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Journal Corporate Ownership & Control is published four times a year, in September-November, December-February, March-May and June-August, by Publishing House "Virtus Interpress", Kirova Str. 146/1, office 20, Sumy, 40021, Ukraine.

Information for subscribers: New orders requests should be addressed to the Editor by e-mail. See the section "Subscription details".

Back issues: Single issues are available from the Editor. Details, including prices, are available upon request.

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Corporate Ownership & Control

ISSN 1727-9232 (printed version)
1810-0368 (CD version)
1810-3057 (online version)

Certificate № 7881

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КОРПОРАТИВНАЯ СОБСТВЕННОСТЬ И КОНТРОЛЬ

Почтовый адрес редакции:

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Журнал "Корпоративная собственность и контроль" издается четыре раза в год в сентябре, декабре, марте, июне издательским домом Виртус Интерпресс, ул. Кирова 146/1, г. Сумы, 40021, Украина.

Информация для подписчиков: заказ на подписку следует адресовать Редактору журнала по электронной почте.

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Корпоративная собственность и контроль

ISSN 1727-9232 (печатная версия)
1810-0368 (версия на компакт-диске)
1810-3057 (электронная версия)

Свидетельство КВ 7881 от 11.09.2003 г.

Виртус Интерпресс. Права защищены.

CORPORATE OWNERSHIP & CONTROL

Volume 9, Issue 1, 2011, Continued - 1

CONTENTS

THE POSSIBILITIES OF ADOPTING IAS/IFRS IN VIETNAM: AN ANALYSIS

Nguyen Huu Cuong*

Abstract

It is universally acknowledged that the matter of adoption and its similar process (harmonisation or convergence) has provoked extensively heated debate in the accounting literature, both from advocates and from opponents. Nonetheless, the accounting literature lacks research into the field of Vietnamese accounting, in general, and the nature of Vietnamese accounting systems as well as Vietnamese Accounting Standards (VAS), in particular. This paper in-depth analyses the possibility of adopting IAS/IFRS in Vietnam by critical examining findings of the accounting literature on three aspects: factors influencing the development of accounting practices and accounting standards, factors affecting the adoption of IAS/IFRS by developing countries, and arguments for and against adoption of IAS/IFRS. Based on matching findings in the latent literature, especially those relating to contextual factors that have an impact on adopting IAS/IFRS, with the current situation of Vietnam, this paper proposes that adoption of IAS/IFRS with selection is practically possible in Vietnam.

Keywords: Vietnamese Accounting Standards, Accounting Development, Adopting International Accounting Standards, Adopting IAS, Adopting IFRS, Accounting in Vietnam

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1. Introduction

The Socialist Republic of Vietnam, a developing country[1], is approximately 1,650 kilometres long and has a land area of 329,560 square kilometres. The country shares its border with the People's Republic of China, Cambodia, and the Lao People's Democratic Republic. The population of Vietnam (as estimated in July, 2007) is just over 85 million and its official language is Vietnamese, although English has been increasingly favoured as a second language (Central Intelligence Agency 2007). Its economic growth is impressive, though its gross domestic product per capita – as estimated in 2006 – is only US$3,100, ranked one hundred fifty seventh in the world. The country has a well-educated population with the literacy rate of over 90 per cent (Central Intelligence Agency 2007; Narayan & Godden 2000).

In terms of the legal system, according to the 1992 Constitution, the National Assembly is legally recognised as the highest representative organ of the people and the highest organ of State power of the country. Accordingly, the National Assembly has obligations to make or amend laws. More specifically, the authority's order of Vietnamese Laws is as follows: laws (which are passed by the National Assembly), ordinances (which are passed and issued by the Standing Committee), decrees (which are issued by the Prime Minister), and then decisions as well as circulars (which are issued by Ministers). As regard Vietnamese accounting policies and standards, the legal enforcement is in the hierarchical order, from law on accounting[2], to decrees (providing detailed regulations and guidelines for implementation of the accounting law), and to decisions and then circulars (which are issued and promulgated by the Minister of Finance). Not surprisingly, Vietnamese Accounting Standards (VAS) and Vietnamese Standards on Auditing (VSA) are issued and promulgated by the Minister of Finance, in the forms of decisions, and therefore those

[1] From the International Monetary Fund standpoint, a developing country refers to the bottom group in the hierarchy of advanced economies, countries in transition, and developing countries. Further details of such classifications can be explored at the International Monetary Fund website (see The International Monetary Fund 2007). Chand (2005, p.213) also offers further discussion on the term 'developing countries'.

[2] Law on accounting was passed by Legislature IX of the National Assembly of the Socialist Republic of Vietnam at its 3rd section on 17th June 2003. Vietnamese law, decrees, as well as circulars or decisions on accounting, can be freely downloaded from the Ministry of Finance of Vietnam's website at http://www.mof.gov.vn/DefaultE.aspx?tabid=551. However, it is important to note that not all of the regulations on accounting were translated into English.

accounting rules automatically become mandatory for accounting practices in Vietnam. This issue will be discussed further in the next section of this paper.

Although attempts to make IAS/IFRS fully applicable for accounting practices all over the world are pursued by the International Accounting Standard Boards (IASB), the issues of convergence, harmonisation, and adoption of IAS/IFRS[3] have proved spirited debates, not only by academia, but also by accounting practitioners and regulatory bodies. In the case of less developed countries, this debate has become more intense, given that certain influential factors galvanising the momentum for a single set of accounting standards are absent or not strong enough. The phenomena can be understood by clarifying paradigms of accounting harmonisation. According to Saudagaran and Diga (1997a), the IASB, as an advocate of the global paradigm of accounting harmonisation, considers its role as a formulating and promoting body of an internationally acceptable accounting standards set, while the regional paradigm holders perceive accounting harmonisation as a process occurring among geographically proximate countries.

In the case of Vietnam, Narayan et al. (2000) comment that IASs are informally used for private sector reporting. Additionally, in the report providing an assessment of Vietnam's corporate governance practices using the OECD Corporate Governance Principles as a benchmark, World Bank (2006) states that VAS are consistent with IFRS and the enforcement mechanisms, as was noted earlier, by laws, decrees, and circulars of Vietnam. Currently, Vietnamese laws, such as law on investment law on enterprises and commercial law, require enterprises' compliance with VAS, in particular, and Vietnamese accounting policies, in general (The National Assembly 2005a; 2005b; 2005c). According to the World Bank (2006), enterprises in Vietnam, however, insufficiently complied with accounting standards, and their disclosures are limited and untimely.

At the time of writing this paper, there is little or no research that thoroughly examines the nature of Vietnamese accounting systems, Vietnamese Accounting Standards (VAS) and the possibility that Vietnam will harmonise or adopt IAS. More generally, the field of Vietnamese accounting is almost non-existent in the international accounting literature. Despite this fact, some scholars firmly believe the possibility of VAS harmonising with the accounting standards of the other countries in the regions (specifically ones belonging to the Association of South East Asian Nations), and then with IAS, is quite likely and not far from reality (Phung 2006). Given this, this paper attempts to provide qualitative analysis that enables conclusion to be drawn on whether it is possible for Vietnam to adopt IAS/IFRS or harmonise VAS with IAS/IFRS.

This paper is structured as follows. Section two is a literature review that critically examines findings of the accounting literature on three aspects. The first one is a discussion of factors that have an effect on the development of accounting practices and accounting standards. The second is the clarification of factors that have an influence on the adoption of IAS/IFRS. The third are arguments for and against the adoption of IAS/IFRS. Section three discusses the likelihood of the adoption of IAS/IFRS in Vietnam based on matching findings in the latent literature, especially those relating to contextual factors that have an impact on adopting IAS/IFRS, with the current situation of Vietnam. The paper concludes with section four.

2. Literature review

2.1. Factors influencing the development of accounting practices and accounting standards

It is not difficult to observe the variations in financial reporting practices and accounting standards from country to country that result from differences in the nature of the country's legal system, the prevalence of finance providers, the influence of taxation, and the strength of the accountancy profession (Narayan et al. 2000). From an international accounting perspective, Nobes and Parker (1995) discusses various factors leading to international differences in accounting, such as legal systems, providers of finance, taxation, the accountancy profession, inflation, accounting theory, and accidents. In the same vein, Mueller et al. (1997) outline variables that shape a country's accounting development, including the relationship between business and capital providers, the political and economic connection with other countries, the legal system, the levels of inflation, the culture, and other factors (such as size and complexity of business enterprises, sophistication of management and financial community, and general levels of education). Nobes (1998) summarises a long list of proposed reasons for international accounting differences that consist of the nature of business ownership and financing systems, colonial inheritance, invasions, taxation, inflation, level of education, age and size of accountancy profession, stage of economic development, legal systems, culture, history, geography, language, influence of theory, political systems, social climate, religion, and accidents. Most of these factors were regarded as antecedents of accounting standards by Pagiavlas (2003). This section is devoted to outlining the main factors that have been considered or proved to have

[3] Though there are differences in concepts of convergence, harmonization, and adoption of IAS/IFRS, this paper uses these concepts with the meaning that countries' accounting standards have moved towards IAS/IFRS. Ali (2005) provides detailed discussions on the concept of convergence, harmonization, and adoption of IAS/IFRS.

been associated with the accounting practices[4] and the development of accounting standards in the accounting literature.

The accounting literature witnesses a number of studies discussing the influence of culture on accounting practices. In this context, it is worth noting that research into the relation between a country's culture, in broad terms, and its financial reporting practices is deemed as of particular relevance with the assertion of the boundary of financial reporting models and practices, as well as behaviours influenced by cultural factors on accounting contexts (Doupnik & Tsakumis 2004). The research of Gray (1988) is universally recognised as a pioneering one in this field of research. Deriving from a reviewing of accounting literature and practices, Gray (1988) defines four accounting values: professionalism verus statutory control, uniformity versus flexibility, conservatism versus optimism, and secrecy versus transparency. He proposed, without conducting a test, that these accounting values of a country would be directly linked to its societal cultural values. Subsequently, a number of studies have been conducted to empirically test his theory of cultural relevance[5].

Interestingly, the mechanism in which culture results in accounting differences is not obvious, as noted in Nobes (1998). Hence, it is reasonable to treat culture as the background factor that leads to more direct influential factors on accounting differences. More specifically, for a country with a strong indigenous culture, Nobes (1998) proposes that the accounting system is for outside shareholders if a strong equity-outsider[6] system exists, or otherwise accounting is for tax and creditors. Whereas, accounting systems, in a country whose culture is still dominated by or heavily influenced from the outside, are imported from the dominating country, regardless of the strength of the local equity-outsider financial system. Additionally, Nobes hypothesises that when a country establishing a strong equity-outsider market, its accounting system will move from accounting for tax and creditors to accounting for the outside shareholders. Apart from these, accounting systems in outsider companies[7] in a country with weak a equity-outsider market are also proposed to move to accounting for outside shareholders. In that case, it is worth noting that Vietnam is the country with strong indigenous culture which can be proved by the fact that Vietnamese culture is cannot assimilated by foreign invaders. However, a strong equity-outsider system has not well existed in Vietnam rather than the close and long-term relationships between Vietnamese companies and their financial providers, especially the government. Holding the viewpoint of Nobes (1998), it appears that Vietnamese accounting systems is not for outside shareholders but for tax and creditors rather.

Examining the extent to which Western accounting systems are relevant to developing countries' accounting systems, Baydoun and Willett (1995) formulate a framework of the relation between measurement levels and accounting disclosure and identify the potential differences in accounting disclosure between Western and developing countries, especially those relating to qualitative information. Their argument appears plausible given that accounting disclosure attempt to provide supplementary information of which someone may be interested. Accordingly, disclosures in Western countries may differ from those in developing countries in terms of the volume of disclosures that can be influenced by cultural forces.

In cross-country research, Cooke and Wallace (1990) provide evidence to support the contention that financial reporting regulations and disclosure practices of developing countries are influenced by a broad range of environmental factors, such as economics, politics, and society. In the European Union setting, Joo and Lang's (1994) study into accounting diversity suggests three primary factors leading to the differences in accounting practices and financial reporting among countries, including the relative importance of the law, the providers of capital, and the linkage between tax and financial reporting. More specifically, the authors argue that the law may have an influence on financial reporting through its directives in accounting policy. Capital providers may have impacts on financial reporting practices; for instance, accounting requirements and practices in countries where capital is mainly financed a few block-holders emphasise the accurate reported profits, but do not emphasise the public reporting of information, whereas accounting practices in countries where companies are largely financed by a relatively small number of banks do focus on conservative accounting. Besides, taxation also has an impact on accounting numbers reported in financial statements because the preparers of financial statements in countries where reported profits are the

[4] Generally, accounting researchers consider accounting practices as being synonymous with financial reporting practices. In essence, this view is explicitly stated in prior research, for instance, Nobes (1998), HassabElnaby et al. (2003).

[5] Critical review of research into the cultural dimension of accounting and the effects of national culture on a country's accounting development and practices is not the purpose of this essay. Further details of research in this area can be explored in Chanchani and MacGregor (1999) and in Doupnik and Tsakumis (2004).

[6] Institutions, such as governments, banks, families, and other companies, that have close and long-term relationships with their investees, are defined as insiders, or otherwise these institutions are defined as outsiders.

[7] An outsider company is defined as a company whose controlling stake is widely spread among a large number of outside equity-holders.

basis for the calculations of taxable income have more incentives to report lower incomes so as to reduce taxes[8]. As regards Vietnamese setting, laws have proved extremely influential in accounting practices, as was earlier noted by the hierarchical order of accounting regulations. Further, the issuance and promulgation of taxation regulations in Vietnam is similar to that of accounting regulations. Apart from tax laws passed by the National Assembly and tax decrees issued by the Prime Minister, the Minister of Finance has authority and responsibility to issue decisions and circulars on tax. The powerful influence of laws as well as close association between tax and accounting policies enhance proper understanding of the strong link between tax and financial reporting practices in Vietnam that is indeed widely regarded as accounting for tax purposes.

In the research into accounting disclosures in the United States and the United Kingdom setting, Frost and Pownall (1994) indicate the effects of disclosure rules as well as regulatory monitoring and enforcement on accounting disclosures. In the United Kingdom, all foreign listed companies are subject to the same periodic reporting rules and the enforcement of disclosure rules are considered as flexible and practitioner-oriented, whilst in the United States disclosure rules vary across three classes of foreign listed companies and disclosure rules are tightly monitored and enforced by the Securities and Exchange Commission. Their research documents that the compliance and frequency of accounting disclosures is greater in the United States than in the United Kingdom.

The research of Ali and Hwang (2000) into the association between country-specific factors and the value relevance of accounting data (measured by earnings and book value of equity) based on data from manufacturing firms from sixteen advanced countries also suggests several factors that have significant impacts on accounting development and practices. Overall, this work indicates that the value relevance is lower in countries where the usefulness of financial reports for investment decision-making of investors or creditors is not a high priority. Firstly, regarding the financial system, the authors find that the value relevance of financial reports is lower for the countries with a bank-oriented system compared to those with a market-oriented system. Secondly, with respect to the accounting standard-setting process, the value relevance is low in countries where accounting standards and accounting financial regulations were formulated by governments for the purpose of satisfying regulatory needs, such as tax measures and law enforcement rather than the needs for investment decision-making of investors and creditors. These findings are opposed to the situation where the accounting standard-setting process is considered more objective as the private sector puts in a great deal of effort. Further, the low value relevance is also reported in countries where financial accounting measurements were significantly influenced by tax policies and in countries whose accounting practices were classified into the Continental model[9]. In short, Ali and Hwang's 2000 study suggests at least four factors that have substantial impacts on the development of accounting practices in terms of financial reporting: the legal system of the country, the close ties between financial accounting practices and taxation purposes, the prevalence of financial provider, and the role of accounting professionals in the accounting standard-setting process. Unanimously, these findings firmly back up the view of Narayan et al. (2000) on the influential factors on financial reporting practices and accounting standards among countries.

HassabElnaby et al. (2003) examine the directional and magnitude impacts that environmental factors – including the economic environment, the political environment, stock market development, and the process of privatising state-owned corporations – have on the development of accounting in the Egyptian setting by using a 37-year data set covering the period from 1961 to 1997. The authors provide empirical evidence as to the positive correlation between accounting development (measured by the development of accounting profession and the system of accounting education) and the level of the economy as well as the political environment. Additionally, this work indicates that the influence that environmental factors have on accounting development differs over time changing from democracy to the economic reform period.

In relation to firm disclosure, employing a representative sample of firms from around forty countries, Hope (2003) conducts an empirical test for the association between the roles of the legal system and the national culture, and the level of annual report disclosures. One of observations is that culture is the conditioning factor for legal origins, based on the evidence that the cultural measures behave differently in common law versus code law countries. The overall conclusion of the paper is that the legal system

[8] In this context, the suggestion of Everson (2005) on the calculus model for owed tax collection is noteworthy. Appling that model, tax dodgers would have to pay the sum of the owed tax, the professional costs, the interests and the penalties instead of only the owed tax and the interest in the old model. Because settlements a tax dodge debt or a tax evasion one is now more expensive, this could discourage and deter taxpayers' non-compliance.

[9] The continental model of financial accounting is usually characterised by a system of accounting that is heavily influenced by the government and accounting methods tend to be closely associated with taxation policy (see, e.g., Deegan 2006; Joos & Lang 1994). See Mueller et al. (1997) for more details about accounting model classification and D'Arcy (2001) for debate on the classification of accounting models.

is the key determinant for the differences in firm disclosures. Additionally, Hope (2003) performs a test on the effects of national culture on firm disclosure, by controlling the legal origin, and finds that national culture is an important factor for explaining the differences in firm disclosures across countries, that is, culture is an important attribute of the financial reporting environment.

2.2. Factors influencing the adoption of IAS/IFRS by developing countries

As discussed earlier, financial reporting practices vary among countries. This reality, coupled with the need to have a common language of business around the world, lead to the creation of the International Accounting Standards Committee (and now its successor, the IASB) (Epstein & Mirza 2006; Narayan et al. 2000). Moreover, Narayan et al. (2000) state that the development of IAS/IFRS aims to reduce national differences in accounting practices, ultimately to assist not only investors and creditors in making better investment decisions, but also governments in formulating more appropriate policies. In particular, a stronger momentum towards adopting IAS/IFRS has been found in countries who have increasingly participated in international organisations, experienced global capital markets, and the growth of multinational enterprises as well (Ali 2005).

Currently, many developing countries have applied IAS/IFRS directly or adopted IAS/IFRS with little amendment as their national accounting standards. From an economic perspective, adopting or harmonising IAS/IFRS is widely regarded as an extremely useful way for developing countries (Narayan et al. 2000, p.21; Nobes & Parker 1995, p.127), provided that these countries do not have a strong capability, whilst the accounting standard-setting process is enormously costly. Additionally, adopting IAS/IFRS is also a means of avoiding the implicit adoption of politically unattractive alternative accounting standards, for instance those of the US or UK. This assertion is especially supported by the cases of developing countries and those having been colonies of imperial powers that tend to be more sensitive to intrusion (Ali 2005). Apart from those specific reasons, facilitating the international connection between domestic and foreign companies, as well as between domestic and international accountancy professions, is a common driving force for adopting IAS/IFRS (Nobes & Parker 1995). In addition to this, the movement towards IAS/IFRS, from the market standpoint, is perceived as a means of achieving the same level of the more developed capital market's financial requirements (Saudagaran & Diga 1997b).

