1998:205) identified the following mechanisms that can be used to enforce an organisational culture based on the identified core values:

- Commitment of senior leadership to a specific organisational culture.
- Orientation programmes with ideological and practical content.
- Promotion of employees who demonstrate behaviours congruent with the desired organisational culture.
- Advancement criteria explicitly linked to corporate ideology.
- Continuous articulation of the organisational values in communication and documentation.
- Investments to "buy-in" support for enacted values and appropriate behaviour.
- Public recognition for those who support organisational ideology and visible penalties for those who do not.

Identifying mechanisms that can be used for establishing the desired organisational culture is imperative for successful organisational performance and the integration of values into the core business of the organisation and behaviour of employees.

Van Vuuren (2008:63-66) suggested that enacted values can be perpetuated through a system of codifying ethics standards and institutionalising ethics. Van Vuuren (2008:64) argues that a code of ethics should explain organisational values, aimed at promoting ethical behaviour. Without a code of ethics, it is difficult to guide ethical behaviour. Ethics awareness and code ownership by employees has to be underpinned by a democratic and participative process. It is true to say that a collective process can reduce variations in employee's perceptions of what is the right thing to do. Further, having a code of ethics that is seldom used, discussed or revised is of little value. The significance of such a document is largely dependent on the extent to which it is a living document.

The code of ethics should be the benchmark against which the organisation measures its ethical actions. Merely reacting to legislation is hardly likely to perpetuate a culture of practicing values, since mere compliance diminishes the ethical discretion of employees. In contrast, by adopting an integrity approach to the enactment of values, ethical values are internalised. By moving beyond mere compliance and enforcement, employees are inspired and committed to "lived" organisational values. Institutionalising ethical concerns can increase employees' awareness of the importance of ethical behaviour and thus strengthen the ethical culture of the organisation (Van Vuuren, 2008:65).

Tsahuridu and Vanderckhove (2008:116) argue that by institutionalising employees into the ethical culture of the organisation, the ethical autonomy of employees in the organisational context is enhanced. Hence, the environment for potential whistleblowing is more conducive. When values are enacted in an organisation, it can be suggested that employees are less likely to fear retaliation. A dominant organisational culture underpinned by the consistent practice of values will hardly be tolerant of retaliation towards the whistleblower. Therefore, the motivation to blow the whistle will be higher. In this regard, Near and Maceli (1985:6) use the motivation theory of Vroom and Skinner to argue that an individual's motivation to blow the whistle is based on the expectancy that managerial attention to the complaint, recognition of the whistleblowers' identity and changes in managerial practices will follow, ultimately leading to a further cessation of corrupt practices. Further, when the whistleblower has observed consistent opposition to corrupt practices and positive managerial reaction, then the corruption setting reinforces the motivation to blow the whistle. The argument of Near and Maceli (1985:6) shows that in a dominant value system, employees may less likely perceive retaliation and therefore are more inclined to blow the whistle. From the expectancy and reinforcement models of motivation, the organisational culture does play a role in influencing the whistleblower (Near and Maceli, 1985:6). Research shows that employees who receive a favourable organisational response towards people raising concerns internally are more likely to blow the whistle. Rather than being seen as "rats" or "sneaks", the organisation perceives them as being loyal to organisational goals (Tshahuridu and Vanderckhove, 2008:109). Such a response reinforces the organisation's professed values, thereby recognising the integrity of the organisation.

An organisational culture where ethical values are made "real" should have the following management systems in place (Van Vuuren, 2008:66):

- Communication systems like ethics awareness campaigns, ethics help-lines and safe reporting lines.

- Ethics training initiatives (training in ethics competence for decision making and management of subordinates).
- Induction programmes (ethics orientation for new employees / promotees).
- Human resource recruitment and selection of ethically sensitive individuals.
- Disciplinary processes.
- Establishment of ethics committees that oversee ethics management interventions.
- Appointment of ethics officers / managers to coordinate ethics management initiatives.
- Reporting mechanisms on ethics management performance.

The aforementioned elements is the acid test that management really means what they say about supporting ethical systems, rather than merely paying lip service.