The accounting literature benefits from quite a few empirical research investigating factors that are favourable or unfavourable for the adoption of IAS/IFRS. As affirmed by Zeghal and Mhedhbi (2006), most of the current work concerning the adoption of IAS are normative or descriptive of circumstances of a particular country, and are limited to provide a the country's general nature. Accordingly, empirical research on favourable or unfavourable conditions for the adoption of IAS is almost non-existent. Zeghel and Mhedhbi (2006) investigate factors that have effects on the adoption of IAS in developing countries, including economic growth, education level, the degree of external economic openness, cultural membership in a group of countries, and the existence of a capital market. Their major findings are that developing countries having the higher literacy rates, capital markets and an Anglo-American culture[10] are the most likely to adopt international accounting standards. In that regard, the paper suggests at least two main implications. With respect to language, the implication is that developing countries in which English is officially or at least widely used are more likely to adopt IAS. In fact, this implication is not surprising because English is an official langue used in IAS/IFRS. As for the capital-market, the paper implies that high-quality accounting information is critical and strategically vital to the development of both listed companies and the capital market.

Saudagaran and Diga (1997a) investigate accounting regulations in the Association of South East Asian Nations (ASEAN) at a time when the two accounting model paradigms, i.e. the global paradigm and the regional paradigm, are fiercely competing. After performing a comparative analysis of the push for regional accounting harmonisation (forced by the ASEAN Federation of Accountants) and the factors aiding globalisation in ASEAN, along with providing the reasons explaining the advantages of adopting IAS over formulating ASEAN accounting standards[11], the authors conclude that the regional harmonisation in ASEAN is deterred. In other words, the global paradigm of accounting harmonisation is still dominant in ASEAN countries.

By examining the user's perception of accounting harmonisation in the Gulf Co-operation Council countries, Naser et al. (2005) reveal that while sharing the same language, and similar economic as well as cultural features are the most important factors that may facilitate accounting harmonization, the lack of professional and legal

[10] A country's culture is categorised as Anglo-American if English is officially used in that country - followed culture classifications of Frank (1979) - or the country's history has been strongly tied with the United Kingdom or the United States - followed culture classifications of Nobes (1998).

[11] These reasons include lack of resources for formulating ASEAN accounting standards, ease of IAS implementation (for they are flexible), political considerations, standard-setting structure, and foreign investors' confidence (Saudagaran & Diga 1997a)

requirements and enforcement problems are the most significant obstructions to the harmonization of accounting practices in this region.

Applying IASs is considered as a means of bring consistency to financial statements, at least from the actors' and regulators' viewpoints (Chand 2005). However, the challenge is that though the need to adopt IASs is apparent and the force pushing for adopting IASs is irresistible, the success in adopting IASs only can be achieved if there is a strong commitment and concerted effort by numerous participants, including the regulators, standard setters, financial providers, business community, and of course, the accountancy profession. Given this, Chand (2005) identifies certain preconditions for the adoption of IASs in developing countries with respect to the necessity of resources and skills, as well as the status of the capital and other markets. Ultimately, developing countries should properly assess five strategic factors, including professional expertise, education and training, legal support, the proportion of multinational companies to local companies, and adoption of IASs with amendments, prior to making decisions on adopting IASs. As for language, Abd-Elsalam and Weetman (2003) note that the difference in the country's official language can be one of difficulties in utilising and complying with IAS/IFRS, especially where IAS/IFRS have not been translated into the native language. Apart from this, the difference in the translation of IAS/IFRS can be the other problem, as was exemplified and proposed by Nobes (2006).

Chand and White (2007) seek to identify the underlying reasons behind the Fijian Institute of Accountants' decision on the application of IAS/IFRS to financial reporting prepared on or after 1 July 2002, especially in the context that there were only sixteen listed companies on the local stock market. Interestingly, the authors conclude that the process of adoption of IAS/IFRS in Fiji can result in transferring economic resources in favour of selected private interests while the public interests are usually ignored. Thus, whilst the use of IFRSs in Fiji may be beneficial for reporting entities who engage in the global economy, it is obviously beneficial for the accounting profession and the 'big four'[12] accounting firms.

2.3. Arguments for and against adoption of IAS/IFRS

It is widely acknowledged that the issue of adoption of IAS/IFRS and its similar process – harmonisation or convergence – has provoked extensively heated debate in the literature, both from advocates and from opponents.

The driving force for electing to adopt IAS/IFRS, as was cited in various sources, is to increase international comparability of financial reports (Ali 2005; Mueller et al. 1997, p.40). Accordingly, adopting IAS/IFRS also promises to ensure better analysis of financial statements and improving the accounting system's quality (Mueller et al. 1997, p.53). Besides, preference for IAS/IFRS has sprung from the notion that these standards have been produced by an independent, private-sector body, and developed in response to the demand of capital markets (Whittington 2005). In essence, accounting harmonisation is critical for multinational enterprises, not only because of reducing the costs of consolidating financial statements, but also facilitating the investment decision-making for investors (Nobes & Parker 1995, p.118). Obviously, adopting IFRSs is a vehicle for reducing information cost and stimulating capital flows, especially important for multinational enterprises whose shares are listed on multiple stock exchanges (Copper et al. 2003; Haswell & McKinnon 2003). Further, from the regulatory body's standpoint, adopting IAS/IFRS is the best solution for solving the financial constraints, given that the formulation and promulgation of accounting standards incurs huge costs.

Dumontier and Raffournier (1998) provide empirical evidence as to the potential benefits obtaining from applying IAS/IFRS by indicating that Swiss companies voluntarily comply with IASs so as to reduce political costs and pressure from the outside market. More specifically, the authors document that the firms that are larger, more internationally diversified, less capital intensive, and that have a more diffuse ownership are more likely to voluntarily comply with IASs. In other words, these are voluntary driven from incentives rather than standards per se. By sharing this view, based on an examination of four East Asian jurisdictions including Hong Kong, Malaysia, Singapore, and Thailand, Ball et al. (2003) argue that although those jurisdictions have high quality accounting standards, their financial reporting preparers confront strong institutionally grounded incentives to make implementation decisions leading to low quality reported numbers. The authors further suggest that incentives seem to have dominant influences on accounting standards as a determinant of financial reporting in the jurisdictions.

The accounting literature, on the other hand, documents a number of arguments against adopting IAS/IFRS. Firstly, opponents explicitly state that the explanation for the needs of adopting IAS/IFRS as a response to the demand of the global capital market is unconvincing, because a well developed global capital market, already exists (Goeltz 1991). In so far the global capital market has continually evolved without unified accounting standards; moreover, applying the economic theory, some contend that harmonised international accounting standards and a single set of accounting practices are not really necessary because,

[12] Chand and White (2006) note that the 'big four' accounting firms in Fiji are DeloiteToucheTohmatsu, KPMG, PriceWaterhouseCooper, and Ernst and Young.

under the competitive force, corporations needing funds will provide their financial statements in the best quality so as to enjoy lower interest rates and higher common stock prices or otherwise (Mueller et al. 1997, p.53). In addition, in terms of compliance, unauthoritative implementation guidance provided by the IASB that has broad room for professional judgement may not guarantee the comparability of IFRS-based financial reporting across jurisdictions (Schipper 2005). Nobes and Parker (1995) hold a similar view by stating that a world-wide enforcement agency is lacking.

As IASs are widely considered as high quality (e.g. Ball et al. 2000), one may argue that applying IASs may enhance the quality of financial reporting practices, and accounting systems accordingly. Nevertheless, Ding et al. (2007) suggest that purely adopting IAS does not necessarily advance a national accounting system if the country's economic development policy, corporate governance mechanisms, and financial market functioning do not fundamentally change. In a similar vein, Ball et al. (2000) comment that the high quality of financial statements cannot be achieved if incentives of managers and auditors dominate accounting standards, even such if financial statements are prepared based on high quality accounting standards, i.e. those of the UK, the US, or the IASB. Ashraf and Ghani (2005) share this view by reporting that the adoption of IFRSs in Pakistan as national standards has not led to improvement in the quality of financial reporting.

Further, since the principal purposes of financial statements vary among jurisdictions, it would be reasonably expected that financial reporting should vary rather than being identical, which is prepared based on a single set of accounting standards (Nobes & Parker 1995). In the extreme, one may argue that companies that are exposed to international markets should prepare two sets of financial statements, one for the domestic purposes, and the other for international needs. Moreover, Nobes and Parker (1995) indicate another obstacle to adopting IAS/IFRS which emanates from the economic consequence of accounting standards, as has more recently been highlighted.

3. Discussion

In terms of accounting models, the Vietnamese accounting system is generally classified as a Continental European style (see e.g., Narayan et al. 2000). As was earlier mentioned, the Vietnamese accounting system is strictly regulated by law, from laws on accounting (the highest hierarchical level) to circulars (the lowest hierarchical level). Especially, entry bookkeeping has been guided by the Ministry of Finance, accounting practitioners have to stick to these guidelines rather than make professional judgements based on accounting concepts and principals. This situation does not change even now VAS has been formulated and promulgated. Given this, it is helpful to understand Vietnamese the financial accounting practice environment compared with Western accounting systems. As a result, it is useful to understand the probability of adoption of IAS/IFRS in the country.

The efforts of formulation and promulgation of VAS somewhat reflects the development of Vietnamese accounting systems. However, it would be worth noting that this is the prime product of the European Union Assistance Project which aims at introducing IASs to the Vietnamese Government and was completed in 1998 (Narayan et al. 2000). As for timeline for issuance of VAS, it was projected that the Ministry of Finance would issue a full set of VASs by the end of the year 2003 (Narayan & Godden 2000). Nevertheless, only fourteen accounting standards were issued up to the end of 2003; the other ten standards were issued in the year 2005, which added up to a total of 26 VASs at the time of this paper (see Appendix 1). Further, according to the Ministry of Finance, issuance of the remaining standards has not been planned due to the resource constraints (Deloitte Touche Tohmatsu 2006). Taken together, it can be safe to concluding that Vietnam has made slow progress on the development of accounting standards, which certainly lets the country lag behind other regional countries, especially whose accounting standards that have been adopted IAS/IFRS. Additionally, given that the financial constraints resulting in the temporary suspension of the development of VAS caused by, adopting IAS/IFRS in Vietnam could be an effective solution.

In comparison with IAS/IFRS, the significant differences between VAS and IAS/IFRS are clearly shown. As was noted by Narayan and Godden (2000), VASs have been established based on IAS/IFRS with significant adjustments for country-specific factors, including economics, finance, and accounting practices. Moreover, concerning measurement, whilst a fair value approach to assets and liabilities has been increasingly recognised under IFRSs, the historical cost method is still dominant in VASs (World Bank 2006). In relation to methodology, it is also worth noting that while IASs provide a number of benchmarks and options, VASs mainly consist of guidelines for a recommended system of accounting practices (Narayan & Godden 2000). Indeed, these deviations can be easily understood in the context of Vietnam in which accounting systems are prescriptive and strictly regulated by laws, as earlier highlighted.

With an attempt to predict the possibility of adopting IAS/IFRS in Vietnam, taking into consideration culture differences when applying IAS/IFRS is crucial because, as was warned by a number of previous studies, national culture may be persistent and resistant to changes in accounting infrastructure (Hope 2003). Furthermore, it would be worth acknowledging that differences in information

needs are recognised among different societies, particularly between developing countries and developed countries as well as the international business community (Taylor 1987), and Western accounting systems may not be appropriate for developing countries (Abd-Elsalam & Weetman 2003).

In Vietnam, the financial reporting system (i.e. financial accounting system) and tax system are closely related. Accounting for income and expenditure has to follow tax regulations. In other words, financial accounting is not distinguishable from accounting systems for tax purpose. Not surprisingly, Dang et al. (2006) report that tax authorities and government agencies are the main users of financial reports of small and medium companies in Vietnam. These findings may be applicable for the cases of the other kinds of enterprises because they are subject to almost same set of Vietnamese accounting regulations. Given this, it is not difficult to understand the reason why new accounting guidelines are often issued following new financial or taxation policies. In this context, it is worth acknowledging the findings from Inoue and Thomas (1996)'s work that accounting choices by managers are significantly influenced by taxation policy given that taxation and accounting systems are closely tied; that is, it seems that loose accounting rules on financial accounting practices, which are based on general concepts and principles, are impractical in Vietnam

As was discussed in early sections of the paper, such dimensions as politics, society, economics, and culture obviously vary among countries. Previous discussions, for instance, those relating to the Anglo-American accounting model and the Continental accounting model, also indicate that the goals and information needs differ from one country to another. Thus, it seems reasonable to suggest that each country should establish its own system to serve its own needs rather than fully adopt IAS/IFRS without any amendment.

In addition, providing that not much has been done by the IASB for the developing countries (Brown 2007), with several researchers suggesting that IASs do not suit the requirements of the majority of societies, especially developing countries (see e.g., Everett 2003; Sikka 2003). Consequently, the wholesale adoption IAS/IFRS in Vietnam would not be advisable. Rather, the Ministry of Finance should select appropriate IAS/IFRS to apply in Vietnam. The advice on transferring the controlling role of the government in the accounting standard-setting process to the private sector should be taken with caution. Currently, Vietnam still needs the control of the government over accounting standard formulation and promulgation to ensure that VAS satisfies the public interests, or otherwise, issues may arise as in the case of Fiji which was earlier mentioned. Indeed, the Vietnamese accountancy profession does have limited capability to shoulder that heavy burden[13].

4. Conclusion

Financial accounting practices vary from one country to another. Accounting standards, as was universally known, serve as sound guidelines for preparing financial reporting and tend to move towards a single set – the international accounting standards, known as IASs or IFRSs. Therefore, the research into the possibility of adopting IAS/IFRS in Vietnam is extremely relevant and benefits for the accounting literature, given that research into accounting in Vietnam, is minimal in the accounting literature. This paper is conducted based on an interpretation of the literature in the field of accounting development, accounting standard-setting, and especially the process of adopting accounting standards, and this is part of a long-lasting debate. Considering the findings and recommendations documented in the current literature with, special consideration of the Vietnamese situation, the paper proposes that adoption of IAS/IFRS with selection is practically possible in Vietnam. More specifically, adoption of selected IAS/IFRS which are appropriate to Vietnamese conditions is strongly recommended.

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[13] See International Federation of Accountants (2004) for further information about the Vietnamese Accounting Association (VAA). Further, it is hard to imagine how the Vietnamese accountancy profession can successfully carry out its role as an accounting standard setter, provided that it have not been actively involved in international accounting standard setting. For instance, the IASB received more than two hundred eighty four letters of comment on the IFRS 3 *Business Combinations* exposure draft in 2005, but not one from the Vietnamese accountancy profession. The letters of comment can be tracked at http://www.fasb.org/ocl/fasb-getletters.php?project=1204-001.

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Appendix 1

VIETNAMESE ACCOUNTING STANDARDS (VAS)	
VAS 01	Framework
VAS 02	Inventories
VAS 03	Tangible fixed assets
VAS 04	Intangible fixed assets
VAS 05	Investment properties
VAS 06	Leases
VAS 07	Accounting for investments in associates
VAS 08	Financial reporting of interests in joint ventures
VAS 10	The effects of changes in foreign exchange rates
VAS 11	Business combinations
VAS 14	Turnover and other incomes
VAS 15	Construction contracts
VAS 16	Borrowing costs
VAS 17	Income taxes
VAS 18	Provisions, contingent liabilities and contingent assets
VAS 19	Insurance contracts
VAS 21	Presentation of financial statements
VAS 22	Disclosures in the financial statements of banks and similar financial institutions
VAS 23	Events after the balance sheet date
VAS 24	Cash flow statements
VAS 25	Consolidated financial statements and accounting for investments in subsidiaries
VAS 26	Related party disclosures
VAS 27	Interim financial reporting
VAS 28	Segment reporting
VAS 29	Changes in accounting policies, accounting estimates and errors
VAS 30	Earnings per share

AN EMPIRICAL INVESTIGATION INTO THE CORRELATION BETWEEN RAND CURRENCY INDICES AND CHANGING GOLD PRICES

F.Y. Jordaan, J.H. Van Rooyen*

Abstract

This study sets out to investigate the relationship between two South African Rand currency indices, ZARX and RAIN, in relation to the gold prices. The ZARX is computed with the formula used to determine the USD currency index (USDX) with the latter being developed by the JSE.
Albeit sets of variables have been investigated to determine if any long term relationships exist using the theory of co-integration. The findings suggest that there is no co-integrating relationship between the South African Rand currency indices and the gold price changes over the research period.

Keywords: ZARX, Correlation, Gold Price, Unit-Root Test, Co-integration, Granger Causality

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INTRODUCTION

After the successful introduction of the United States Dollar Currency Index (USDX) in 1973, various authors proposed the implementation of currency indices that are tradable on their regional exchanges. One such suggestion was made by Liu and Han (2010:1) who demonstrated a similar approach which could be used to create a Chinese Yuan index (CHYX) with possible benefits for investors. One benefit of the USDX mentioned by Krull and Rai (1992) is that it brings diversification benefits that investors would receive from including a currency index in a portfolio of foreign currencies. Another diversification advantage from the use of the USDX is the negative correlation with the gold price during periods of market uncertainty (Liu and Han, 2010:3). The most fundamental benefit of using an index is that it helps the investor determine the movement of a market from one day to the next.

Over the past decade, financial markets have been adversely affected by two major black swan events. The first was in 2001 with the "9/11" event and the second in 2008 with the sub-prime crisis. These two events have resulted in investors moving from risky asset classes and choosing more risk adverse asset classes. Foreign currencies and gold can be regarded as two sides of the same coin. Foreign currencies are extremely volatile with their value changing every few seconds in contrast to gold which is regarded as a safe havenasset during times of market turbulence. The USD is one of the foreign currencies that can be regarded as one of the most significant variables causing the gold price to change. By including the USD and other macroeconomic effects into the ZARX and RAIN, an analysis can be done to determine the price of gold over time.

On 08 November 2010 the Johannesburg Stock Exchange decided to introduce the Rand currency index (RAIN) in the South African currency derivatives market. The RAIN is calculated as an inverse arithmetic trade-weighted currency index which accounts for the trade-weights of South Africa's five major trading partners. Other advantages of these South African Rand currency indices is that they provide investors with a more accurate measure of the foreign currency exposure of, for instance, South Africa in relation to its major trading partners. This provides an estimate of foreign currency exposure that may be a more reliable measure of volatility than only looking at the USD/ZAR exchange rate. This can be done by analysing and predicting the trend of these currency indices. As gold prices also describe trends, it may, from a business perspective be important to determine if these trends in gold prices are in any way related to the trends in the Rand currency indices. A better understanding of future volatility may help businesses better hedge exchange rate volatility.

OBJECTIVE OF THE RESEARCH

The main objective of this research is to determine the relationship between the RAIN index introduced by the JSE and the gold price and a rand index (ZARX), calculated in similar fashion to the USD index (USDX). The ZARX is compiled for the sake of this research as an alternative index to the RAIN. This is done to overcome a disadvantage in the way the RAIN is determined. This allows more accurate comparisons to be made with the USDX in the South

African currency market. Indices are used extensively in financial markets as indicators of financial price changes from one day to the next. It therefore makes sense to compare the gold price and these indices.

As the gold price can be seen as an indicator of the sentiment of investors globally about the state of the dollar as an important currency in the international business environment, it is important to understand how it would correlate with a South African currency index based on the dollar. This information may be helpful in setting up a currency hedging strategy. As the dollar is an important currency influencing the sentiment and trends of all other currencies, it speaks for itself that such a comparison could prove meaningful.The analysis for SA can also be compared with previous research which may confirm or contradict results of international studies.

BRIEF OVERVIEW OF THE RELATIONSHIP BETWEEN THE USDX AND THE GOLD PRICE

A large variety of literature exists examining the relationship between the USD and the gold price. However, it seems only a limited number of studies have focused on the long run relationship between the changes in the gold price and the USDX.

Huang and Wang (2010:724) cited studies by Chen (2006); Shuguang and Hu (2008) that found that a negative correlation existed between the USD, USDX and the gold price. Ismail, Yahya and Shabri (2009:1509) on the other hand used the USDX to forecast the price of gold with other economic variables included using multiple linear regression models. It was found that the forecast power of the USDX was only obtained when combining it with other economic variables, which makes sense. This presented another limitation when analyzing the relationship between the USDX and changes in the gold price. In contrast to the above findings, Huang and Wang (2010:724) analyzed the relationship between the USDX and the gold price. They found that there was no co-integration in the long-term and were able to conclude that the gold price was influenced by many market factors. All these limitations and mixed results reinforced the need for studies to be conducted on the topic with significant implications for the South African market.

Min and Yanbin (2010) conducted a study on the effect that the behavior of the USDX relative to changing oil prices. They drew three conclusions from the study. Firstly, it was found that negative long run correlations exist between the two. Secondly, using error correction, the long run equilibrium of USDX did not reflect in the short term spot oil prices changes. Thirdly, using variance decomposition they identified numerous other variables that had an effect on the spot oil prices. For these reasons the changing oil price instead of changing gold price has been considered for further research.

RESEARCH METHODOLOGY

Mainly two comparisons were done for this research. The ZARX was compared to the gold price and secondly the RAIN was also compared to the gold price. Since the ZARX calculation was based on monthly data, monthly gold price data were obtained from the IMF (2010).The second set of variables used was the RAIN with the gold price. The JSE calculates the RAIN on a daily basis from the base year which is1 January 2006. In order to make comparison possible, daily gold price data were obtained from3 January 2006 to 7December 2010 from the BFA McGregor database.

In the South African market, gold prices are quoted in terms of the US dollar. The gold prices in US dollars terms have been converted to ZAR units using US dollar/ZAR exchange rates. These monthly and daily cross rates were obtained from the Quantec (2011) database from 01 January 1980 and the BFA McGregor (2005) database from 3 January 2006.

Co-integration theory was used in this study to determine if the causal effect of changes inthe South African currency indices relative to the changes in gold prices (ZAR). These co-integration tests were complemented with Pairwise Granger causality tests to determine the direction of causality amongst the pairs of variables.

This section provides a brief overview of the USDX and the use of its pricing convention to create a ZARX.

Redfield (1986:625) provides an inverse geometric trade-weighted formula to determine the USDX at time t. The USDX is quoted in indirect terms or inversely so that the index is not correlated with the underlying foreign currencies. This allows investors to hedge any adverse effects of the USD, but to still enter into positions and make profits from the underlying foreign currencies. Another characteristic of the USDX is that it is trade-weighted by ten major trading partners. Since the inception of the USDX, the trade-weights were adjusted only once. This adjustment occurred when the euro replaced the EMU member countries.

The ZARX is calculated for the sake of this study as an inverse geometrically trade-weighted value with the formula proposed by Redfield (1986:625). These trade-weights are obtained for the six major trading partners with the weights not being adjusted in a similar fashion to the USDX to obtain longitudinal comparisons(Economy Watch, N.D). The method used to calculate the normalized trade-weights from South Africa's six trading partners is shown in the table below:

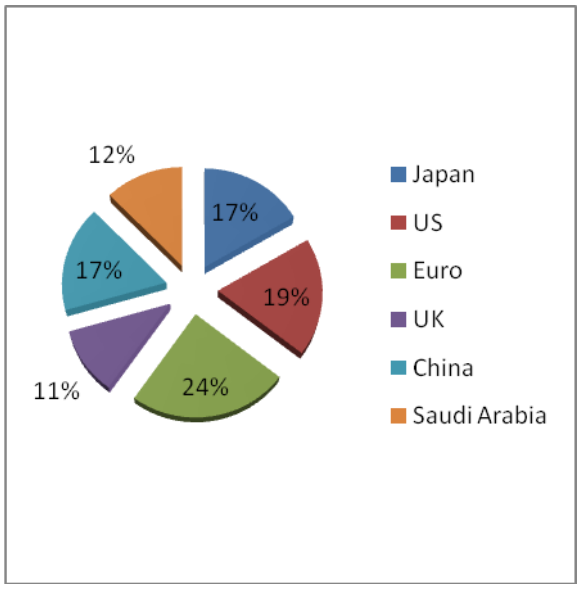
Table 1. Normalised Trade-Weights of South Africa's Main Trading Partners (2009)

Trading Partners	Export (%)	Import (%)	Average Trade	Normalised Trade
Japan	11.10	5.50	8.30	*0.17*
USA	11.10	7.90	9.50	*0.19*
Euro	13.20	11.20	12.20	*0.24*
UK	6.80	4.00	5.40	*0.11*
China	6.00	11.10	8.55	*0.17*
Saudi Arabia	-	6.20	6.20	*0.12*
Other	*51.80*	*54.10*	*49.85*	
Total	**100.00**	**100.00**	**100.00**	**1.00**
Total without other	*48.20*	*45.90*	*50.15*	

Source: Economy Watch (N.D.)

Recent import and export data for 2009was used. The rationale behind this is that South Africa can be seen as a developing or emerging economy. This allows for a better representation of the foreign economic climate using recent trade data.

Figure 1. Normalized Weights Presented Graphically (2009)



Source: Own Compilation

The RAIN is calculated by the JSE is an inverse arithmetic trade weighted currency index. RAIN is trade-weighted based on the six major trading partners. The trade-weights are updated annually with data provided by the South African Revenue Service. The RAIN computation takes into account the contract sizes of each of the five underlying trading partners' foreign currencies. Secondly the index is calculated at time t from the rebalancing date of the trade-weights at time T (JSE, 2010a, b and c). To obtain an equal comparison of ZARX and RAIN, both currency indices were initiated on 01/01/2006 using an index base value of 10 000.

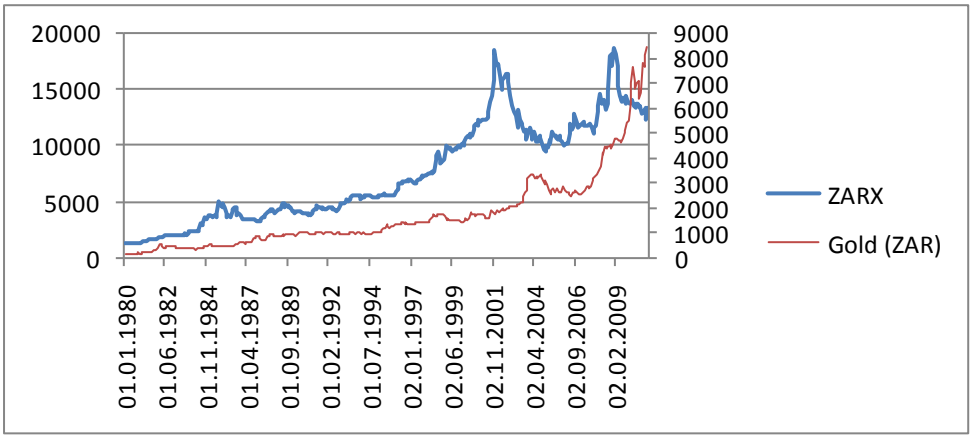
RESEARCH FINDINGS

A graphical representation of the ZARX and RAIN with a brief discussion thereof follows. Unit root tests, granger causality as well as co-integration regressions wereconducted in E-views to determine if co-integrating relationships exists amongst these currency indices. This is also presented and briefly discussed.

Figure 1 exhibits a strong positive lagged correlation between ZARX and the gold price during two periods of market uncertainty. In 2001, ZARX shows a large upward trend with an increase in the gold price only occurring towards the end of 2004. The gold price shows a lagged change relative to the

ZARX. This may signify a flight of investors possibly to the gold commodity market due to the inherent dollar weakness after increased volatility and uncertainty. In 2008, a similar scenario existed when ZARX showed an increase. Gold prices once again lagged this ZARX change, with an eventual spike in the gold price only occurring in 2010 again due to a possible flight to gold. From a South African investor's perspective, during periods of financial uncertainty, the foreign currencies of the trading partners (which are developed markets)making up the rand currency index, appreciated resulting in a weakening of the USD/ZAR exchange rate. This ultimately caused gold prices quoted in US dollars terms to increase and become more expensive in rand terms due to the weaker rand. This may be one possible explanation for the strong positive lagged correlation between the South African rand currency index and the gold price changes.

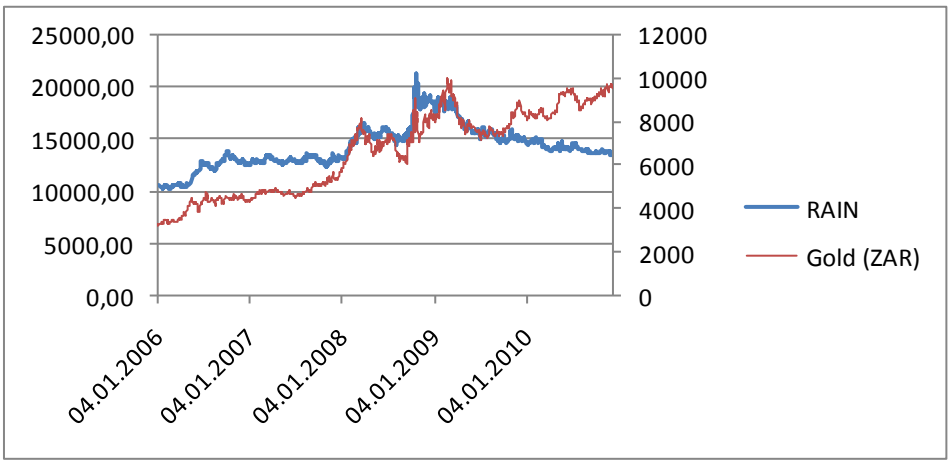
Figure 2. Movement of ZARX in relation to the Changing Gold Price



Source: IMF and Quantec database

The RAIN calculated by the JSE in Figure 2 removes this lagged effect with increases coinciding during 2008/2009 period which may be due to the annual resetting of the trade weights. The RAIN calculated in Figure 2 takes a closer look at the second period of market uncertainty shown by the second spike/ upward trend of ZARX in Figure 1.

Figure 3. Movement of RAIN in relation to the Changing Gold Price



Sources: IMF and JSE (2010a, b, c)

From Figures 1 and 2 above, it may be concluded that investors may be indifferent of the increased gold prices during periods of market uncertainty due to the safe haven benefits that they receive from holding this commodity. The increased demand puts pressure on spot gold prices in the market which will amplify the upward trend. After a period of greater market uncertainty, the majority of foreign trading partner's currencies depreciated relative to the South African rand causing the rand to

strengthen and gold prices to decline. This decline in the gold price created a greater demand for gold in the periods after this decline. This again gave rise to a renewed upward trend.

Another important variable that needs to be considered is the level of interest rates. Investors use the risk-free interest rate as an opportunity cost measure to price instruments enabling them to decide how to seek alternative investment classes that may yield more than the risk-free interest rate. At present, the level of risk-free interest rates was lowered by the central bank after the last period of greater market uncertainty and high levels of credit, to stimulate consumer spending and to help increase economic activity. As a result of the low risk-free interest rates, investors started looking for alternative risk-free securities which may offer higher returns at a lower risk. In this case they turned to gold as one of the safer higher yielding assets and currently also to bonds.

To summarize, in Figure 1, the gold price trend lagged ZARX's trend. RAIN calculated in Figure 2 by the JSE removed this lag with an identical spike of gold prices and RAIN occurring during 2008/2009. The removal of this lag meant that when RAIN is in a downward trend, gold prices should follow. In Figure 2 this was also the case when gold prices declined between 2009 and 2010, with an upward trend thereafter. This upward trend could be the outcome of the above mentioned factors.

A unit root test was conducted on the monthly and daily gold price data in rand terms (GOLDZAR) to test whether the data is stationary. The p-values in Table 1and Table 2 suggest that the null hypothesis of GOLDZAR should be rejected, implying that the price of gold in rand terms displays a tendency in the long term. This implies therefore that difference operator should rather be used as only stationary time-series can be compared to determine if there is co-integration.

Table 2. Unit Root Test on Monthly Gold Prices

Null Hypothesis: GOLDZAR has a unit root
Exogenous: **Constant**
Lag Length: 6 (Automatic - based on SIC, maxlag=16)

		t-Statistic	Prob.*
Augmented Dickey-Fuller test statistic		5.445534	1.0000
Test critical values:	1% level	-3.448012	
	5% level	-2.869219	
	10% level	-2.570928	

*MacKinnon (1996) one-sided p-values.

Source: Own Compilation

Table 3: Unit Root Test on Daily Gold Prices

Null Hypothesis: GOLDZAR has a unit root
Exogenous: **Constant**
Lag Length: 0 (Automatic - based on SIC, maxlag=22)

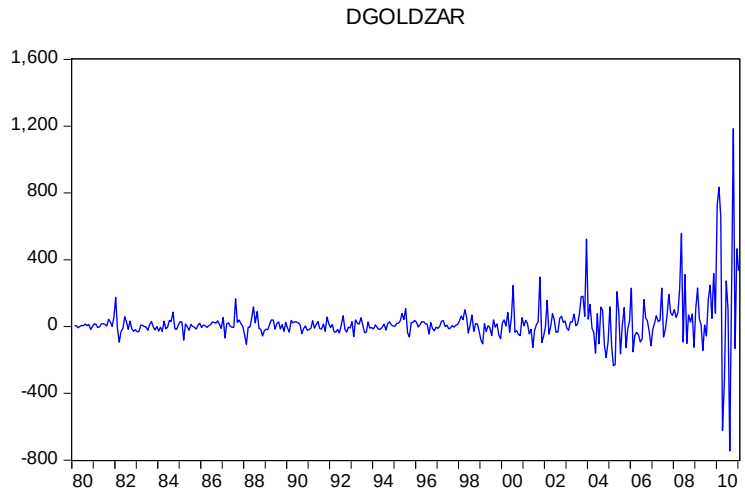
		t-Statistic	Prob.*
Augmented Dickey-Fuller test statistic		-1.001703	0.7545
Test critical values:	1% level	-3.435554	
	5% level	-2.863726	
	10% level	-2.567984	

*MacKinnon (1996) one-sided p-values.

Source: Own Compilation

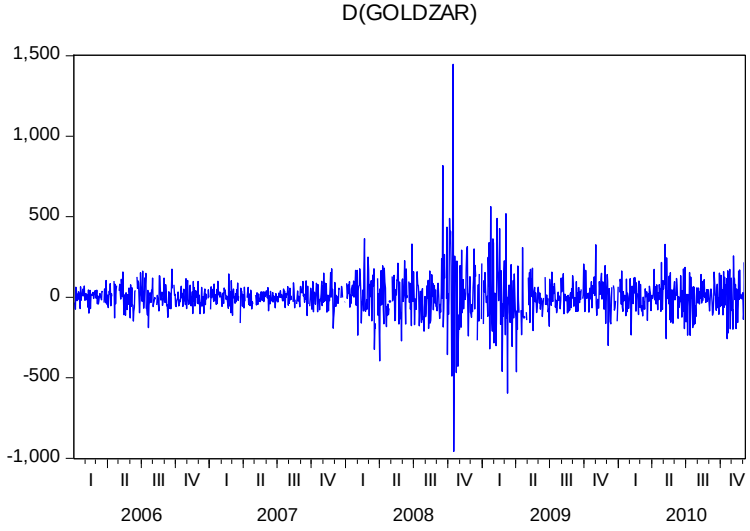
To obtain stationary time series required the differencing of the monthly and daily gold price data. The differenced monthly and daily gold prices are shown in Figures 3 and 4 below.

Figure 4. Monthly Differenced Gold Prices



Source: Own Compilation

Figure 5. Daily Differenced Gold Prices



Source: Own Compilation

Once the differenced data have been obtained, unit root tests were performed to determine if a stationary time-series exists. Using Augmented Dickey-Fuller test statistics, the p-values from tables3and 4indicate that the null hypothesis must not be rejected as the gold prices contain a unit root. This proves that the gold price data is now stationary which is shown in Tables 3 and 4.

Table 4. Unit Root test on Differenced Monthly Gold Prices

Null Hypothesis: DGOLDZAR has a unit root
Exogenous: **None**
Lag Length: 10 (Automatic - based on SIC, maxlag=16)

		t-Statistic	Prob.*
Augmented Dickey-Fuller test statistic		-2.564507	0.0102
Test critical values:	1% level	-2.571383	
	5% level	-1.941704	
	10% level	-1.616111	

*MacKinnon (1996) one-sided p-values.

Source: Own Compilation

Table 5. Unit Root test on Differenced Daily Gold Prices

Null Hypothesis: D(GOLDZAR) has a unit root
Exogenous: None
Lag Length: 0 (Automatic – based on SIC, maxlag=22)

		t-Statistic	Prob.*
Augmented Dickey-Fuller test statistic		-36.83058	0.0000
Test critical values:	1% level	-2.566937	
	5% level	-1.941094	
	10% level	-1.616518	

*MacKinnon (1996) one-sided p-values.

Source: Own Compilation

This approach mentioned above has been repeated for the ZARX and RAIN in tables 5 and 6 and shown graphically in Figures 5 and 6.

Table 6. Unit Root Test on ZARX

Null Hypothesis: ZARX has a unit root
Exogenous: Constant
Lag Length: 0 (Automatic - based on SIC, maxlag=16)

		t-Statistic	Prob.*
Augmented Dickey-Fuller test statistic		-0.995677	0.7558
Test critical values:	1% level	-3.447722	
	5% level	-2.869092	
	10% level	-2.570860	

*MacKinnon (1996) one-sided p-values.

Source: Own Compilation

Table 7. Unit Root Test on RAIN

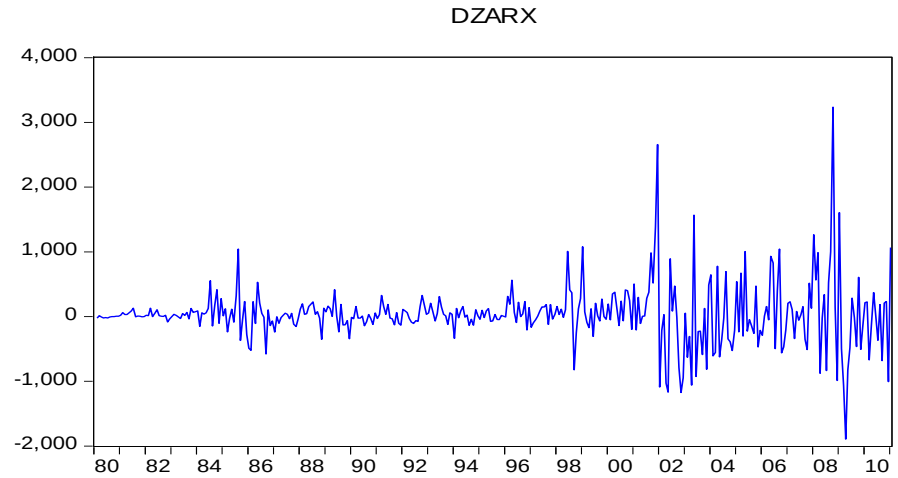
Null Hypothesis: D(RAIN) has a unit root
Exogenous: None
Lag Length: 1 (Automatic - based on SIC, maxlag=22)

		t-Statistic	Prob.*
Augmented Dickey-Fuller test statistic		-27.20250	0.0000
Test critical values:	1% level	-2.566994	
	5% level	-1.941101	
	10% level	-1.616512	

*MacKinnon (1996) one-sided p-values.