Further, whistleblowing policies can significantly contribute to the effectiveness of codes of conduct in promoting ethical behaviour. It reflects an ultimate standard towards which every employee should strive, requiring an acknowledgement by the entire organisation of the trust placed in every employee to uphold the highest standard of ethics. The contingency model of Ferrel and Gresham (1985 in Hassink, de Vries and Bollen, 2007:29) suggests that by implementing a comprehensive ethical management system, the highest level of ethical standards can be achieved. Therefore, creating an environment of enforcement can have a significant impact on potential whistleblowers.

In addition to enforcement in maintaining such an organisational culture, Hellreigel, Slocum and Woodman (1998:551) recommend powerful reinforcers as including the following:

- Paying attention and commenting on processes and behaviours by management sends strong messages about what is important and expected.
- Organisational reaction to incidents and the manner in which it is dealt with can reinforce the existing culture or bring out new values to improve the culture.
- Role modelling by management communicates cultural messages which can reinforce the dominant culture.
- The reward and punishment system conveys to employees the priorities and values of the organisation.

The reinforcers can serve to promote responsibility by the organisation to take action against unethical conduct. This will not only increase the probability that employees will behave ethically, but also motivate potential whistleblowers to disclose unethical practices.

While the implementation of the systems identified by Van Vuuren (2008:68), Hassink et al. (2009:29) and Hellreigel et al. (1998:551) is important, the culture of ethics has to be maintained in a sustainable way. Such sustainability is dependent to a large extent on how the organisation can prove that it's actions are fair, accountable, responsible and transparent. This requires zero tolerance to corrupt practices, thereby contributing to higher levels of trust, loyalty, honesty, fairness and confidence in the organisation. Employees in such an environment would not perceive retaliation from the organisation as a response to whistleblowing.

Rainborn and Payne (1990:887) further argue that if an organisation has accepted a basic level of conduct which is currently attainable as it's goal, then punishment for deviation from this level should be extremely harsh since this has been accepted as the lowest acceptable level of conduct. Here, this is evidence of reciprocity for enacting the value system of the organisation. This is reinforced by Hoivik's (2002:4) view that organisational systems can either impede or sustain ethical competence. Evidence by the Ethics Resource Centre (2007:165) shows that 61 percent of employees report misconduct they observe in organisations with comprehensive ethics programmes. However, while such programmes are important contributors for encouraging whistleblowing, it is not sufficient to encourage employees to blow the whistle (Vadera et al., 2009:566). It has to be complemented by a strong organisational ethical culture, as shown in the study by the Ethics Resource Centre (2007:169) that in organisations with a strong ethical culture and minimal organisational programmes, only 35 percent of the employees report wrongdoing, whereas in organisations with a strong ethical culture and well implemented ethics programmes, 65 percent of employees report observed misconduct. Such programmes underpinning the dominant organisational culture ensure awareness, compliance, enforceability, accountability and responsibility. Therefore, it can be suggested that the exhibition of organisational ethical values can increase employees' willingness to report wrongdoing.

It can be further argued that whistleblowing seems to be higher in organisations that value whistleblowing and in those in which the whistleblower perceives a higher congruence between personal and organisational values (Miceli and Near, 1992:180). Evidence suggests whistleblowers whose values regarding right and wrong are congruent with those of the organisation are less likely to be retaliated against (Miceli and Near, 1992:152). Similarly, potential whistleblowers may perceive high costs, like retaliation in organisations where there is incongruence between personal values and organisational values.

Embracing, nurturing and protecting whistleblowers can be influential in advancing organisational interests and creating a culture where individuals are free to exercise critical questioning. Literature commonly point to advocating organisational cultures that support whistleblowing if there is evidence that the organisation is conducting its affairs in a manner that is unethical (Shahinpoor and Matt, 2007:46). Such an approach contributes to a culture where values like honesty and loyalty are reciprocated by management and the whistle blower, since both parties are driven by the search for truth.

Conclusion

Whistleblowing is important in organisations because the rate of whistleblowing is increasing and the legal environment is less supportive of organisations that

retaliate against whistleblowers. Organisations that support human dignity, value the individual, and respect the organisational life are less likely to retaliate against whistleblowers. By enacting organisational values rather than merely paying lip service, employees perceive an organisation that values loyalty, honesty and integrity. Similarly, organisational leadership can recognise whistleblowers as ethical employees who ought to be protected.