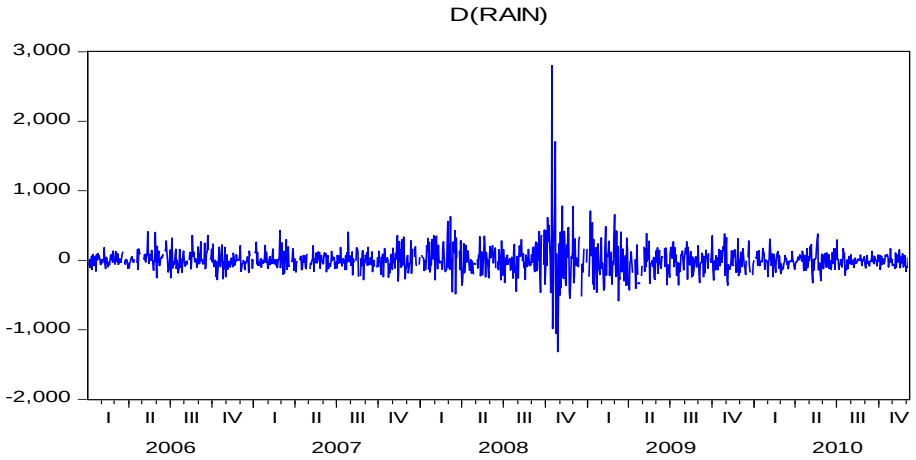
Source: Own Compilation

Figure 6. Monthly Differenced ZARX



Source: Own Compilation

Figure 7. Daily Differenced RAIN



Source: Own Compilation

Granger Causality Tests on ZARX and RAIN

Pairwise Granger Causality Tests were conducted on the ZARX, RAIN and gold prices to determine the causality of the gold price and the ZARX and vice versa. From tables7 and 8 it is evident that both null hypotheses should not be rejected. This suggests that there is no directional causality amongst any of the variables. The lower p-value of 0.6647 in Table 7 suggests that the gold price has greater causal effect compared to ZARX than ZARX compared to the gold price. The opposite is true in Table 8 with the causal effect of RAIN having the lower p-value.

Table 8. Pairwise Granger Causality Tests: ZARX and Monthly Gold Price

Pair wise Granger Causality Tests
Date: 04/20/11 Time: 09:51
Sample: 1980M01 2011M01
Lags: 2

Null Hypothesis:	Obs	F-Statistic	Prob.
GOLDZAR does not Granger Cause ZARX	371	0.40894	0.6647
ZARX does not Granger Cause GOLDZAR		0.05411	0.9473

Source: Own Compilation

Table 9: Pairwise Granger Causality: Rain and Daily Gold Prices

Pairwise Granger Causality Tests
Date: 04/21/11 Time: 17:32
Sample: 1/03/2006 12/07/2010
Lags: 2

Null Hypothesis:	Obs	F-Statistic	Prob.
GOLDZAR does not Granger Cause RAIN	1172	0.65417	0.5201
RAIN does not Granger Cause GOLDZAR		1.16530	0.3122

Source: Own Compilation

Co-Integration Tests: ZARX and RAIN

Both the ZARX and the monthly gold price data contain unit roots when the data is differenced into stationary time series. These stationary time series can now be compared with each other to determine if any long run co-integrating relationships exists. This co-integrated relationship has been performed by regressing the gold price and a constant on the ZARX. From the regression output below, both the constant and gold price are statistically significant.

Table 10. Co-integration Regression: ZARX and Gold Prices

Dependent Variable: ZARX
Method: Least Squares
Date: 04/20/11 Time: 09:31
Sample: 1980M01 2011M01
Included observations: 373

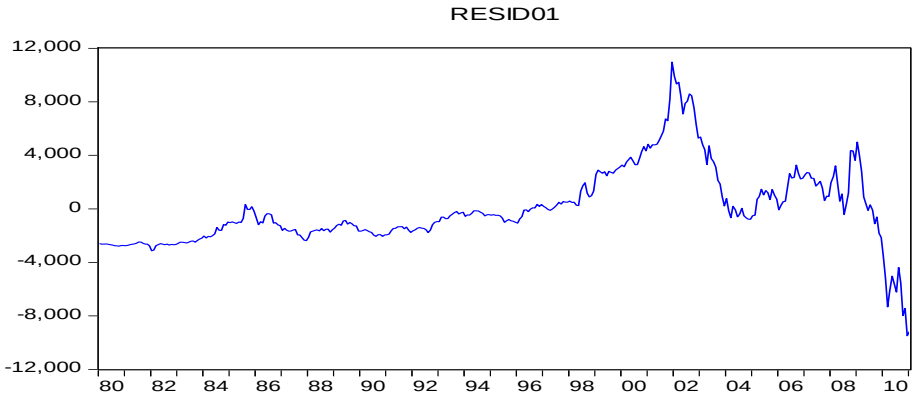
Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	3635.326	223.5502	16.26179	0.0000
GOLDZAR	2.229691	0.097175	22.94509	0.0000

R-squared	0.586619	Mean dependent var	7445.070
Adjusted R-squared	0.585505	S.D. dependent var	4490.343
S.E. of regression	2890.941	Akaike info criterion	18.78190
Sum squared resid	3.10E+09	Schwarz criterion	18.80293
Log likelihood	-3500.824	Hannan-Quinn criter.	18.79025
F-statistic	526.4773	**Durbin-Watson stat**	**0.036264**
Prob(F-statistic)	0.000000		

Source: Own Compilation

To determine if a ZARX co-integrating relationship exists relative to the gold price, unit root tests were conducted on the residuals from the regression in Table 8. This is shown graphically in Figure 7 and reported in table 10. This was also done for RAIN and the daily gold price data in Tables 11 and 12 with the error terms from the regression shown in Figure 8.

Figure 8. Residuals from Co-integration Regression: ZARX and Gold Price



Source: Own Compilation

Table 11. Unit Root Test on Residuals from ZARX and Gold Price Regression

Null Hypothesis: RESID01 has a unit root
Exogenous: Constant
Lag Length: 9 (Automatic - based on SIC, maxlag=16)

		t-Statistic	Prob.*
Augmented Dickey-Fuller test statistic		-1.817461	0.3718
Test critical values:	1% level	-3.448161	
	5% level	-2.869285	
	10% level	-2.570963	

*MacKinnon (1996) one-sided p-values.

Source: Own Compilation

From Table 9, the p-value using the Augmented Dickey-Fuller test statistic indicates that the null hypothesis of the residuals containing a unit root must be rejected. This can also be seen in Figure 7 with the residuals not being a stationary time series. Thus, no co-integrating relationship exists between the ZARX and the gold price in rand terms. A possible reason for the differences in the two R squared figures shown in tables 9 and 11 could be because the trade-weights of the foreign currencies comprising of RAIN being updated annually which may give rise to a material change especially if major changes took place over the period of a year. Another possible reason could be due to the contract sizes factored into the terminal value of the RAIN at the rebalancing date of the index.

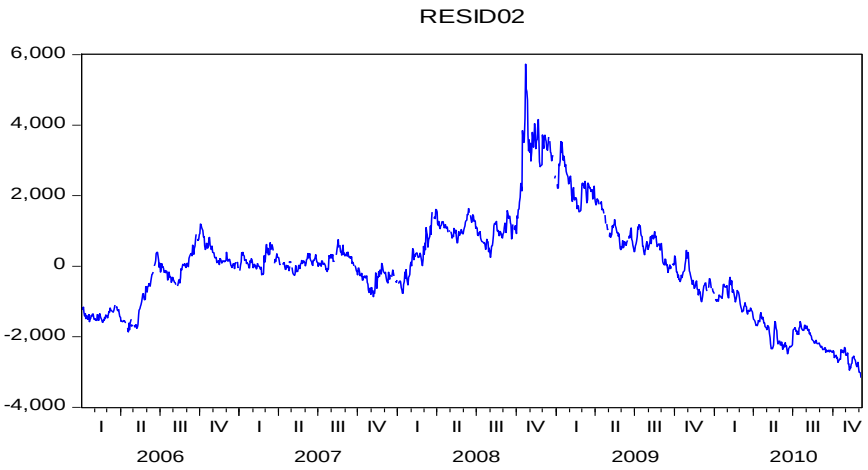
Table 12. Co-integration Regression: RAIN and Gold Prices

Dependent Variable: RAIN
Method: Least Squares
Date: 04/20/11 Time: 19:51
Sample: 1/03/2006 12/07/2010
Included observations: 1244

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	9270.839	145.4235	63.75062	0.0000
GOLDZAR	0.752301	0.021106	35.64343	0.0000

R-squared	0.505663	Mean dependent var	14249.06
Adjusted R-squared	0.505265	S.D. dependent var	2031.354
S.E. of regression	1428.802	Akaike info criterion	17.36867
Sum squared resid	2.54E+09	Schwarz criterion	17.37691
Log likelihood	-10801.31	Hannan-Quinn criter.	17.37177
F-statistic	1270.454	**Durbin-Watson stat**	**0.012272**
Prob(F-statistic)	0.000000		

Figure 9. Residuals from Co-integration Regression: RAIN and Gold Price



Source: Own Compilation

Table 13. Unit Root Test on Residuals from RAIN and Gold Price Regression

Null Hypothesis: RESID02 has a unit root
Exogenous: None
Lag Length: 0 (Automatic – based on SIC, maxlag=22)

		t-Statistic	Prob.*
Augmented Dickey-Fuller test statistic		-1.017440	0.2781
Test critical values:	1% level	-2.566879	
	5% level	-1.941086	
	10% level	-1.616523	

*MacKinnon (1996) one-sided p-values.

Source: Own Compilation

The unit root test conducted on the residuals from the RAIN and gold price regression resulted in a p-value of 0.2781. As the p-value is greater than the 5 % level of significance, the null hypothesis that the residuals contain a unit root must be rejected. Accordingly, no co-integrating relationship exists amongst the RAIN and the changing gold price.

SUMMARY AND CONCLUSIONS AND RECOMMENDATIONS

When the majority of foreign currencies comprising of the rand currency index appreciate relative to the South African rand, it results in an increase in the rand currency index and vice versa. During periods of extreme market uncertainty, the rand currency indices experience relatively large increases. An example is shown in Figure 1 when ZARX had large increases in 2001 and 2008. Another example is RAIN in Figure 2 with a sharp increase over the 2008 period. The reason for this increase in rand currency indices during periods of market uncertainty is due to the inverse quotation of the foreign currencies underlying this index. This inverse quotation allows investors to more accurately manage foreign currency exposure in primarily two ways.

Firstly, investors could enter into derivative positions on the Rand currency indices. By entering into these positions investors can remove exposure to the rand whilst still entering into exposure positions on the underlying foreign currencies making up the index.

Secondly, investors in the foreign exchange market could use RAIN to determine when there is a lot of uncertainty in the market and whether to choose to move to commodity markets. If a decline in the RAIN is expected, then the gold price should change in the opposite direction meaning investors will move to gold. Alternatively, investors should then plan to hedge against the currency volatility. One type of commodity market is the gold market which provides a natural hedge against adverse movements in currencies whichinvestors regard as a safe haven.

Assuming investors move from the foreign exchange market to the gold market during periods of extreme market uncertainty, there should be a positive correlation amongst changes in the rand currency indices and the changing gold price.

The main findings of this study underline the following:

- Both currency indices and gold prices contain upward trends which have to be differenced to obtain stationary time series, which can be compared using co-integration theory.
- ZARX has been calculated as an inverse geometric average in comparison to RAIN which has been calculated as an inverse arithmetic average of the South African Rand. The former contains dynamic hedging characteristics, while the latter contains static currency hedging characteristics.
- A positive, lagged correlation exists between the changing gold prices and ZARX and RAIN currency indices. The RAIN may help to determine when to move to gold.
- Analyzing the stationary trend of the error terms using unit root tests indicated that no co-integration exists between changing gold prices and the ZARX and RAIN currency indices.
- The creation of a portfolio of currencies into a single currency index does not correlate with changing gold prices.

When looking at tables 9 and 11, it becomes apparent that investors should not base decisions solely on the positive correlation relationship between changes in rand currency indices and the gold price. A correlation measure in these tables is represented by the R squared. As no co-integrating relationship exists for either of the South African Rand currency indices in relation to the changing gold prices, the R squared measure could be a function of spurious correlations. This can give rise to unreliable forecasting and wrong decision making if only the macroeconomic environment of South Africa's trading partners are considered.

Some recommendations for further research include:

- The use of the Absa NewRand Index opposed to South African Rand Index.
- The use of the Absa NewGold Index, gold share prices instead of the gold price per bullion.
- Use co-integration tests to analyze which sectors of the ALSI have an effect on ZARX and RAIN in the long term.
- Test the co-integration of other types of changing commodity prices such as oil.
- Use oil price data which is the average of U.K., Brent, Dubai and West Texas Intermediate.
- Include foreign direct investment (FDI) as a weight in the calculation of the ZARX and compare with RAIN.
- Include a double export weight in the calculation of ZARX trade weights to account for any third market effects. The trade weights in this study only account for the international position of the Rand in relation to its trading partners.

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THE ASSOCIATION BETWEEN STRATEGIC COST MANAGEMENT AND ENTERPRISE RISK MANAGEMENT: A CRITICAL LITERATURE REVIEW

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Abstract

Reviewing literature and application of strategic cost management (SCM) and enterprise risk management (ERM) are critical and significant for corporate management to facilitate top management to employ appropriate SCM and ERM processes and systems especially in occurrence of constant and regular business turn around, crises and turbulence in recent time in world of business. This paper revisits and reviews the association between strategic cost management and enterprise risk management. Based on this review, the following propositions were developed; firm, which adopted SCM, is more likely to adopt ERM approach, there is a positive relationship between audit type and the association between ERM and SCM, and there is a positive relationship between company size and the association between ERM and SCM. The association between ERM and SCM differs from industry to another. The study also develops a framework for SCM composes of the following items: SWOT analysis, benchmarking, competitive advantage, value chain analysis, implement strategy that reduce cost during the value chain analysis by using target costing, accounting based-costing, accounting based-management, just in time, total quality management, life cycle, theory of constraints, and measure performance by using balanced scorecard.

Keywords: Strategic Cost Management, Enterprise Risk Management, SWOT Analysis, Benchmarking, Just in Time, Total Quality Management, Life Cycle, and Theory of Constraints

JEL Classification: G29, G30, M14

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1. Introduction

Effectively managing or controlling the factors that cause risk can result in market leadership, increasing a company's growth and investor confidence (Meier, 2000). Moreover, there is evidence in terms of theories that show how value can be created from the adoption and application of risk management and how risk can also destroy corporate value (Doherty, 2000). Risk management has indeed now become a global issue and is considered highly essential for all types of organizations in the world; however, risk management that began as a field in the early 1950s was limited in scope to pure loss exposures only where risks were managed through controlling and financing techniques. Insurance has been the most popular financing approach in managing corporate risk. It has been used to manage property, liability and related insurable risks. This approach is known as traditional risk management. In the traditional way of risk management, organizations manage risk by silos, or risk by risk. This has caused an overlapping and excessive cost in organizations and it does not provide an overall view of risk reporting to senior managers and boards of directors (Lam, 2003). Traditional risk managers also do not consider shareholder value and responsibilities to investors in their risk management decisions (Meier, 2000). In this regard, businesses and industries have realized the importance and necessity of managing risks on an enterprise-wide basis. DeLoach (2000, p.5) defines enterprise risk management (ERM) as:

> "A structured and disciplined approach that aligns strategy, processes, people, technology and knowledge with the purpose of evaluating and managing the uncertainties the enterprises faces as it creates value".

The definitions signify that ERM is a comprehensive approach of risk management by looking at a portfolio view of risks. A process that

aligns with the company's strategy; and involves employees at all levels of the organization. Its implementation is for the purpose of increasing shareholder value. The eight interrelated components of ERM are identified as follows: internal environment, objective setting, events identification, risk assessment, risk response, control activities, information and communication and monitor (Abdul Manab et al., 2010, pp. 240-241). Clearly these are significant departure from official views of internal control and they encompass the basic and operational management systems needed to plan and control the business enterprise. Many of the individual concepts encompassed by strategic cost management are often directly relevant in this context. A full supply – chain perspective brings into the analysis all the stages in the value – creation and value delivery model (Gunasekaran, 2003; Porter, 1985).

Economic value added (EVA) and value based management (VBM) are tools for assessing the overall ERM, however, value engineering (VE) and activity based costing (ABC) \ activity based management (ABM) assess the full costs at each stage of supply chain. Also, customer – value analysis is necessary to assess the end users in the supply chain and target cost can be necessary to reverse the logic flow and ensure that the firm converts the customer - value proposition into allowable time –value adjusted cost to the customer of the firm across all the process stages consistent with earning an adequate return on invested capital (Shank & Miguel 2009, p. 85).

This study aims to determine the association between strategic cost management (SCM) and enterprise risk management (ERM) factors, as there is no prior study investigated this relationship. The remaining of the paper is structured as follows. Section 2 discusses enterprise risk management theories and practice. Next section discusses strategic cost management. Section 4 provides propositions that are derived from association between SCM and ERM, and also types of audit, company and industry. These propositions are developed based on current literature in SCM and ERM practices and approaches in companies. The final section provides conclusions and suggestions for future research.

2. 2.Enterprise risk management (ERM)

2.1. What is enterprise risk management (ERM)?

According to the Committee of Sponsoring Organization of the Tread-way Commission, the enterprise risk management is a process affected by an entity's board of directors, management and other personnel applied in strategy setting and across the enterprise, designed to identify potential events that may affect the entity and manage risk to be with its risk appetite, to provide reasonable assurance regarding the achievement of entity objectives (COSO, 2004, p. 3). Moreover, the Institute of Internal Audit (IIA) defines ERM as:

> "A rigorous coordinated to assess and respond to all risks that affect the achievement of an organization and financial objectives including all communication risks from an organization – wide perspective involve making strategic decisions (Kimbrough, 2006, p. 12)".

Gordon and Loeb (2009, p. 302) note that ERM refers to overall process of managing an organization's exposure to uncertainty with particular emphasis on identifying and managing the events that could potentially prevent the organization from achieving its objectives and it is an organization concept that applies to all levels of the organization. Furthermore, the Casualty Actuarial Society Committee (CASC) defines ERM as a discipline by which an organization in an industry assesses, controls, finances and monitors risk from all sources for the purpose of increasing the organization short and long term value to its stakeholders (Tseng, 2007, p. 49). Gupta (2004) establishes that ERM is rapidly emerging as a powerful tool that facilitates better decision making and organizations are now choosing to implement an ERM process to ensure that a uniform approach to risk identification measurement and treatment is utilized across the organization. Lam (2003) identifies the advantages of adoption ERM as follows: effectiveness, improvement in quality, reporting and business performance (Gupta 2011, p. 124).

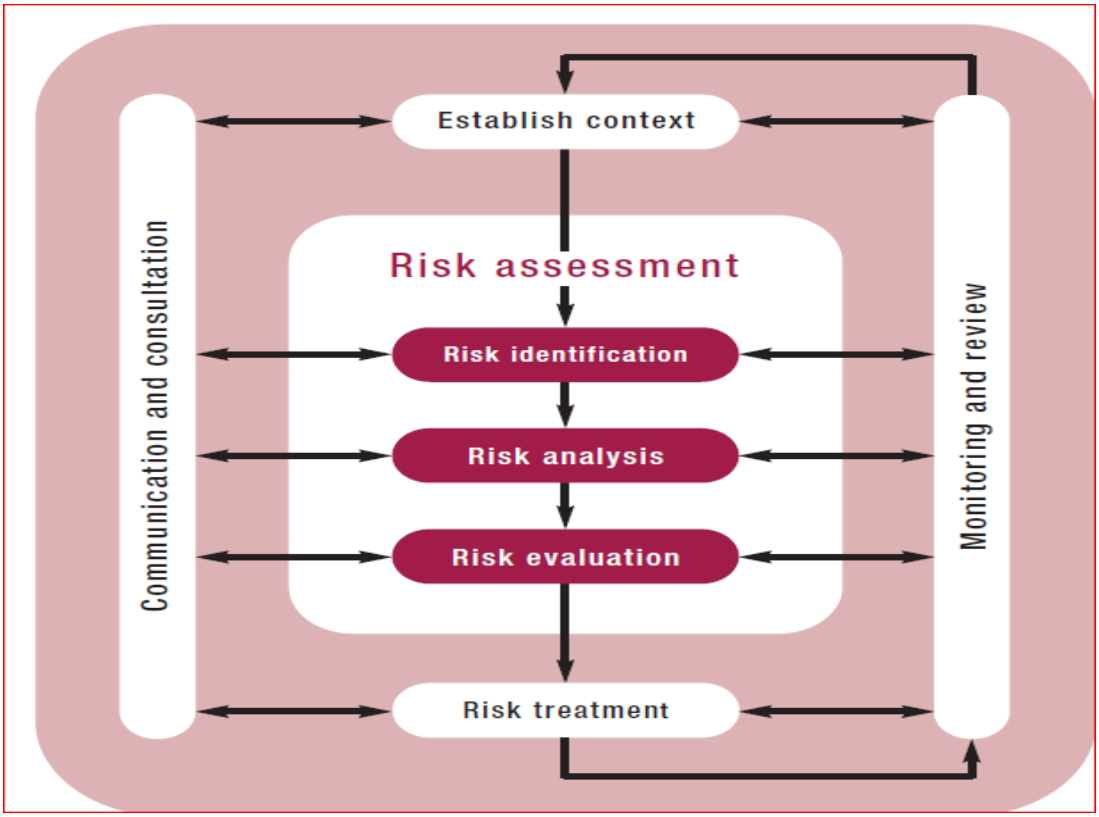
2.2. ERM process

Ackerman (2001) suggests seven steps to implement an effective ERM program for any organization, these steps are as follows: assemble and educate a cross functional learn representing each significant functional area of business, identify risks and opportunities, determine risk tolerance, identify correlations among risks and opportunities, prioritize risk and opportunities, determine appropriate actions for mitigating risk or exploiting opportunities as necessary, and put an ERM program system to monitor and respond to events and trends on a continual basis (Rao, 2007, p. 171).

Furthermore, Ackerman (2001) lists the following steps for ERM: identify the question, identify risks, risk measurement, formulate strategies to limit risk, implement strategies, and monitor (D'Arcy 2001, p. 20).

The International Organization for Standardization (ISO) provides a version of the risk management process as illustrated in Figure 1.

Figure 1. Risk management process



Source: ISO 31000, 2009.

The Committee of Sponsoring Organization of the Tread-way Commission (COSO) develops a framework that describes key risk management principal and concepts. The COSO framework describes risk management as an ongoing, enterprise-wide process that involves eight interrelated components to establish the foundation for effective enterprise risk management (Donnell, 2005, p. 178). (1) The organization must create an internal environment that fosters a commitment to competence, provides discipline, and articulates governance structures within the risk culture of the firm. (2) With a sound foundation in place, management can evaluate their objective setting procedures to be certain that, throughout the organization, business process performance objectives are linked to and support the strategic objectives of the enterprise. (3) Management must undertake an event identification phase to develop or update a list of specific events that, if they occur, could influence business process performance. (4) For each event, management performs a risk assessment by evaluating the likelihood that the event will occur and estimating the probable impact of the event if it does occur. (5) Management must select and implement an appropriate risk response for all events, based on the risk appetite of the firm and the cost/benefit relationships for the various response options. (6) Management must establish control activities to help ensure that those risk responses are properly executed. (7) To manage this network of processes, the organization must establish channels for information and communication that enable personnel to carry out their responsibilities that provide management with feedback about the extent to which the organization is achieving its objectives. (8) To govern the risk management process, the organization must establish a program for monitoring how well each component is functioning and for tracking performance over time (Dickinson, 2001).

Burnaby and Hass (2009) illustrate the following steps to implement ERM: mandate from the top, decide on control framework, determine all risks, assess risk, business unit objectives and performance measures, objectives and control summary, monthly ERM reporting system, analysis by ERM department, and continuously monitoring the process.

Finally, Muralidher (2010) proposes a framework for best practices of ERM in oil and gas companies. Muralidher (2010)'s framework includes the following steps. (1) establish an unequivocal oil governance framework, (2) adjust the CEO"s alters ago, (3) create a contagious committee to ERM for an effective risk management with an advocate pool, (4) instigate a paradigm shift in internal auditing process, (5) align the internal auditing process with ERM establish an audit charter that declare the alignment of the ERM in order to address the audit focus on critical business areas, (6) upload the corporate risk register across the business value chain, (7) manage the entity

risk quality with appropriate risk communication, (8) establish unequivocal risk preference across the board set out a common risk language conveying a threshold for material risk for process the upstream and downstream business value chain, (9) integrate a pragmatic bottom–up and top down approach to risk ownership, and (10) embed smart risk culture by integrating ERM strategy planning process exploit the natural links of ERM and strategy planning.

2.3. Determinants of ERM

Hoyt and Liebenberg (2011) find that ERM usage to be positively related to factors such as firm size and institutional ownership and negatively related to reinsurance use, leverage and assets value. By focusing on public traded insurers they estimate the effect of ERM on Tobin's standard and they also demonstrate that there is a positive relationship between firm value and ERM.

Pagach and Warr (2011) examine the characteristics of firm that adopt ERM by using the hiring of chief risk officer (CRO) as a proxy for ERM adoption, they find that firms that are larger, have more volatile operating cash follow and greater institutional ownership are more likely to initiate an ERM, in addition when the chief executive office has incentives to take risk, the firm is also more likely to hire CRO.

Beasley et al. (2005) examine factors associated with the stage of ERM implementation at a variety of US and international organization based on data collected from 123 organization, they find that the stage of ERM implementation is positively related to the presence of a chief risk officer, board independence, CEO, the presence of 4 big auditors, entity size and entities in the banking education and insurance industries, they also find US organization to have less developed ERM process than international organization.

Kleffner et al. (2003a) examine the use of enterprise risk management (ERM) by Canadian companies. They investigate the characteristics that are associated with the use of ERM, obstacles that companies face in implementing ERM, and what role, if any, corporate governance guidelines have played in the decision to adopt ERM. The results indicate that 31 percent of the sample had adopted ERM and that reasons for adopting ERM include the influence of the risk manager (61 percent), encouragement from the board of directors (51 percent), and compliance with Toronto Stock Exchange (TSE) guidelines (37 percent).

The major deterrents to ERM were an organizational structure that discourages ERM and an overall resistance to change. Although only about one-third of companies indicated that they had adopted an ERM approach, evidence was clear that a larger portion of the sample was moving in that direction, as indicated by what changes they had observed in their companies in the past three years. These include the development of company-wide guidelines for risk management (45 percent), an increased awareness of nonoperational risks by operational risk management personnel and an increased awareness of operational risks by non operational risk management personnel (49 percent), more coordination with different areas responsible for risk management (64 percent), and more involvement and interaction in the decision making of other departments. Contrary to what they expected, there was not a significant difference between firms that are listed on the TSE versus those that are not in terms of the propensity to use ERM. However, the fact that 37 percent of firms indicated that the TSE guidelines were influential in their decision to adopt ERM provides some evidence that the guidelines are influencing companies' risk management strategies.

Using data from 825 organizations, Paape and Spekle (2010) examine the extent of ERM implementation and the factors that are associated with cross-sectional differences in the level of ERM adoption, and also investigate specific ERM design choices and their effect on perceived ERM effectiveness. They find that the extent of ERM implementation is influenced by the regulatory environment, internal factors, ownership structure, and firm and industry-related characteristics. They find that organizations generally subscribe to a key premise of the COSO ERM framework (i.e. that ERM should address the full set of risks that affect the entity's strategic, operational, reporting, and compliance objectives). Their results also raise some concerns as to the COSO framework as they find no evidence that application of the COSO framework improves ERM effectiveness, neither do they find support for the mechanistic view on risk management that is implicit in COSO's recommendations on risk appetite and tolerance.

Smith (2009) studies the relationship between ERM and the complexity and board of directors monitoring by using a sample of 112 firms disclosing the implementation of ERM in their 2005 10k and 10q reports. The results show that for high performing firm: industry competition, firm complexity, firm size and board monitoring have a significant effect on the effectiveness of the ERM and there is no relationship between ERM and environmental uncertainty. While for the firms with low perform none of the contingency variable shows a significant effect on ERM. These results suggest high performing firms are taking contingency variable more seriously than the other firms in their implementation of ERM (Smith, 2009).

3. Strategic cost management (SCM)

3.1. What is SCM?

Cooper and Slagmulder (1998a, p. 14) argue that SCM is the application of cost management technique so they simultaneously improve the strategic position of a firm and reduce costs. Furthermore, Cooper (1995) argues that the strategic cost management needs to include all aspect of production and delivering the product: the supply of purchased parts, the design of product s and the manufacturing of these products, so strategic cost management should be inherent to each stage of a product's life cycle (i.e. during the development, manufacturing, distribution and during the service lifetime of a product).

According to Welfie and Keltyka (2000, p. 33), SCM is an area that holds exiting possibilities for accountants, they also emphasized that SCM attempts to improve the strategic position of an organization and reduces cost at the same time and it is important because global competition means that firms must be constantly aware of their strategic position. Therefore, an organization must compete in the area of cost, quality customer services and flexibility with any cost reduction effort contributing to an improved strategic position (Smith, 2009).

Horvath and Brokemper (1998, p. 58) reported that SCM has emerged as a key element to attain and sustain a strategic competitive advantage through long term anticipation and formation of cost level, cost structure and cost behavior pattern for product, process and resource, for this purpose, SCM must provide manager with different information about strategic cost, sees product process and resource themselves as creative advantage this goals may not be achieved based on traditional cost management, they must determine and analysis long term cost determinants and their influence on cost levels, cost structure and cost behavior pattern, finally SCM should begin with the participation during the R&D and design stage of the product in order to avoid the cost early in the product lifecycle (El-Kelety, 2006, pp. 61-64).

In addition Lorenzoni et al. (1999 p.13) define SCM as a view that cost management must be tackled broadly with explicit focus on the firm strategic positioning, its overall value chain and the full set of cost driven for the firm. Chivak (2007, p. 37) notes that SCM is the process of integrating cost management within the company's strategic plan in order to ensure that cost management is part of company's operating procedure aimed at the provision of the best possible product\service with the amount of financial resource available, he claims that in order to implement a strategic cost management approach effectively, companies should change the way they do business, in other words, implementing a SCM approach require change management that is underpinned by the following ways:

A process view rather than a function view of the organization.

A multi –functional team approach rather than individual approach.

A broader perspective that includes an external view and not simply an internal view of cost.

Shank (1989) argues that the emergence of SCM results from a blending of three underlying themes that are each taken from the strategic management literature, the three themes are: Value chain analysis, strategic positioning analysis, and cost driver analysis.

3.2. SCM framework

El-Dyasty (2007) establishes a framework to accomplish SCM which encompass four phase as follows: First, establish critical success factors by using strength, weakness, opportunities, threats analysis (SWOT). Second, competitive advantage by identify strategy, determine performance measure and design the balanced scorecards. Third, value chain analysis and implementing selected strategy in addition, measure costs during implementation of selected strategy through product life cycle, by using the following tools: target costing, just in time and total quality management. Finally, performance is measured according to the four dimensions comprised in balanced scorecard.

Previous research (for example, see Blocher et al., 2002; Dekker, 2003; Morse et al., 2003) uses many tools to accomplish SCM that include: value chain analysis, activity based costing (ABC), competitive advantage, target costing, total quality management, just in time, SWOT analysis (a strategic planning method used to evaluate the strengths, weaknesses, opportunities, and threats involved in a project or in a business venture), benchmarking, balanced scorecard, theory of constraints, and continuous improvement (El-Dyasty, 2007, p. 9). El-Kelety (2006) uses the following themes as instruments and key support: ABC, activity based management (ABM), target costing, life cycle costing, and benchmarking.

Therefore, our study develops a framework for SCM comprises of the following items (see Figure 2): SWOT analysis - Benchmarking - Competitive advantage - Value chain analysis - Implement strategy that reduce cost during the value chain analysis by using target costing, ABC, ABM - Just in time (JIT) - Total quality management (TQM) - Life cycle - Theory of constraints - Measure performance by using balanced scorecard (BSC).

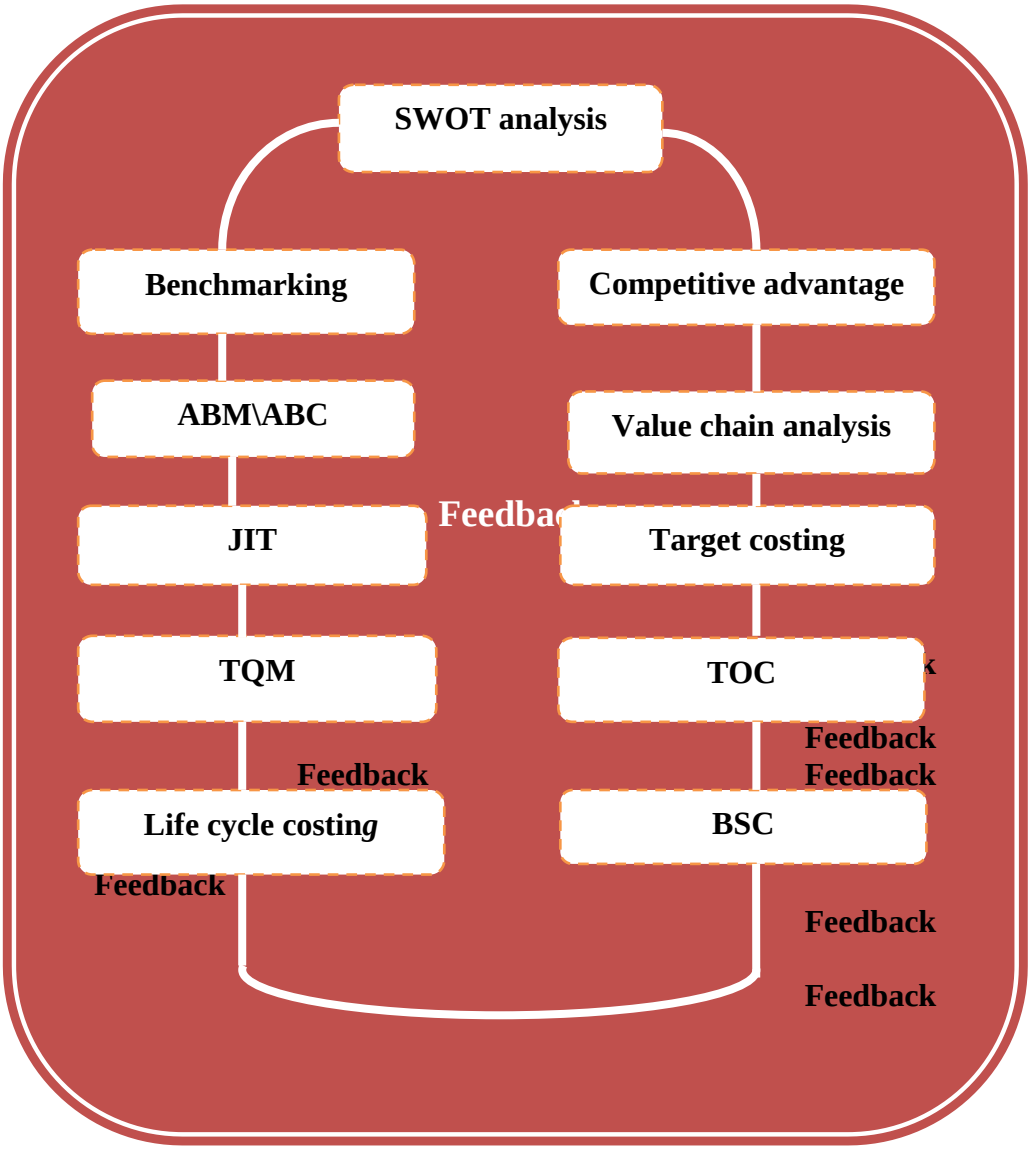
Table 1 provides more explanation of our framework items.

Table 1. SCM suggested framework

Term/concept	Definition
SWOT analysis	It is a systematic procedure for identifying a firm's critical success factors: its internal strength and weakness and its external opportunities and threats SWOT analysis guides the strategic analysis by focusing attention on the strength, weakness, opportunities and threats critical to the company ′success, it also serve as a means for obtaining greater understanding and perhaps consensus among managers regarding the factors that are critical to the firm success (Blocher et al., 2002, pp.37-39).
Benchmarking	Furey (1987, p. 30) defines benchmarking as an analytical process for rigorously measuring a company's operation against the best in class companies inside and outside its markets. According to Mittelstaedt (1992, p. 301), benchmarking is the process of measuring a company's current business operation and comparing them to those of best practices companies. Fitz-enz (1993, p. 28) defines benchmarking as an organized method for collecting data that can be used to improve internal administration, product manufacture, sales efficiency or services delivery. Benchmarking also is defined as the continuous of measuring our products, services and practice against those of our toughest competitors or companies renowned as leaders (Bernard, 2005; Jeffrey & Yasin, 1998; Camp, 1995). Wong and Wong (2008, p. 27) define benchmarking as a continuous, systematic process for evaluating the products, services and work processes of organization that are recognized as representing best practices for the purpose of organizational continuous improvement.
Competitive advantage	Porter (1985) has proposed two generic ways in which business can develop competitive advantage: • Low cost (leadership): the primary focus of this strategy is to achieve low cost relative to competitors, cost leadership can be achieved through approach such as economies of scale in production, learning curve effect, tight cost control and cost minimization in area such as R & D services, sales forces. • Differentiation: the primary focus of this strategy is to differentiate the product offering to create something that customer perceive as unique. Approaches product differentiation include: brand loyalty, superior customer services, dealer equipment, product design and product features or product technology (Govindarajan and Shank, 1992, p. 2).
Value chain analysis	Durisova (2010) defines value chain analysis as a strategic cost management method that involve the process of decomposing the firm activities from suppliers to final customer into strategically relevant activities as a way of managing costs, additionally segmenting the organization into activities allows the organization to identify the activities that are a sources of competitive. Karki (2008) identifies three steps for value chain analysis as follows. • Conduct the value chain analysis is to break down the key activities of the company according to the activities of the company entailed in the value chain framework. • Assess the potential for adding value through the means of cost advantage or differentiation. • It is imperative for the analyst to determine strategies that focus on those that would enable the company to attain sustainable competitive advantage.
Activity based management \ costing (ABM\ABC)	Activity based management (ABM) is a management tool for redesigning business process in order to obtain dramatic improvements in performance measure such as cost and quality. ABM consists of two primary viewpoints: a cost view and a process view. Under the cost view, ABM is a cost accounting system (called activity based costing), it is a system that is used to more accurately determine the full cost of services and products, this system allows for the cost analysis of services activities cost of core activities such as production process and cost of products, services and other cost objects. Under the process view, ABM is used to develop financial and non financial performance indicators for the output of each activity center (Trussel & Bitner, 1998, pp. 441- 442).
Target costing	Target costing begins with research into the attribute and quality customers want in a prospective product and the price they are willing to pay for these features. The next step involves subtracting the profitability required by the firm to manufacture a product from its market price to determine its target or allowable cost. All subsequent efforts of target costing are focused on achieving a product's allowable cost. If a product's cost can be achieved, it is produced, otherwise, the product is rejected as financially infeasible to manufacture. Early target costing researchers used survey methodology to examine the attributes of firms adopting target costing. In surveys of Japanese and Dutch firms, Tani et al. (1994), Tani (1995), and Dekker and Smidt (2003) respectively find that the primary reason cited for using target costing was cost reduction. Other reasons include improvement product quality, achieving timely introduction of new products and improving communication, analysis of target costing firms revealed that they were often in highly competitive market. Hibberts et al. (2003) find that firms with a strategy of product – differentiation and strong competition were likely to use target costing. Kee (2010, pp.204 - 205) notes that having a cost target for new product development led to lower cost without impairing design quality or development time.
Just in time (JIT)	Blocher et al. (2002, p. 100) define JIT as a comprehensive production and inventory management system that purchase or produce materials and parts only as needed and just in time to be used at each stage of the production process. JIT is a philosophy that can be applied to all aspects of business including purchasing, production and delivery. Its goals are to purchase materials and parts just in time to be placed into manufacturing process and to some of the benefits manufactures have realized from JIT implementation are elimination of waste, improved communication, reduced purchasing costs, reduced lead time, improved quality, improved productivity and improved customer responsiveness, within a manufacturing setting, the strategic deployment of such a philosophy works only if all of the organizational subsystems contribute to the implementation (Wafa & Yasin, 1997). Moss, (2002) finds that the more comprehensive JIT implementation, which is greater the array of JIT practice, used by a firm, the greater the returns.