The article contributes to the literature by explaining how a dominant value based organisational culture can motivate whistleblowers actions, since there are low perceptions of retaliation in such an organisational culture. It is demonstrated that a strong ethical culture plays in important role in diminishing potential whistleblowers fear of the cost of whistleblowing. Additionally, the article illustrates how organisations need to make their commitment to eradicate corrupt practices a "living" testimony by institutionalising ethical systems.

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LEADERSHIP STRUCTURE AND FIRM PERFORMANCE BY USING CORRECT PROXIES AND ORGANIZATIONAL THEORIES

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Abstract

Leadership structure is an important determinant in affecting the value of a firm in developing and developed markets. There is a lack of consensus among the researchers on the leadership structure and the value of a firm (LSVF) relationship. Furthermore, the correct proxy to value a firm has not been used to test its relationship with the mode of leadership in these financial markets. The current study contributes to the literature related to the LSVF by using a correct proxy to value a firm and interpreting the results of the model in the light of important management theories. The tests for incremental regression and correlation are also performed. By using the data for 120 listed companies, the result for the study suggests that dual leadership structure improves the value of a firm supporting the stewardship theory in the selected markets. Finally, results related to the role of control variables suggest that lower debt, efficient regulatory authority, optimal utilization of assets and informational efficiency have a value adding impact on the value for shareholders in these markets. The results for the study provide new insights into the LSVF relationship and are of value to academics and policy makers in the selected markets.

Keywords: Corporate Governance, Board Size, Shareholders' Value, Regulatory Authority and CEO Duality

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Introduction

The literature related to the role of CEO duality in affecting the value of a firm in developed and developing markets is inconclusive. Stoeberl and Sherony (1985), Donaldson (1990), Alexander et al. (1993), Donaldson and Davis (1991, 1994), Coles et al. (2001) and Haniffa and Cooke (2002) find a positive relationship between dual leadership structure and the value of a firm. Similarly, Brickley et al. (1997) by using an accounting measure for the firms' performance find a positive relationship between dual leadership structure and shareholders' value. Furthermore, Tian and Lau (2001) and Peng et al. (2007) perform their research on the role of leadership structure and the value of a firm on Chinese companies and find a positive relationship between dual leadership structure and the value of a firm. Finally, Cornett et al. (2008) in their study conducted on the LSVF relationship in the developed market find a positive relationship between dual leadership structure and the value of a firm.

On the contrary, Fama and Jensen (1983), Rechner and Dalton (1991), White and lngrassia (1992), Pi and Timme (1993), Jensen (1993: 36), Boyd (1994) and Chen et al. (2005) find a negative relationship between dual leadership structure and the value of a firm. Baliga et al. (1996), Daily and Dalton (1997), Dalton et al. (1998),

Rhoades et al. (2001), Dulewicz and Herbert (2004), Kang and Zardkoohi (2005) and Schmid and Zimmermann (2008) (in their study on Swiss firms) do not find any significant role of the leadership structure in affecting the value of a firm.

In addition to the diverging views, the critical analysis of the existing literature is as follows. Fosberg and Nelson (1999) in their study on the role of CEO duality in affecting a firm performance use market based measure of firms' performance (market to book value ratio). Their finding suggests that dual leadership structure does not bring any significant change in the value of a firm. Similarly, Al Farooque et al. (2007) use similar measures (e.g. market to book value ratio) to perform their study on the LSVF relationship in the developing (Bangladeshi) market, and Elsayed (2007) uses return on total assets in his study on the LSVF relationship of firms listed in the Egyptian Stock market. Both find an insignificant role of dual leadership structure in affecting the value of a firm in these markets.

Bliss et al. (2007) conduct their study on the relationship between the CEO duality and the audit fees in Malaysian firms. Similarly, Kakabadse et al. (2006) perform the study on the chairman-CEO relationship and its impact on the effectiveness of the board. These researchers have not performed their studies on the role

of leadership structure in affecting the value of a firm in combined markets.

Palmon and Wald (2002) undertake their study on the role of leadership structure in affecting the value of a firm, but have used accounting measures of firms' profitability. Finally, Lam and Lee (2008) perform their study on the LSVF relationship on companies listed at Hong Kong Securities Exchange. They have used return on assets (ROA) and return on equity (ROE) as dependent variables to test their relationship with the type of leadership structure in this market.