Total quality management (TQM)	Kaynak (2003, p. 406) defines TQM as a holistic management philosophy that strive for continuous improvement in all functions of an organization and it can be achieved only if total quality concepts is utilized from the acquisition of resources to customer services after the sales, according to Antomaros (2010, pp. 28 - 30), TQM is a philosophy of continuous quality improvement that yields total customer satisfaction and therefore long term organizational viability, he added that delivers total customer satisfaction through enhanced quality when something is perceived to be of good quality, it has realized definable and distinguishable characteristics that are preferred or desired. These characteristics can be either physical or behavior in nature ensuring that these characteristics are present require control mechanisms and ultimately some sort of third party satisfaction.
Theory of constraints (TOC)	Goldratt and Cox (1986) popularize TOC whose primary performance measure is throughput per constraints unit. TOC focus on improving throughput by managing bottlenecks or constraints in the system. TOC philosophy is built on the premise that every organization faces at least one constraint (Fu, 2000, p. 68). TOC develops a set of methodologies is identify and optimize such constraints, this methodology has been used as a guideline for the application of TOC various area including product distribution, project scheduling and control (Campbell, 1995). According to Sheu et al. (2003, p. 434), the TOC methods suggest three operational measures including throughput, inventory, and operational measures. • Throughput is defined as the revenue generated by the system through the production of sold product. • Inventory is mean as any cost incurred for items retained in the organization including materials as well as fixed assets. • Operating expenses include direct labor and manufacturing overhead as well as selling and administrative cost.
Life cycle costing	It is a management technique used to identify and monitor the cost of a product throughout its life cycle. The life cycle consists of all steps from product design and purchase of raw materials to delivery and service of finished product. These steps include: research and development, product design including prototyping, target costing and testing, manufacturing, inspecting, packaging and warehousing, marketing, promotion and distribution and sales and services (Blocher, 2002, p. 17). Taylor (1981) and Woodward (1997) identify two distinct dimensions of life cycle costing: estimating cost on a whole life cycle basis and monitoring the occurred cost through a product's life cycle. Life cycle estimation is to understand the product's live cycle and the activities that are performed during its phases from the customer's point of view; the focus in life cycle costing is on the costs incurred through operation, maintenance, support and disposal of products. Life cycle costing is concerned with optimizing total costs in the long run, which require considering trade – off between different cost elements during the life phase of a product, for instance, the initial purchase cost may secure a reduction in the maintenance cost in the long run. An important feature of life cycle costing is that the effects of indirect costs are taken into consideration. To the estimation of future costs, an essential feature of live cycle costing during a product's life cycle (Taylor, 1981; Woodward, 1997). It is essential to know the cost incurred for a particular product or service and to understand the behavior of different cost element in the different phases of the life cycle. The aim is to monitor the actual costs against predicted life cycle costs and to determine the cumulative costs throughout a product's life cycle (Lindholm and Suomala, 2005).
The balanced scorecards (BSC)	Kaplan and Norton (1992) introduced and developed a new performance measurement and management system called the balanced scorecards, the BSC consists of measures in the following categories: financial, customer, internal business process and learning and growth perspectives. The majority of measures in the last three categories are non –financial measure, the four categories are linked by cause and effect relationship (Kang, 2008, p. 15). Prior literature has identified a number of purposes for which firms use the BSC (Beasley et al., 2006). Malmi (2001) finds two different types of BSC usages. Some firms used the scorecard as a management by objectives system, where targets were used and rewards were based on achieving those targets. In contrast, other firms used the BSC as an information system to provide their managers with a tool to improve performance. Speckbacher et al. (2003) develop classification of three different types of BSC usages that firms are going through sequentially. When firms develop a scorecard they often start with a strategic performance measurement system, which includes a set of financial and non-financial measures. Afterwards, the cause and effect relationships between the different (sets of) measures are developed further to translate the firm strategy to operational activities. This is the type II BSC. Finally, the most sophisticated type of use is a fully-developed scorecard that implements firm's strategy through communication, action plans, and incentives. Many firms never succeed in using the scorecard in this particular type III way. Of the 42 firms in the sample of Speckbacher et al. (2003) 21, 9 and 12 firms used the BSC in a type I, type II or type III fashion, respectively. In a sample of 92 Australian firms, Bedford et al. (2006) found that 43.5% don't use cause and effect logic in the design of BSCs, 7.6% use it only among perspectives, 14.1% only among measures and 34.8% between both measures and perspectives. 52% of the firms tied the BSC to incentives for higher level managers, whereas, this was 41% for staff employees. Wiersma (2009) argued that BSCs that are used at multiple levels are better able to create a common language in which the strategy developed at the top of the firm or business unit is operational led in performance metrics. Moreover, The scorecard was used most often at the corporate level (96% of users) and at the business unit level (91%). Only 62% used it at the individual level (Wiersma, 2009, p. 241).

Figure 2. SCM suggested framework



4. The Association between SCM and ERM

4.1. SCM and ERM approaches

Strategic cost management demands a risk management perspective to manage risk and see the future risk before it arrives. Recent examples include fuel price surges that have disrupted airline profits, reduced stock market valuations that have affected pension costs for firms in industries that employ defined contribution plans, and disruptive technologies (e.g., digital cameras) that make earlier generation technologies obsolete. In sum, when risks are defined as internal and external events that may materially affect profits, modern finance theory on risk management demands that we also consider uncertainty surrounding costs as part of strategic cost management.

Womack and Jones (1994) examine how risk activities are implicated in firm's cost structure for example in the area of operations and services management, the concepts of reducing process variability and enhancing process flexibility themes of lean manufacturing, these strategies offer cost savings from eliminating safety stocks and work in process inventories that support process variability rather than exogenous demands variability. Following prepositions have been derived based on research, practice and or literature in SCM and ERM approaches, audit type, company size, and industry type, we develop.

Therefore, there is a proposition that Firm, which adopted strategic cost management, is more likely to adopt ERM approach.

4.2. Audit type

There is an extensive academic literature that examines audit quality. Despite presenting some limitations; most of those studies classify the largest

international accounting firms, now known as the Big Four firms, as high quality auditors. It is possible that organizations committed to engaging such high quality auditors also are more committed to risk management (Beasley et al. 2005, p.524).

Hence, there is a positive relationship between audit type and the association between ERM and SCM.

4.3. Company size

There is evidence that large firms are more likely to have ERM programs in place (Colquitt et al., 1999; Liebenberg and Hoyt, 2003; Beasley et al., 2005). As a result, there is a positive relationship between company size and the association between ERM and SCM.

4.4. Industry type

Beasley et al. (2005) find more extensive ERM implementation in the banking, education, and insurance industries. Financial institutions face significant regulation and financial reporting risks (Beasley et al., 1999). Banks regulated industries) and to invest more heavily in the internal audit function (Carcello et al., 2005). Banks have been leaders in ERM adoption due to the emphasis on risk management in global regulation (Basel II, 2004) as a way to reduce a bank's minimum capital requirements.

The U.S. Federal Reserve Board has recently announced expectations for expanded ERM processes in U.S. financial institutions (Bies, 2004). Educational institutions also face significant regulation and have been strongly encouraged to adopt ERM. The higher education community is not unlike the business world regarding risks it faces, and institution wide risk management makes good business sense for institutions of higher learning (Whitfield, 2004; Beasley et al., 2006, p. 7-8).

Consequently, the association between ERM and SCM differs from industry to another.

5. Conclusion and future research

This paper investigates the relationship between strategic cost management and enterprise risk management. Therefore the following propositions were developed: firm, which adopted SCM, is more likely to adopt ERM approach, there is a positive relationship between audit type and the association between ERM and SCM, also there is a positive relationship between company size and the association between ERM and SCM. Finally, the association between ERM and SCM differs from industry to another. Moreover, the study develops a framework for SCM composes of the following items: SWOT analysis - Benchmarking - Competitive advantage - Value chain analysis - Implement strategy that reduce cost during the value chain analysis by using target costing, ABC, ABM - Just in time (JIT) - Total quality management (TQM) - Life cycle - Theory of constraints - Measure performance by using balanced scorecard (BSC).

It concludes that the primary drivers of ERM are said to be corporate governance and other regulatory requirements and pressures, and management and investor demand for greater understanding of strategic and operating risks (Abdul Manab et al., 2010). The benefits of full ERM implementation are increased corporate management governance accountability and better governance practices, greater managerial understanding of and consensus about corporate strategy and strategic cost management. In addition, in some cases, higher credit ratings and hence a lower cost of capital. Depending on the stage of ERM and SCM implementation, the tools and techniques to measure the impact of strategic risks appear to be differed. For companies that employ advanced ERM and SCM systems and processes for their strategic risk management and decisions, the most frequently used tools and techniques are combination of tools and techniques such as TQM, JIT, value chain analysis, ABC, TOC, BSC, key risk indicators, self-assessments, and scenario analysis.

There are several implications of the study's findings for both academics and/or practitioners. The study contributes to the accounting literature and more specifically to the literature on SCM and ERM. The findings of this study will advance our understanding of relationship between SCM and ERM by demonstrating how company's characteristics and other factors could influence the level of a company's SCM and ERM implementation. The association between ERM and SCM differs from industry to another. Moreover, companies committed to engaging high quality auditors are more committed to risk management (Beasley et al. 2005, p.524).

While communication and information technology is paramount in any informed decision making processes, it is evident that fairly little attention has been given to information and communication technologies as to measure its impact upon SCM and ERM design and capability, lack of much literature on SCM and ERM, and sustainability (Burnaby & Hass (2009).

Furthermore, there has been relatively little research on SCM and ERM upon control and culture (Muralidher, 2010). Therefore, it seems essential to place more emphasis on research which attends to the relationship of SCM and ERM practices and theory which will require more embedded and collaborative research processes (Berry et al. 2009). Further research could be undertaken to examine company's characteristics and other factors that might affect the relationship between SCM and ERM. It might be of interest to study the effect of internal control, the existence of internal auditor on SCM and ERM implementation. It might also be important to

examine the effect of corporate governance internal and external mechanisms on the association between SCM and ERM.

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APPLICATION OF SYSTEMS ANALYSIS AND OPERATIONS RESEARCH METHODOLOGY IN THE EXECUTION AND CONTROL OF BUSINESS LOGISTICS PROCESSES

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Abstract

This article outlines the analytical basis of logistics. The concept of logistics management is described in a business context, and its strategic, tactical and operational tiers are discussed. The relationship that exists between systems analysis and logistics management is indicated. The seven consecutive steps in the systems analysis process are outlined. The role and essence of operations research in systems analysis and business logistics decision-making are described. The most pertinent operations research applications in the field of logistics management, as well as the analytical competencies that a logistician should possess, are identified. The role that operations researchers can fulfil in the successful execution and control of business logistics processes are detailed.

Keywords: Business Logistics Management, Control, Operations Research, Supply Chain Management, Systems Analysis

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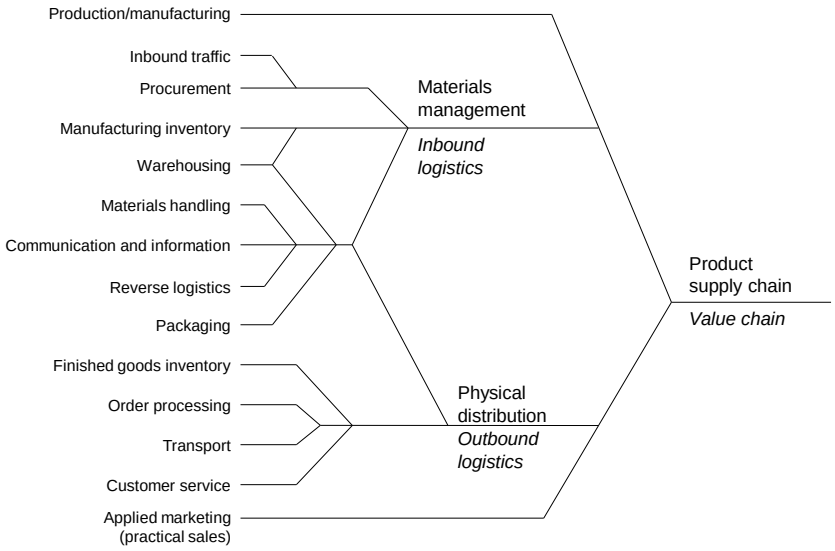
1 INTRODUCTION

The purpose of this article is to outline the coherence that exists between logistics management and systems analysis, and to indicate the critical role that operations researchers can fulfil in the efficient and effective execution and control of business logistics processes.

The Council of Supply Chain Management Professionals (CSCMP), the world's major professional organisation for supply chain management and logistics, defines logistics management as 'that part of supply chain management that plans, implements and controls the efficient, effective forward and reverse flow and storage of goods, services and related information between the point of origin and the point of consumption in order to meet customers' requirements' (CSCMP 2011). Figure 1 indicates that logistics management, production/manufacturing and applied marketing (i.e. practical sales) collectively constitute supply chain management. As Figure 1 shows, the logistics management process can be divided into materials management (i.e. inbound logistics activities) and physical distribution (i.e. outbound logistics activities). Systemic cohesion among the activities shown in Figure 1 is achieved through coordinated and integrated strategic, tactical and operational management, shown in Figure 2 (Pienaar & Vogt 2009: 12).

Figure 1. Composition of logistics and supply chain management activities



Source: Pienaar & Vogt 2009: 12

The definition of the concept of logistics management supplied above is the one that is generally accepted in contemporary business logistics management literature. Important implications of the definition are discussed below.

First, as the definition indicates, logistics management encompasses the functions required to (1) prepare (plan); (2) organise and implement); and (3) execute and control the activities of a firm when distributing materials or finished products to customers (Bowersox et al. 2010: 327). Preparation and planning activities include the selection of facility sites (including type, number, location, size and capacity); durable equipment needed to facilitate the flow of products through the logistics network; distribution parties, including wholesalers, retailers and third-party service providers; and carriers (including choice of transport mode) required to offer services at the level demanded by customers to achieve the goals of the firm. The organisational and implementation aspects of logistics management include, firstly, the allocation and positioning of resources, and, secondly, the scheduling of production and distribution activities to respond to customer needs in an efficient manner in order to achieve the firm's objectives. Execution includes operational aspects (i.e. ongoing daily activities, such as stock keeping, routing trips, and scheduling deliveries, vehicles and crews), and control includes monitoring and reviewing performance (such as quality of service, expenditure, productivity and asset utilisation) to ensure that the logistics process satisfies customers effectively, the organisation's resources are deployed efficiently, and corrective action is taken when performance is not in line with goals (see Figure 2).

Second, because logistics management revolves around planning, organising and executing/controlling the logistics process, it encompasses many of the firm's activities, from the strategic level to the tactical and operational levels (see Figure 2). Logistical decisions are typically classified in the following way (Ghiani et al. 2004: 18; Simchi-Levi et al. 2004: 12):

- The *strategic* level (i.e. preparation and planning) deals with decisions that have a long-lasting effect on the firm. Because data is often incomplete and imprecise, strategic decisions are generally based on aggregated data (obtained, for example, by grouping individual products into product families, and aggregating individual customers into customer zones).
- The *tactical* level (i.e. organisation and implementation) includes decisions that may be updated at various intervals from monthly to annually. Tactical decisions are often based on disaggregated data.
- The *operational* level (i.e. execution and control) refers to day-to-day decisions, which are customarily based on detailed data.

Third, an objective in logistics management is to consistently be efficient and effective across the entire system. This objective can be achieved by minimising system-wide costs, from transport on the one hand to warehousing and keeping inventory of raw materials, semi-finished goods and finished products on the other. Therefore, the emphasis is not simply on

selecting the cheapest or swiftest physical distribution method or on reducing inventories, but on an integrated and coordinated systems approach to the logistics supply chain process. The integrated total-cost systems concept is the trade-off of all costs that are in conflict with each other and that may affect the outcome of a particular logistics decision. The acceptance of the total-cost systems concept has therefore changed the relative importance of the different logistics activities.

Logistics systems analysis relies on operations research. The principles of systems analysis and operations research are logically consistent. Therefore, an integrated logistics process with cross-functional coordination, achieved through the application of operations research methodology, should lead to better results than one lacking coordinated performance.

2 SYSTEMS ANALYSIS: DEVELOPMENT AND BACKGROUND

Systems analysis is a dynamic problem-solving and decision-making process that encompasses the identification, study and evaluation of interdependent parts and their attributes that function in an ongoing process and that constitute an organic whole (APICS 2005: 114). Various alternative solutions to a problem and approaches to an overall design are considered in order to arrive at an acceptable system with optimum performance in terms of specific criteria.

It is generally acknowledged that systems analysis derives from operations research, which developed at the beginning of World War II (*Progressive Architecture* 1968: 112). At that time, scientists from various disciplines contributed to the development of specific types of armaments, supporting armaments and other innovative inventions. These armaments could not function properly unless the way they were developed by various people was understood. A multidisciplinary team was, therefore, formed to design methods to ensure the concerted optimum application of all available armaments. This procedure was so successful that using a team of scientific experts to optimise the performance of system components rapidly became an established war practice. Operations research teams were subsequently called in whenever the solution to a problem required highly technical, multidisciplinary knowledge.

As the logistical operations in the war became more challenging, operations research became an integral part of the war effort. In the context of post-war developments, *Progressive Architecture* (1968: 113) reports as follows:

> So the stage was set for the post-war development of systems analysis and operations research in many fields – civilian and space age, as well as military. The basic concept of expert teamwork, scientific method, and sequential treatment of all parameters of a problem was found to be ideally amenable to evolution through more sophisticated concepts of research and investigative methods (computers, information retrieval devices, and so on). Today, there would seem to be few areas of planning or research immune to the potential of systems analysis and problem-solving when imaginatively pursued and constructively used.

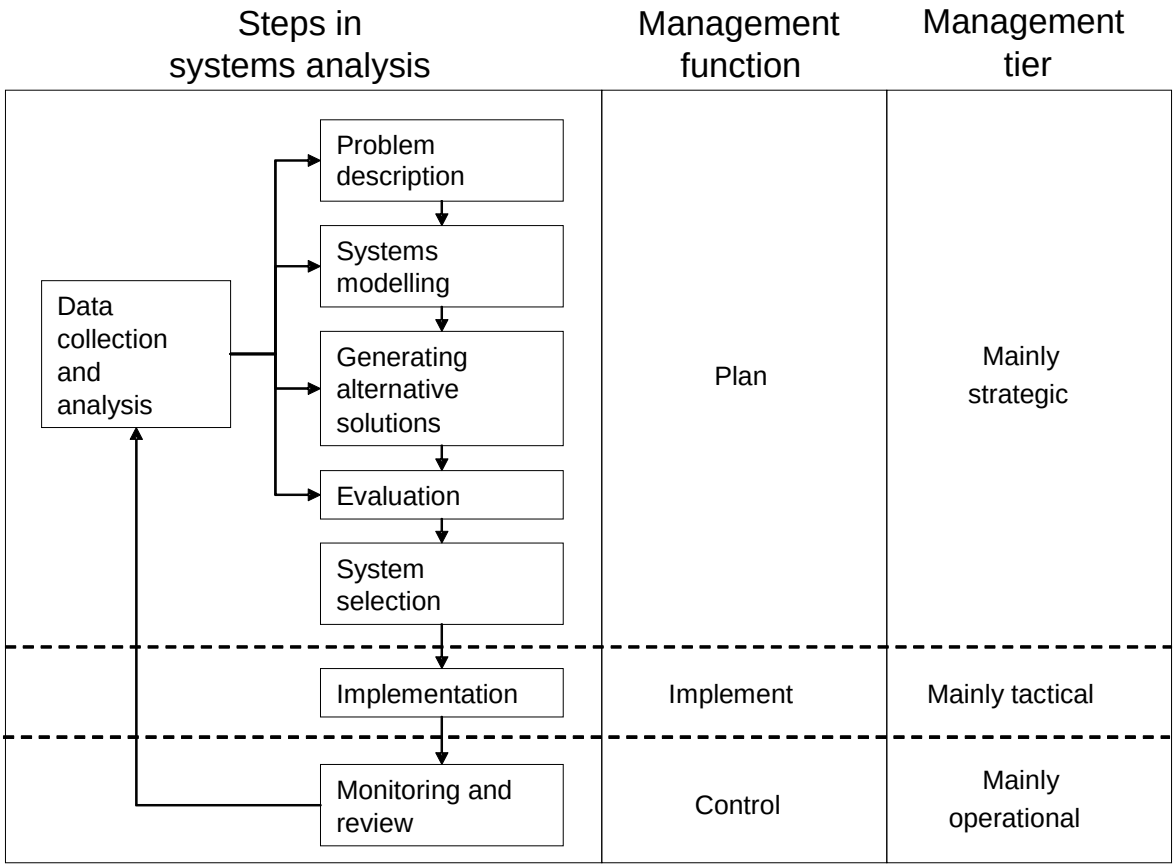
The systems approach is ideal for the solution of logistical problems where the need for goods, services and information (demand related); production and distribution capacity (supply related); and the operating environment vary with time.