The abovementioned discussion suggests inconclusive results on the LSVF relationship in affecting the value of a firm. Furthermore, the correct proxy for firms' performance (Tobin's Q) has not been used in the previous studies.

This paper bridges the gap in the literature by using the correct proxy to value a firm for the firms of developing and developed markets. The result shows that the CEO duality improves shareholders' value in these markets supporting stewardship theory. The results related to the role of control variables suggest that an efficient regulatory authority, lower debt, informational efficiency and efficient utilization of assets improve the value of a firm in these markets.

Following the introduction, the rest of the paper is structured as follows. Section 2 presents the literature review. Section 3 discusses the hypothesis development. Similarly, Section 4 presents the methodology of the study. Section 5 explains the results for the model and finally, conclusion is presented in Section 6.

Literature Review

This section comprises of the discussion on the characteristics of the selected markets and explanation about the role of external and internal corporate governance instruments. The details related to the characteristics of developed and developing financial markets are as follows. The pillars of developed markets are efficient stock market, powerful regulatory framework, diversified portfolios, prudent board, lower debt and liquid financial market (Wei, 2003). These characteristics further suggest that managers are an important corporate governance instrument in the developed market. Finally, there is a better governance of agency conflicts between shareholders and managers in this market (Heinrich, 2002).

On the contrary, the important components for foundation of a developing market are as follows. Powerful blockholders, higher debt, undiversified portfolios, infant regulatory authority, inefficient market, pyramidal and cross shareholding and better governance of agency cost between the creditors and managers in this market (Rashid and Islam, 2008).

The two main types of markets include developing and developed financial markets. These markets are categorized on the basis of the development of the financial sectors and sophistication of financial instruments used in these economies to handle risk and provide returns to shareholders. The developed financial market uses better instruments to hedge the portfolios and

protect the rights of shareholders compared to the developing financial market (Hunt and Terry, 2005). Australia is considered to be the developed market as strong regulatory law holds, protecting the interests of shareholders in this market. On the contrary, the Malaysian market uses less sophisticated instruments and has higher level of imperfections, which makes it qualify as a developing market.

The two main types of corporate governance instruments include external and internal governance mechanisms. The external regulatory mechanisms are majority shareholders and regulatory authority in the market (Rashid and Islam, 2009). The majority shareholders perform a constructive role in affecting the value of a firm in the developing country as they reduce the free riding from the market (Grossman and Hart, 1982). Free riding problem occurs when some of the shareholders avoid paying any cost in monitoring the management of a firm. The literature also suggests that the majority shareholders have played a vital role in removing the poor performing board of directors. This led to the improved value of a firm as the board started doing its fiduciary duties in a proper manner (Yafeh and Yosha, 2003).

Regulatory authorities in the developed financial market are efficient and powerful. Black (2001) suggests that the regulatory authority in the developed market reduces tunneling (over and under investment of the free cash flow). The judiciary in the developed market is also well-educated and is aware about the corporate crimes. The effective regulatory regime reduces the imperfect contracting in the market (Nenova, 2003). The firm also incorporates democratic provisions (investors friendly) in the presence of an efficient regulatory regime in a financial system (Gompers et al. 2003).

Similar to the role of external corporate governance instruments, the internal (firms' specific) governance mechanisms such as board, board size, debt and equity structure, efficient utilization of assets, informational efficiency, CEO and the chairman affect the value of a firm. The board performs an important function of monitoring the firms' management (Linck et al., 2008). It also plays a vital role in strategic decision making related to the firm and in controlling the actions of a CEO. The bigger board has higher level of expertise and makes better and realistic decisions by taking into account the available information (Coles et al., 2008). Furthermore, it is difficult for the CEO to dominate the bigger board and earn private benefits at an expense of shareholders' value.

Debt and equity structure has an important implication in affecting the value of a firm. Higher debt can reduce the free cash flow at the discretion of managers. Higher debt is only valuable in the presence of the concentrated shareholding (blockholders) as these blockholders act as a better debt monitor in the market. The concentrated shareholding is the hall-mark of the developing market which implies that higher debt in this market improves the value of a firm (Berglof, 1997).

In contrast to the positive role of the blockholders, there are additional imperfections in the developing market. These include inflation, rudimentary infrastructure, incomplete contracting, illiteracy,

lawlessness and corruption (Ahunwan, 2003). These factors reduce the complementary power of the blockholders to improve the marginal benefits of higher debt in this market.

There exists a dispersed shareholding in the developed market. This improves the marginal benefits of lower debt endorsing that a lower debt improves the value for shareholders in this market (Berglof, 1997).

Similar to the implications of the abovementioned instruments, efficient utilization of assets and informational efficiency play a pivotal role in implementing corporate governance. The efficient utilization of assets in the market leads to a lack of under and over utilization of the capital of a firm. This suggests that the value of a firm is improved as the resources are utilized optimally. Finally, the informational efficiency in the market represents the incorporation of public and private information in the share prices (Copeland et al., 2005). This reduces the information asymmetry and improves the firms' performance in the market.

Chief executive officer (CEO) heads the operations of a firm and makes strategic, operational and financial decisions. He serves as a monitor for other executives of an organization. CEO plays an important role in affecting the value of a firm by incorporating the corporate governance provisions in the firm (Rashid and Islam, 2008). The board of directors can hire and fire the CEO. The literature on corporate governance suggests that the turnover of a CEO has a negative relationship with shareholders' value as shareholders lose confidence in the firm. The CEO is hired on a short term contract (normally 3 years), which makes him concerned about the firms' performance during his own tenure. This short sightedness limits the shares to represent the true performance of a firm (Bhagat and Jefferis, 2002).

Similar to the CEO, the chairman holds a significant position in an organization. He heads all the committees and presides over the important meetings related to the issues in a firm. The chairman also monitors the performance of the CEO and plays a major role in renewing his contract (Kakabadse et al., 2006). He ensures the delegation of powers by the board to the executive management of a firm. Furthermore, the chairman enables the management to encourage the free flow of public and private information in a market. He should guide the board of directors to make critical decisions and maintain an optimal number of inside and outside directors in a board. Finally, the chairman should listen to shareholders' problems and provide an effective leadership to create value for them.

Hypothesis Development

CEO duality refers to the type of leadership structure in which a single person holds both the important positions of the CEO and the chairman in a firm. There are two theories related to the role of leadership structure in affecting the value of a firm. The first is agency theory and suggests that a single person keeping both these positions deteriorates the value of a firm as the independence of board is harmed (White and Ingrassia, 1992).

Furthermore, Fama and Jensen (1983) argue that dual leadership structure is favorable for the under-

performing CEO as it makes difficult for the board to discipline a person who is also the chairman of a board. Dual leadership structure provides a negative impression to investors as this mode is against corporate governance principles. In dual leadership structure, agency cost between creditors and managers is not handled properly. This leadership structure also leads to a higher agency cost in the market making firms less attractive for investors (Rechner and Dalton, 1991). The corporate governance principles suggest that the CEO should be responsible for examining the policies of a company and monitoring the management of a firm. Similarly, the chairman should monitor and evaluate the performance of a CEO (Jensen, 1993: 36). The board members can also look after interests of the chairman in creating the value for shareholders.

The second is stewardship theory and suggests that managers' interests do not diverge with shareholders because they have acquired self actualization stage (Donaldson and Davis, 1994). Executive managers do not exploit shareholders and value job satisfaction and professional excellence for the advancement in their profession. Furthermore, these managers are less motivated by financial compared to the non financial incentives mentioned above. The executives of the firm (CEOs') are more concerned about their relationship with the employer and recognition at the workplace. The better performance of these executives will also enable them to reap future pension and other fringe benefits which make them inclined to improve the performance of a firm.

In case of dual leadership, the CEO being the chairman depicts a unified and solid impression as he is more knowledgeable about the operations of a firm (Lam and Lee, 2008). The speedy strategic and financial decisions by an independent CEO reduce the financial cost and improve the value of a firm. A single person performing both the tasks of executives (CEO and chairman) is cost effective as the firm pays salaries, bonuses and incentives to a single person.