The systems-analysis process comprises the following seven consecutive steps:

1) Define objectives and determine the levels of service that are needed to achieve the objectives (i.e. problem description).
2) Conceptualise the existing operating system and environment through research and simulation of the status quo (i.e. systems modelling).
3) Generate technically feasible alternative solutions (i.e. generate alternative solutions).
4) Apply optimisation and assessment techniques to determine the viability of the prospective investment options and operating procedures (i.e. evaluation).
5) Select the most viable investment options and operating procedures (i.e. system selection).
6) Organise the implementation of the chosen system (i.e. implementation).
7) Formulate and apply appropriate performance measures in order to judge the success of the logistics execution (i.e. monitoring and review).

If monitoring and review show that a permanent gap is developing between the performance and the objectives of a system, it means that a fundamental system problem requiring more than short-term action has been identified. Hence, the cycle of analysis will start anew. In Figure 2 the arrows (depicting the direction of the flow) show that the systems analysis process has no definite cut-off point: as soon as a fresh problem emerges, the monitoring and reviewing phase takes the whole process back to the initial stages of the analytical cycle.

Figure 2. Coherence between the systems analysis and logistics management approaches



Source: Pienaar & Vogt 2009: 9

3 OPERATIONS RESEARCH COMPETENCIES REQUIRED IN THE EXECUTION OF LOGISTICS PRACTICE

3.1 Empiric research

Research was conducted by the Department of Logistics at Stellenbosch University (the Department) to determine the scope of analytical skills that logisticians and operations researchers should possess in order to execute business logistics practice. The investigation entailed the following four steps:

First, the experience gained by the Department from teaching logistics management as an academic subject since 1992 was used to help judge which quantitative ('model using') skills are needed by logistics managers and which quantitative ('model building') skills are needed by logistics analysts. Second, the opinion of logistics managers from 66 organisations in the various economic sectors was sought to determine which quantitative competencies a logistician should ideally possess. Of these organisations, 14 were in the primary (i.e. production) sector; 18 in the secondary (manufacturing) sector; and 34 in the tertiary (i.e. service) sector. Third, a study was undertaken of the content of 12 logistics and operations research textbooks that are used internationally in order to determine which operations research methods and techniques are discussed most within the context of logistics management (Pienaar 2005: 88; 2006: 116). Fourth, during curriculum revisions the Department had the opportunity to consider the recommendations made by teams of external evaluators who officially evaluated the Department's academic offering in 1995, 2002 and 2009. The panels of external evaluators consisted of leading South African and international operations researchers and logisticians. The results of these investigations are summarised in section 3.2 (Stellenbosch University 2011).

3.2 Research results

In addition to tertiary-level skills in mathematics, probability theory, statistics and the theory of interest, and the ability to use financial, mathematical and statistical analysis techniques required for effective logistics management, the above-mentioned investigation indicated that logistics analysts should be competent in at least eight of the functional areas of operations research. These areas of competency are (in order of importance): (1) decision making; (2) forecasting; (3) scheduling (of machines, production, vehicles, crews and projects); (4) vehicle route planning; (5) inventory control; (6) facility location;

(7) analysis using simulation; and (8) applying queuing theory.

The six most important groups of operations research techniques to achieve these competencies are: (1) network optimisation; (2) linear programming; (3) combinatorial optimisation; (4) multi-criterion decision analysis; (5) nonlinear optimisation; and (6) probabilistic modelling.

4 LOGISTICS SYSTEMS CONTROL

4.1 Background

Control includes monitoring and reviewing performance to ensure that (1) the logistics process satisfies customers effectively; (2) the organisation's resources are deployed efficiently; and (3) corrective action is taken when performance is not in line with goals and objectives (see Figure 2). A continuing challenge for logistics managers is to develop and maintain an effective set of measures to inform decision making and support the achievement of financial success. Both financial and non-financial measures should be pursued. Since financial results within organisations are generally made known deep into the following financial period, they have little value for day-to-day operational logistics management. A more immediate method of controlling logistics performance is needed to monitor daily activities. This article focuses on the employment of non-financial measures that can be used to (1) monitor and review logistics performance; and (2) that are capable of providing diagnostics for use in problem resolution and improvement processes.

Performance measures should satisfy three basic requirements:

1) Collectively they should measure the performance of the whole system.
2) They should be quantifiable.
3) They should be statistically reliable, and capable of being obtained within a relatively short period at reasonable cost.

Logistics measurement systems have been traditionally designed to include information on five types of performance: (1) customer service; (2) logistics quality; (3) cost; (4) asset management; and (5) personnel productivity (Bowersox et al. 2010: 384). The first two of these performance areas are mainly focused on logistics effectiveness, while the latter three are concerned primarily with logistics efficiency. Several measures can be designed and implemented to specifically manage each of the logistics activities (shown in Figure 1), such as transport, warehousing and inventory control. Research suggests that leading-edge organisations are focused on performance measurement across these five areas, which collectively serve as a representative platform on which competitive position, value-adding capabilities and supply chain integration can grow (Fawcett & Cooper 1998: 341; Gunasekaran & Kobu 2007: 1995).

4.2 Research methodology

From the 66 logistics-oriented organisations mentioned in section 3.1, the opinion of 27 representatives involved in logistics performance measurement was solicited regarding the matter. The respondents all confirmed that, in their opinion, the five performance areas mentioned in section 4.2 as a whole can sufficiently represent organisational logistics performance in South Africa. The representatives were further asked to rank the five diagnostic measures that are most indicative of eventual financial success within each logistics performance area. Their average ranking per area appears in section 4.3.

4.3 Survey results

(1) Customer service

In order to determine whether the desired goods, services and information are consistently made available at the designated place and time, and in the required condition and quantity, feedback should be obtained directly and explicitly from the customer. In doing so, the following measures were judged to be most critical:

i. Percentage of consignments delivered at the right (i.e. designated) place
ii. Percentage of consignments delivered on time (i.e. at the designated time)
iii. Percentage of consignments delivered damage free (i.e. in the required condition)
iv. Percentage of consignments delivered complete (i.e. in the required quantity)
v. Percentage of orders fulfilled and invoiced accurately

(2) Quality

Logistics quality is closely related to the objective of achieving optimal customer service. Whereas customer service refers to how effectively customers' desires are conformed to, logistics quality refers to how efficiently (or cost effectively) customers' desires are met. From this perspective, the following measures were indicated as being most important:

i. Damage frequency
ii. Frequency of credit claims by customers
iii. Frequency of product returns by customers
iv. Ratio of orders sorted, packed, shipped and delivered accurately
v. Ratio of orders documented and invoiced accurately

In *(i)* above, *damage* excludes faulty products that erroneously leave production/manufacturing and enter distribution. The reason for this exclusion is that

production and manufacturing are not logistics activities (see Figure 1). Of the 27 respondents, 25 representatives confirmed that their organisations monitor *damage frequency*. Twenty of the respondents indicated that they monitor damage incurred per individual logistics activity, for example during storage, materials handling and transport. In order to analyse the nature and cost consequences of product *damage frequency*, all of the respondents confirmed that they also record the *number of credit claims* and the *number of product returns*. Note that measure *(iv)* above refers to functional (i.e. physical) logistics quality, and that measure *(v)* refers to administrative logistics quality.

(3) Logistics cost

Logistics cost (LC) is the direct reflection of monetary input required to accomplish specific logistics output, or availability/readiness to provide acceptable logistics service. According to the respondents, the following logistics cost measures are applied most:

i. Comparison of actual LC versus budgeted LC
ii. LC as a ratio of sales revenue
iii. LC per unit delivered
iv. Cost per logistics function (e.g. coordination of inbound traffic, transport, warehousing, inventory control)
v. Comparison of current LC to historical cost standard (in real terms)

In general, the respondents indicated although *logistics cost* as a performance measure is not inherently diagnostic, however, it (1) alerts systems analysts to expeditiously pursue diagnostic investigation; and (2) gives guidance and often provides prognostic clues for the analysis of asset performance and personnel productivity (including untoward human behaviour).

(4) Asset management

Asset management is concerned with the utilisation of the organisation's mobile equipment (e.g. vehicles and handling equipment), durable installed and stationary assets (e.g. workshop equipment), and current assets in the form of inventory (i.e. merchandise). The following measures were indicated as being the most important:

i. Fixed-asset output: Examples for vehicles: Ton-km per period, container-km per period, deliveries per period, fuel consumption rates, tyre wear
ii. Fixed-asset time utilisation (FATU) ratio = Actual working time ÷ Total number of hours available (Downtime ratio = 1 – FATU)
iii. Inventory turnover (A = Units sold in a period ÷ Average units in stock during the period
iv. Inventory turnover (C) = Sales revenue in a period ÷ Average inventory at sales price during the period
v. Inventory turnover (B) = Cost of goods sold in a period ÷ Average inventory at cost during the period

Respondents indicated that measure *(iv*) is generally applied when dealing with raw materials and semi-finished goods (which can often be stockpiled), and that measure *(v)* is in general applied when dealing with finished goods (which are time sensitive).

(5) Personnel productivity

Personnel productivity refers to the quantity of output divided by the amount of human resources input employed to produce the output. The following human resources-related productivity measures were indicated to be mostly considered in logistics management:

i. Comparison of actual achievement versus target achievement
ii. Number of units delivered per human resources cost amount
iii. Number of units carried/delivered per warehouse/transport employee
iv. Average order cycle time
v. Comparison to historical standard

Note that measure *(iv)* is not a ratio – it represents the average time duration between the reception and fulfilment of orders

5 CONCLUSIONS

The objective of logistics management is to ensure that the desired goods, services and information are continuously made available at the destined place and designated time, in the required condition and quantity, at an acceptable cost. An integrated logistics process with cross-functional coordination achieved through the application of operations research methodology should lead to the aforementioned acceptable cost. The systems analysis approach is ideal for the solution of logistical problems where, firstly, the demand for goods, services and information, secondly, the supply of production and distribution capacity, and, thirdly, the operating environment vary with time. The aim of systems analysis is to methodically solve problems that entail the identification, study and evaluation of interdependent parts and their attributes that function in an ongoing process and that constitute an organic whole.

Operations research may be regarded as an indispensable toolkit for the logistician. The following eight tools are the most important instruments in this kit: (1) decision making; (2) forecasting; (3) scheduling; (4) route planning; (5) inventory control; (6) facility location; (7) analysis with simulation; and

(8) applying queuing theory. The six most important groups of operations research techniques to achieve these competencies are: (1) network optimisation; (2) linear programming; (3) combinatorial optimisation; (4) multi-criterion decision analysis; (5) nonlinear optimisation; and (6) probabilistic modelling.

Controlling the execution of logistics activity is achieved through applying appropriate performance measures that reliably indicate when the logistics system requires adjustment to bring its performance in line with the organisation's goals and objectives. The success in achieving the latter can adequately be attained through effectively monitoring and reviewing performance in the following areas of a business logistics system: (1) customer service; (2) logistics quality; (3) cost; (4) asset management; and (5) personnel productivity. Logistics systems analysts who are proficient in applying the above-mentioned eight operations research tools and the six identified techniques to optimise the performance of a logistics system are most likely best suited to construct and maintain the system's control process.

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DO DIRECTORS' OUTSIDE APPOINTMENTS HURT BOARD EFFECTIVENESS: AN ANALYSIS UNDER FAMILIAL DOMINANCE IN THE TAIWAN CASE

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Abstract

Appointing directors to affiliated companies is common practice to reinforce control or build connections under the familial-oriented culture in East Asia. This paper investigates whether outside appointments entrench board monitoring effectiveness on management investment behaviour for Taiwanese firms. The results show that investments are significantly related to internal cash flow. However, no economically significant relationship exists between multiple directorships and investment-cash flow sensitivity, indicating that the outside appointments of chairpersons neither aggregate nor alleviate managerial discretion problem on investment in this sample. We also provide explanations for the results.

Keywords: Directors, Investment, Investment-Cash Flow Sensitivity, Family

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1. Introduction

In theory, the financial structure of a firm is irrelevant to investment because external funds provide a perfect substitute for internal capital. With perfect market assumption, the investment decisions of a firm are independent of its financial condition (Modigliani and Miller 1958). However, Myers and Majluf (1984) propose that misaligned managerial incentives and asymmetric information in the capital market usually cause misuse of cash flow and investment distortions. Subsequent studies have found relationships between investment expenditure and cash flow (Fazzari et al., 1988; Hoshi et al., 1991; Almeida et al., 2004). This study extends the scope of corporate governance by examining the relationship between board composition and investment, specifically on the impact of multiple directorships on firm investment decisions.

Under the agency view, inadequate investment could be the result of misused free cash flow. By utilizing free cash flow to finance projects internally, managers could avoid monitoring capital markets when the firm needs new capital. Such investment increases their control power and causes firms to grow beyond their optimal size. Jensen (1986) suggests that debt creation and hostile takeovers can reduce agency costs by reducing the cash flow available for spending at the discretion of managers. In addition to controlling internal cash flow, board monitoring is considered an alternative mechanism to reduce organization inefficiencies. For example, Core et al. (1999) use the percentage of outside directors over the age of 69 and the percentage of busy outside directors as proxy to measure effectiveness of outside directors. They find that firms with lower outside director effectiveness are more likely to pay higher compensation to chief executive officers (CEOs) and cause inferior performance.

The monitoring effectiveness of directors' outside appointments has been concerned. Fich and White (2003) find that CEOs in companies with board interlocking have excessive salary and lower turnover. Fich and Shivdasani (2006) state that firms with busy outside directors exhibit lower market-to-book ratios, weaker profitability, and lower sensitivity of CEO turnover to firm performance. These findings question directors' effectiveness and comprise the Busyness Hypothesis.

In contrast, some studies suggest that external appointments are associated with firm success. Cotter et al. (1997) find that shareholders have larger

premiums in tender offers when directors hold multiple directorships. Ferris et al. (2003) compare the committee service of multiple directors with that of non-multiple directors. They find that directors serve on more committees, attend more committee meetings, and have no relationship between the number of directorships and the likelihood of securities fraud litigation. Donato and Tiscini (2009) provide evidence that interlocking directorates between banks and listed firms increase the cost of debt and the level of indebtness of non-financial firms. They explaine that the bank-firm connection will increase the bargaining power of the former when banks hold equity interests of the firm, and the bank appoints fiduciary directors in the board of the firm. Perry and Peyer (2005) find that shareholders have a positive reaction when executives join a firm in a similar industry or with greater growth opportunities. They propose that executives can benefit the sender firms through industry-specific knowledge transfer or by learning new technologies, products, or management innovation.

However, few studies relate multiple directorships to corporate investment. Building on prior studies, this research studies whether multiple directorships affect the investment decision of managers. If directors who serve on several committees become busy and evade monitoring duties, then firms with multiple directorships are more likely to have inadequate investment and higher investment-cash flow sensitivity due to ineffective monitoring on management. However, if joining outside firms signals the ability of directors or helps them learn managerial expertise among interlocked firms (Ferris et al., 2003), multiple directorships may relate to higher managerial expertise. As a result, firms appointing directors to other companies may benefit from monitoring effectiveness, including fewer inefficient investment decisions. This will cause a lower degree of investment-cash flow sensitivity.

We use a panel data set consisting of 7,476 firm-year observations in Taiwan between 1999 and 2007. Like many countries around world, Taiwan is considered to have a familial-oriented culture. Controlling families usually use cross-holdings and pyramidal ownership to reinforce control (La Porta et al. 1999, Claessens et al. 2000, Yeh and Woidtke 2005). Appointing specific directors to other family business or affiliated companies is a common way to reinforce control or build connection. In this sample, approximately 20% of observations involve chairpersons with outside appointments. This characteristic enables the testing of monitoring effectiveness of directors with outside appointments.

Our results show that investments are significantly related to internal cash flow. This implies the possibility of an overinvestment or underinvestment under managerial discretion in Taiwanese firms. This finding agrees with theoretical predictions and empirical findings in the US and the UK. We do not discover economically significant relationships between multiple directorships and investment-cash flow sensitivity. Thus, the premise that the outside appointments of chairpersons aggregate or alleviate managerial discretion problem on investment is not proven in Taiwanese firms. The findings differ from the Busyness Hypothesis, but are in line with the claim of (Ferris et al. 2003) that there is no evidence that directors appointed to multiple boards avoid their responsibilities. We provide two explanations. First, there is a tradeoff between the advantage and disadvantage of multiple directorships. Second, the governance function through interlocking directorates might be absent innately based on the familial culture in East Asia.

The remainder of this paper is organized as follows. Section 2 provides director interlocking and corporate governance in the Taiwan context; Section 3 describes the data and the model; Section 4 analyzes results; and Section 5 presents the conclusions.

2. The Taiwan context

Like most countries in East Asia, the Taiwan corporate governance system features a high concentration of ownership. Controlling shareholders usually build power through direct shareholding, cross shareholding and stock pyramids. As mentioned by Claessens et al. (2000), controlling shareholdings usually result in excessive cash flow right and a conflict of interests between controlling and minority shareholders. Several studies found entrenchment to minority shareholders and include Taiwan as an example. For example, La Porta et al. (2002) find that firms with controlling shareholder and higher cash-flow ownership have higher valuation, which is not found in firms with controlling shareholder and low cash-flow ownership. Fan and Wong (2002) provide evidence that controlling ownership in East Asia is associated with opacity and low information on earnings because controlling owners tend to report accounting information for self-interest. Du and Dai (2005) note that controlling shareholders with small ownership share in East Asia are more likely to construct a risky capital structure owing to increased leverage through external finance and will not dilute their shareholding dominance. Chou et al. (2007), Lin and Chang (2008) and Lin et al. (2005) directly investigate the entrenchment effect of managerial ownership on Taiwan public companies. They classify the degree of managerial ownership concentration into low, medium, and high, and find that firms have negative performance and low asset utilization efficiency when managers have high-level concentrated shareholdings.

Another characteristic of corporate governance in Taiwan is that many public companies are dominated by families. Although family control has the potential advantage of strong leadership and cohesive management teams (Yeh et al. 2001),

family-controlled businesses are usually associated with insider trading and tunneling, leading to expropriation of minority shareholders (Cheung et al. 2006). Including direct and indirect shareholdings of nominal agents and other institutions controlled by families, Yeh et al. (2001) show that about 76% of listed firms in Taiwan are family controlled when fixing the critical control level to 20%. They provide evidence that when family control is central, low levels of family ownership and high levels of family board representation increase the conflict of interest between majority and minority shareholders.