The regulatory authorities can link the incentives to the CEO with his performance in dual leadership structure to safeguard the rights of shareholders (Bhagat and Jefferis, 2002). This will improve the value of a firm in developing and developed financial markets. The majority shareholders are better monitors of the management of a firm in the developing financial market (Kaplan and Minton, 1994). The independent CEO can be disciplined by the blockholders in this market. Similarly, the efficient regulatory authority can also make stringent regulations to control the actions of a CEO in the developed market. This discussion leads to the following hypothesis.

H1: CEO duality improves the value of a firm in the selected financial markets.

Conceptual Framework

Figure 1 (conceptual framework) suggests that the external governance instruments such as regulatory authority and blockholders can discipline the CEO in a market. This suggests a stewardship behavior of the CEO leading to the incorporation of corporate governance provisions in a firm.

Regulatory authority and Majority shareholders	→	Independent CEO	→	Corporate Governance Provisions
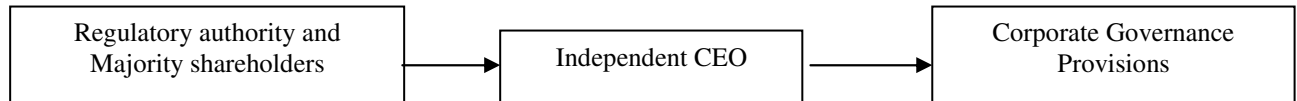
Figure 1. Conceptual framework for the study

Methodology

The data is collected for this study by using the secondary method of data collection. The variables in the model for the LSVF relationship consist of internal and external corporate governance instruments and control variables. The internal corporate governance instruments consist of a board size, CEO duality and the role of debt and equity structure. The external corporate governance instrument in this study is the role of judicial and regulatory authority efficiency in affecting the value of a firm. Finally, the control variables are price to book value ratio and return on total assets.

The data set for internal corporate governance instruments is collected from the OSIRIS database and is crossed checked against the information available at the websites of the individual firms. Furthermore, the data for the external regulatory regime is collected from the World Bank website. Finally, the data for control variables is collected from the books of Australian and Malaysian Securities Exchanges. The data collection was performed by using the stratified random sampling technique. This involves observing characteristics of the companies in the market by generalizing the properties of sample companies.

4.1 Variables for the Study

The first variable used in this study is the debt and equity (gearing) ratio. This variable shows us the amount of debt used in the firms of developing and developed financial markets. Due to the presence of additional imperfections in the developing market and absence of majority shareholders in the developed market, we expect a negative relationship between the higher debt and the value of a firm in these markets.

The second variable discussed in this section is the role of board size in affecting firms' value. The board size is measured by counting the number of directors on the board (Rashid and Islam, 2009). The positive relationship between the board size and the value of a firm shows that agency cost among the board members does not increase when an additional member joins the board. Furthermore, there are healthy divergences among the board members as they (board members) reduce the agency conflicts from the firm (Kyereboah-Coleman and Biekpe, 2005). We expect a positive relationship between the variable and the value of the firm in the selected markets.

The next variable used in the model for the LSVF relationship is the role of the CEO duality. The variable is measured by using the dummy variable (Lam and Lee, 2008). The value for the variable is 1 when a single person holds the positions of the CEO and the chairman. On the contrary, the value for the variable is 0 when these positions are distributed between the two separate persons. The relationship between dual leadership and the value of a firm is expected to be positive in the selected financial markets (Haniffa and Cooke, 2002).

The role of external corporate governance mechanism in the current study is tested by calculating the regulatory and judiciary index. The variable (log procedures) is constructed by taking into account the cost and time involved in the settlement of corporate disputes in a court. The higher value on the index shows an inefficient judicial and regulatory system leading to the poor performance of a firm. We expect a negative relationship between the regulatory index and the value of a firm in the selected markets (Bebchuk et al., 2004).

The control variables in this study are return on total assets and price to book value ratio. Return on total assets (ROTA) shows the efficiency of assets in creating shareholders' value. The variable is also used by Beiner and Schmid (2005) in their studies on corporate governance and the value of a firm (CGVF). ROTA is directly extracted from the financial statements of the listed firms in the selected markets. We expect a positive relationship between the value of a firm and return on total assets.

The second control variable used in this study is price to book value ratio (PBVR). The variable is calculated by dividing the current closing price of share by its book value. The higher value of the variable shows that market is informational efficient and investors are confident in making investments in firms. We expect a positive relationship between PBVR and the value of a firm in the selected markets.

The dependent variable used in this study is the proxy for Tobin's Q. This proxy is calculated by adding market capitalization and total assets. The shareholders' fund is subtracted from this added value. Finally, the obtained value is divided by total assets to get the proxy for Tobin's Q. Sarkar and Sarkar (2000) argue that it is difficult to find the replacement value for institutional debt in the developing financial system due to the market imperfections. This value is a better proxy for the firms' performance as the replacement value for institutional debt is not used in the formula for its calculation as used by previous researchers.

Table 1: Econometric Results for the Model

Variables	Combined Model
Constant	0.54
	(3.09)**
Log Board Size	0.20
	(1.25)
CEO Duality	0.14
	(2.72)**
Gearing	-0.07
	(-4.36)**
Price to Book Value Ratio	49.03
	(13.56)**
Return on Total Assets	0.93
	(1.78)*
Log Procedures	-0.15
	(-2.31)**
R-squared	0.77
Adjusted R-squared	0.77
Mean Dependent Variable	1.42
F-statistic	(276.93)**

Notes: The values of the coefficients are in the first row.

Below are the values for T statistics in parenthesis.

Total number of observation for combined model = 480.

* Represents the significance of a variable at 10% significance level.

** Represents the significance of a variable at 5% significance level.

Source. Authors' estimates.

4.2 Multifactor Model

A multifactor model will be used in this study to test the role of CEO duality and other relevant variables in affecting the value of a firm. This model is presented as follows. Tobin's Q = f (CEO duality, board size, debt and equity ratio (Gr), regulatory authority efficiency (procedures), price to book value ratio and return on total assets).

The abovementioned model will enable us to suggest the relevance of business and management theories in explaining CEO duality and the value of a firm relationship in the selected markets.

Econometric Results

Models with alternate specifications and different functional forms are tried and the model with the best functional form and strong diagnostics is selected for the study (Gujarati, 2003). The selected model shows that 77% variation in the dependent variable is explained by the independent variables of the model. The 23% variation remains unexplained by these independent variables (price to book value ratio, return on total assets, CEO duality, board size, debt and equity structure and regulatory authority efficiency). The mean value for the dependent variable (Tobin's Q) is 1.42, which shows that firms of the selected markets are healthy and create value for shareholders. The value for the F statistic is 276.93 and is significant, which endorses the stability and reliability of the model (Maddala, 2001). The results are presented in Table 1.

The independent variables are also treated with the White Diagonal treatment to reduce heteroscedasticity (variable variance of the error term) in the selected model. In addition, the test to detect multicollinearity in the model for LSVF relationship was performed by calculating the variance inflation factor (VIF) for the individual independent variables. The values for the variance inflation factor range from 1.06 to 1.35 for gearing ratio and procedures (regulatory authority efficiency) respectively, confirming the absence of multicollinearity in the model. The results are presented in Table 2 below.

Table 2: Values for Variance Inflation Factor for Combined Markets

Variables	Variance Inflation Factor
Gearing	1.06
Procedures	1.35
CEO Duality	1.14
Return on Total Asset	1.19
Board Size	1.09
Price to Book Value Ratio	1.16

Source. Authors' estimates.

5.1 Incremental Regression

The test for incremental regression analysis was performed to confirm the importance of the independent variables in affecting the value of firm. This test was performed by removing the individual independent variables and capturing the decrease in the value for the R-squared. The removal of price to book value ratio (PBVR) has caused the highest change in the value for the R-squared as this value was reduced from 77% to 15%. The result shows that informational efficiency is the most important factor in affecting the value of a firm in the model. The result is presented in Table 3 below.

Table 3: Results of Incremental Regression

Models	Combined
R-squared (original)	0.77
R-squared (after the removal)	0.15

Source. Authors' estimates.

The importance of PBVR is also confirmed by the result of correlation analysis. Among all the variables of the model, price to book value ratio has highest correlation (0.87) with the value of a firm (Tobin's Q) which shows that informational efficiency is an important component in affecting the value of a firm in the selected markets. On the contrary, return on total assets has a lowest correlation with price to book value ratio (0.33) which shows that the optimal utilization of assets do not significantly improve the informational efficiency in these markets. These result are presented in Table 4 below.

Table 4: Factor Analysis: Results about the Highly Correlated Variables

Variables of Cross-market Analysis	Correlation Coefficient
PBVR and ROTA	0.33
TQ and AC	0.35
TQ and PB	0.87
MC and CF	0.49
AC and Log Pro	0.34

Source. Authors' estimates.

5.2 Explanation of Results

The result related to the role of CEO duality in affecting the firms' performance shows a positive relationship between dual leadership structure and the value of a firm. The result is significant at a 5% significance level with the value of coefficient as 0.14. This result suggests that the independent CEO improves the value of a firm by protecting the rights of shareholders, accepting our hypothesis (H1) for the study. The external regulatory regime in these markets is efficient which reduces the agency cost between shareholders and the CEO. The majority shareholders play a positive role by disciplining the independent CEO in the selected markets. Similarly, the regulatory control in the developed market pushes the CEO to make democratic decisions.

There is a lower level of agency cost due to lack of conflicts between the CEO and the chairman in these firms. The result shows that the CEO works as a steward due to his unique skills and adds value to shareholders in these markets (Donaldson and Davis (1991, 1994); Brickley et al. (1997); Haniffa and Cooke (2002) and Cornett et al. (2008)). The result also shows that keeping a single executive is cost effective for organizations of the selected markets.

The negative role of debt in affecting the value of a firm is endorsed at 5% significance level with the value of coefficient as -0.07. The result supports the findings by Rajan and Zingales (1995), Zwiebel (1996) and Chang and Mansor (2005) as higher debt in the selected markets does not improve shareholders' value by reducing the free cash flow problem. The result suggests that additional imperfections in the developing market reduce the complementary strength of the majority shareholders to improve the marginal benefits of higher debt in this market. Similarly, the absence of external monitors (blockholders) in the developed market nullifies the constructive role of debt due to the lack of imperfections in this market. These mechanisms are explanations about the negative relationship between the gearing ratio and the value of a firm in the selected markets.

There is a lack of significant relationship between the board size and the value of a firm in developing and developed markets.

The next relationship tested in this study is related to the role of regulatory authority in affecting the value of a firm. The result shows a negative (positive) relationship between an inefficient (efficient) regulatory authority and firms' performance. This finding shows that an efficient contract law improves the value of a firm by protecting shareholders' rights (Rashid and Islam, 2009). The result

proves that the effective regulatory authority adds to shareholders' benefits by lowering the monitoring cost paid by them in disciplining the management.

The result related to the role of price to book value ratio in affecting the value of a firm shows that the correct valuation of assets improves firms' performance at a 5% significance level with the value of coefficient as 49.03. This value is highest among the coefficients of all the variables showing its relative importance in the model.

The final result shows that there is a positive relationship between return on total assets and the value of a firm. This result endorses that the efficient and optimal utilization of assets improves firms' performance in the selected markets. These results are presented in Table 1.

Conclusion

The study has contributed in the literature by revisiting the leadership structure (CEO duality) and the value of a firm relationship in developing and developed markets by using a correct proxy to value a firm (Tobin's Q). The results of the study are interpreted by taking into account the characteristics of the selected markets and in the light of important business and management theories. The results suggest that an independent CEO works as a steward and improves the performance of a firm in these markets implying that there is a lack of agency cost between shareholders and the CEO in the selected markets. The firms of these markets should use dual leadership structure and relate the incentives for the CEO with the performance of a firm to further improve shareholders' value. Similarly, efficient regulatory framework reduces the information asymmetry in the selected markets. The regulatory control should be strengthened to further reduce the agency cost in these markets. On the contrary, higher debt deteriorates the value of a firm due to a poor management of conflicts between the creditors and managers in the selected markets. The results also show that the efficient utilization of assets and informational efficiency improve shareholders' value in these markets. The tests for incremental regression and correlation highlight the importance of informational efficiency in the selected markets. The limitation of the study suggests that the role of CEO duality in affecting shareholders' value in boom and recession in the economy can provide us with the different nature of relationship and with alternate policy implications.

Acknowledgement

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