The governance features of concentrated ownership and family dominance significantly influence board composition in Taiwan under Chinese cultural norms. As mentioned by Fan (2002), family ties and *guanxi* (connections) to the state and related parties are vital in managing businesses in Greater China. Chinese family firms often select a CEO or managing director from family members or friends to maintain close control on business groups and maintain social relationships with interested parties (Lien et al. 2005, Liu et al. 2006). The familial-oriented thought bring the outcome that directorship and top management positions are filled with family members or close friends rather than out side professionals. The outside appointments of directors create director affiliation but weaken the independence of the board committee, while independence is viewed as a vital factor to enhance the monitoring service of the board in Anglo-Americans. Yeh and Woidtke (2005) provide evidence for the problem that divergence between cash-flow and control rights is more pronounced in family-controlled firms, which are more likely to retain affiliated directors than are non-family-controlled firms[1].

The Enron case gained worldwide attention on ways to improve monitoring in firms. Following the Sarbanes-Oxley Act of 2002, Taiwan initiate corporate board reform to enhance corporate-monitoring functions. In 2002, the Taiwan Stock Exchange (TWSE) request all newly listed companies to have at least two independent directors and at least one supervisor. Although this rule is not required for existing public firms, many companies voluntarily engage independent directors and supervisors. A famous case is that of Taiwan Semiconductor Manufacturing Corp. (TSMC), who invited Carly S. Fiorina, the previous chairman and CEO of HP, to join as an independent director in 2006. At that time, the TSMC board committee included Michael E. Porter, eminent professor at Harvard Business School, and Sir Peter Leahy Bonfield, previous CEO of British Telecom (BT).

In view of increasing debate regarding the outside appointments of directors, in 2006, TWSE initiate "Regulations Governing Appointment of Independent Directors and Compliance Matters for Public Companies" to restrict the number of multiple directorships. According to Article 4 of this rule, "no independent director of a public company may concurrently serve as an independent director of more than three other public companies." This rule undoubtedly limits and pressures the outside appointments of independent directors. However, it does not restrict the number of multiple directorships for non-independent directors. The legal institutional settings and features of corporate governance in Taiwan resulte in our research question on whether multiple directorships affect monitoring effectiveness in Taiwan in terms of the adequacy of investment behavior. Likewise, this question is important for an emerging country like Taiwan, which seeks development in the current global environment because board effectiveness could help firms improve competitive ability and reduce corporate risk (Liu et al. 2006).

3. Data and Methodology

3.1 Sample

The sample consists of listed firms in Taiwan Stock Exchange (TWSE) from 1999 to 2007. After excluding financial institutions, missing data, and truncating the samples at the first percentile, an unbalanced panel with 7,476 firm-year observations is used for our analysis. Table 1 shows that the observations include 28 industries, in which manufacturing accounts for over two-thirds and 3,633 observations come from electronics-related industries (TWSE code 24-31). The manufacturing industry, specifically electronic manufacturing, have many tangible and intangible investments to meet production requirements and intense worldwide competition. Based on the corporate governance features of Taiwan and industry characteristics, this sample helps provide an understanding of the relationship between multiple directorships and investment decision. All data are drawn from the Taiwan Economic Journal data bank.

[1] The board is considered affiliated when seats are held by the largest shareholder, their identifiable relatives, or by legal representatives from other companies or entities controlled by the largest shareholder (Yeh and Woidtke, 2005).

Table 1. Sample by industry types

TWSE code	Industry type	1999	2000	2001	2002	2003	2004	2005	2006	2007	Total
1	Cement	7	6	7	7	7	7	7	6	6	60
2	Food	21	20	20	22	20	20	22	21	22	188
3	Plastics	21	24	23	24	24	27	27	26	26	222
4	Textile	49	50	51	53	50	52	50	50	49	454
5	Electric Machinery	29	34	39	44	53	58	63	64	65	449
6	Electrical and Cables	12	12	12	13	12	13	13	13	12	112
8	Glass	5	5	5	5	4	3	3	4	5	39
9	Paper-making	7	7	7	7	7	7	5	5	6	58
10	Iron and steel	28	31	32	32	34	35	35	38	38	303
11	Rubber	9	10	10	10	10	9	9	11	11	89
12	Automobile	4	4	4	4	3	3	4	4	4	34
14	Construction	34	37	41	43	43	42	42	41	41	364
15	Shipping and Transportation	19	19	19	19	22	20	20	17	17	172
16	Tourist	9	9	10	10	11	12	11	11	10	93
18	Trading and Consumers' Goods	10	11	10	13	15	16	16	17	15	123
21	Chemical	24	28	31	31	33	36	38	38	38	297
22	Biotechnology and Medical Care	6	7	12	18	26	33	36	37	40	215
23	Gas and Electricity	8	10	10	10	11	12	12	12	13	98
24	Semiconductor	32	33	39	52	67	82	87	97	107	596
25	Computers and Peripherals	30	37	45	58	67	68	74	66	69	514
26	Optoelectronic	15	23	29	43	50	66	71	78	99	474
27	Communications and Internet	14	18	27	38	48	56	60	63	64	388
28	Electronic Parts and Components	42	51	66	94	110	132	149	152	164	960
29	Electronic Products Distribution	6	11	14	14	16	20	21	18	20	140
30	Information Service	6	10	14	25	26	31	33	34	36	215
31	Other Electronic	13	15	22	32	38	51	55	54	66	346
80	Management of stock	2	5	5	4	3	4	4	3	2	32
20	Others	33	38	44	50	54	53	56	56	57	441
	Total	495	565	648	775	864	968	1023	1036	1102	7476

Note: The listed industry types are utilized in regression model to control industry effects.

3.2 Methodology

We first specify our baseline model by equation 1:

$$\left(\frac{FI}{K}\right)_{i,t} = \beta_0 + \beta_1 \cdot \left(\frac{CF}{K}\right)_{i,t} + \beta_2 \cdot \left(\frac{CF}{K}\right)_{i} * MD_{it} + \beta_3 \cdot \left(\frac{Sale}{K}\right)_{i,t-1} + \beta_4 \cdot \left(\frac{Debt}{K}\right)_{i,t-1} + \mu_i + \nu_t + \varepsilon_{i,t}. \quad (1)$$

FI is investment in plant and equipment for firm *i* during year *t*. CF is cash flow measured as a sum of operation income with depreciation and amortization. It measures the influence of cash flow on investment-cash flow sensitivity (Fazzari et al. 1988). MD is the number of outside appointments of chairpersons in director and manager positions. The interaction term of cash flow and multiple directorships is utilized to investigate the impact of outside appointments on investment. Sale is annual sale to represent the impact of sale on investment (Goergen and Renneboog, 2001). Debt is long-term debt to control its effect on investment (Kaplan and Zingales, 1997). Investment and financial variables are scaled by the beginning of year-fixed asset (K). μ and ν are utilized to accounts for industry-fixed effects and time-fixed effects. As in (Fazzari and Peterson 1993), we apply two-stage-least squares regression (2SLS). Three-stage least squares (3SLS) method is also adopted to obtain more efficient coefficient estimation (Greene, 2008).

3.3 Summary Statistics

Outside Appointments of Chairpersons

Table 2 shows the distribution of the outside appointments of chairpersons to director or manager positions. For total 7,476 observations, 79.40% (5,936) of chairpersons do not work for other companies as directors or managers at the same time. Of the chairpersons with outside appointments, 1,195 observations (78%) hold one or two outside seats. This means 22% of interlocked chairpersons hold three or more outside seats. Furthermore, the average number of outside appointments decreases from 2.1 for 1999 to 1.71 for 2007, indicating a decreasing trend in the number of multiple directorships in recent years.

Table 2. Distribution of chairman's outside appointments

	Number of Multiple Directorships (MD)									MD=0	Total
Year	1	2	3	4	5	6	7	Means	Obs.	Obs.	Obs.
1999	65	22	15	11	7	5	0	2.10	125(25.25%)	370(74.75%)	495
2000	77	19	15	10	7	6	1	2.06	135(23.89%)	430(76.11%)	565
2001	98	20	12	12	5	6	0	1.85	153(23.61%)	495(76.39%)	648
2002	91	33	19	10	5	6	0	1.92	164(21.16%)	611(78.84%)	775
2003	109	29	23	8	5	5	0	1.80	179(20.72%)	685(79.28%)	864
2004	114	41	20	10	5	5	0	1.80	195(20.14%)	773(79.86%)	968
2005	127	29	16	9	9	4	0	1.74	194(18.96%)	829(81.04%)	1023
2006	120	34	17	12	0	4	0	1.66	187(18.05%)	849(81.95%)	1036
2007	135	32	11	26	4	0	0	1.71	208(18.87%)	894(81.13%)	1102
Total	936	259	148	108	47	41	1	1.83	1540(20.60%)	5936(79.40%)	7476

Financial Variables

Table 3 provides summary statistics of financial variables. The average fixed asset investment ratio is 0.11 and ranges from 1.47 to 0, with standard deviation of 0.14. The high standard deviation indicates the variation of investment considerations between observations. The average internal cash flow ratio is 0.34 and ranges from 2.90 to -2.73, with standard deviation of 0.57. The wide range of cash flow illustrates the variation of company policies to keep internal cash flow. The average sales ratio and long-term debt ratio are 3.70 and 0.29, respectively.

Table 3. Summary Statistics

Variable	Mean	Median	Std.Dev	Maximum	Minimum
FI/K	0.1052	0.0543	0.1438	1.4662	0.0000
CF/K	0.3404	0.2164	0.5667	2.9007	-2.7277
Sale/K	3.6976	1.8669	4.6031	31.0108	0.0057
Debt/K	0.2892	0.1265	0.7055	40.6416	0.0000
K(in millions)	11,696	2,971	38,715	620,942	122

Note: FI is fixed asset investment of each period, Sale is annual sale amount, Debt is long-term debt, CF is cash flow measured as a sum of operation income with depreciation and amortization, K is the sum of tangible assets.

4. Empirical Findings and Discussion

Table 4 summarizes the regression results. The 2SLS coefficient on cash flow is significantly positive at the 1% level (coefficient 0.033, t=9.84). The result indicates that investment in Taiwanese firms depends on their generated cash flow, indicating the possibility of over- or underinvestment in Taiwanese firms. This baseline finding agrees with theoretical predictions and empirical findings in the US and the UK. The coefficient on interaction terms of cash flow and the number of multiple directorships ($\left(\frac{CF}{K}\right) * MD$) is negative and statistically significant (coefficient -0.008, t=9.84). However, its economic significance is small because one standard deviation increase in multiple directorships decreases the investment-cash flow sensitivity by only 0.008. This implies that the number of multiple directorships does not affect investment-cash flow sensitivity in an economically meaningful way. The findings of 3SLS are similar to those of 2SLS.

Table 4. Multiple directorships and investment-cash flow Sensitivity

Estimation Method	2SLS		3SLS	
	Coefficient	t-statistic	Coefficient	t-statistic
$(CF/K)_t$	0.033	9.84***	0.029	8.70***
$(CF/K)_t$* MD_t	-0.008	-2.98***	-0.008	-2.99***
$(Sale/K)_{t-1}$	0.001	1.63	0.001	2.26**
$(Debt/K)_{t-1}$	0.001	0.38	0.002	0.46
Adj. R^2	0.2878		0.2676	
No. of obs.	7476		7476	

Note1: This table reports regression results for the number of chairmen's outside appointments on investment. The dependent variable is fixed asset investment. 2SLS presents two-stage least squares regression. 3SLS presents three-stage least squares regression. CF is cash flow measured as a sum of operation income, depreciation and amortization. MD is the number of chairmen's outside appointments. Sale is annual sale amount. Debt is long-term debt. K is the sum of tangible assets. The intercept, industry dummies and year dummies over 1999-2007 are included for all regressions, but not reported.
Note 2: *, ** and ***significant at 0.1, 0.05 and 0.01 level or better.
Note3: system weighted R-sq that adjusted by cross-model covariance matrix is applied for measuring goodness of fit of the model.

Table 5 adapts Equation (1) by using a dummy variable MDdummy to observe the differential impact between firms with and without outside appointments. The coefficient of cash flow for 2SLS regression is positive and significant (coefficient 0.034, t=9.90). The coefficient on interaction term of cash flow and the dummy variable for the condition of multiple directorships ($\left(\frac{CF}{K}\right) * MDdummy$) is negative and statistically significant. Again, the coefficient however is economically small with a limited decrease in investment-cash flow sensitivity of 0.018 (t=-3.23). The results of 3SLS are similar to those of 2SLS.

Overall, the findings in Tables 4 and Table 5 indicate that outside appointments are not economically relevant to investment for Taiwanese firms. This finding implies that the premise that outside appointments of chairpersons aggregate or alleviate managerial discretion problem on investment is not proven. The findings differ from those who argue ineffective monitoring caused by outside directorships (Fich and White, 2003), but are in line with (Ferris et al. 2003), which find no evidence that multiple directors evade their responsibilities to serve on board committees.

We provide two explanations for the economically insignificant effect of outside appointments on investment. First, a tradeoff effect of the advantage and disadvantage brought by multiple directorships may exist. As mentioned by Fich and White (2003) and Fich and Shivdasani (2006), busy directors may cause monitoring problems and inferior performance. However, their affiliation through outside appointments could help reduce information asymmetry, increase knowledge transfer, and obtain additional resources such as external funding. In Taiwan, most chairpersons have outside appointments of less than three seats (61% with one seat; 78% with one or two seats in this sample). This means the overall problem of monitoring effectiveness of the board might not be striking. The second explanation is the possibility that a significant monitoring effect on managerial discretionary behavior, either positive or negative, may be absent innately. Based on the culture of familial-oriented control in Taiwan, governance through interlocking directorates might be absent since chairpersons and directors are family members or friends. Sending them out to related parties, thus, centers more on strategy rather than monitoring.

Table 5. Condition of outside appointments and Investment-Cash flow Sensitivity

Estimation Method	2SLS		3SLS	
	Coefficient	t-statistic	Coefficient	t-statistic
$(CF/K)_t$	0.034	9.90***	0.030	8.78***
$(CF/K)_t$* $MDdummy_t$	-0.018	-3.23***	-0.018	-3.27***
$(Sale/K)_{t-1}$	0.001	1.61	0.001	2.25**
$(Debt/K)_{t-1}$	0.001	0.31	0.001	0.39
Adj. R^2	0.2879		0.2878	
No. of obs.	7476		7476	

Note1: This table reports regression results for the condition of chairmen's outside appointments on investment. The dependent variable is fixed asset investment. 2SLS presents two-stage least squares regression. 3SLS presents three-stage least squares regression. CF is cash flow measured as a sum of operation income, depreciation and amortization. MDdummy is a dummy variable equal to 1 for the company whose chairman has outside appointments. Sale is annual sale amount. Debt is long-term debt. K is the sum of tangible assets. The intercept, industry dummies and year dummies over 1999-2007 are included for all regressions, but not reported.
Note 2: *, ** and ***significant at 0.1, 0.05 and 0.01 level or better.
Note3: system weighted R-sq that adjusted by cross-model covariance matrix is applied for measuring goodness of fit of the model.

5. Conclusions

This paper examines whether the outside appointments of chairpersons affect managerial discretionary behavior on investment. Financial theories point that agency problem and information asymmetry cause the dependence of investment on internal cash flow. Board monitoring effectiveness is considered one of governance mechanisms to alleviate agency problem. However, monitoring effectiveness of outside appointment has been questioned recently. The Busyness Hypothesis proposes that outside appointments cause ineffective monitoring and inferior performance. In contrast, some studies suggest that directors' external appointments are associated with firm success or are irrelevant to performance.

In Taiwan, the corporate governance system features a high concentration of ownership and family dominance. It is common practice for Taiwan firms to select CEOs or managing directors from family members to maintain close control on business groups or interested parties. Such outside appointments create director affiliation but weaken the independence of board committee, while independence is vital for the board to provide monitoring services among Anglo-Americans.

Using a sample of 7,476 firm-year observations of Taiwan from 1999 to 2007, we observe that approximately 20% of observations with outside appointments. We find that internal cash flow is significantly related to investment. The results indicate that investment depends on generated cash flow and the possibility of an overinvestment or underinvestment in Taiwanese firms. However, our results suggest no economically significant relationship between outside appointments and investment-cash flow sensitivity. We provide two explanations for this finding. First, the advantage and disadvantage of multiple directorships might have tradeoff effects. Second, governance through interlocking directorates might be absent due to the familial strategy to build relationships rather for monitoring. Finally, we suggest that studies related to board effectiveness could be extended in area with a similar cultural context.

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EFFECTIVE BONUS?

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Abstract

Is it economically meaningful and ethical for firms to pay their CEOs cash bonuses in thousands, if not millions, of dollars? This paper empirically addresses two aspects of this issue. First, we document that a bonus is only statistically, but not economically, sensitive to short-term firm performance and shareholder value creation. In addition, a discretionary bonus, on average representing 12% of a CEO's annual compensation, adds little value to shareholders. Second, we find that firms with increased CEO bonuses have a higher likelihood of engaging in takeover activities, although such takeovers do not necessarily result in greater firm risk.

Keywords: Cash Bonus, Agency Problem, Business Ethics, Pay-for-performance, Takeovers

JEL Classification: G30

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We gratefully acknowledge the insightful comments from Grahame Dowling, Vikas Mehrotra, Garry Twite and Zhenyu Wu. Hua (Helen) Deng has provided useful research assistance. All remaining errors are ours alone.

I. Introduction

Is it economically meaningful and ethical for a firm to pay its CEO a cash bonus of thousands, if not millions, of dollars? Is a bonus an effective compensation that aligns the interest of the CEO to that of his shareholders?

More generally, is an executive compensation contract the solution to the principal agent problem, or is it rather a mechanism through which an entrenched CEO extracts private rents from shareholders? American International Group (AIG) recorded a $99.2 billion total loss in 2008, and its market value plummeted to $2.7 billion at the end of March 2009, from nearly $148 billion in December 2007[1]. The US government had to create an $85 billion credit facility in September 2008 to bail out the insurance giant in order to avoid a systemic shock to the nation's financial system. The loss was huge and the corporate performance was devastating, but what infuriated the public was that after such a huge loss, the company rewarded its key employees with retention bonuses worth $165 million[2]. Moreover, this $165 million was part of the bailout money, and these key employees belonged to AIG Financial Products Division, a London-based subsidiary that was the "patient zero" of AIG's meltdown.

The overly generous bonus handouts ignited public backlash. Barney Frank, Chairman of the House Financial Services Committee, asserted that paying these bonuses would be "rewarding incompetence"[3]. Senator Richard Shelby reacted to the AIG bonus publicly by saying, "These people brought this on themselves. Now you're rewarding failure. A lot of these people should be fired, not awarded bonuses. This is horrible. It's outrageous"[4]. While the media and public are deriding the ethics of cash bonus recipients, we academics should re-explore the theories and empirical evidence of corporate governance with respect to executive compensation, especially from the perspective of business ethics.

Ethical behavior of corporate executives, or the lack of it, has been widely discussed in economics and management. In standard economics theories, managers (in particular CEOs) are modeled as self-interest driven, risk-averse agents, hired by principals (shareholders) to maximize shareholder wealth. A CEO has invested in professional knowledge of

[1] CRSP monthly data.

[2] These bonus payments were announced in March 2009. Ironically, 52 of those who received such bonuses quit their jobs after getting the money.

[3] "Off with their heads: Samples of AIG outrage". By Phil Mintz. Business Week, March 17, 2009.

[4] On ABC's "Good Morning America", Monday 16, 2009.

managing the firm, and he possesses critical information that may not be easily observed by outside shareholders. The CEO, caring about himself, seeks opportunities to increase his personal welfare, sometimes even at the expense of his shareholders. When this happens, an agency problem arises. Eliminating the agency problem is not only a matter of enhancing economic efficiency, but also an aim of establishing business ethics. However, given information asymmetry, incomplete contracts, and dispersed ownership structures widely used in Corporate America, this can be a difficult task. There are several approaches to dealing with the agency problem; one of them is to align the interest of the CEO with that of his shareholders though the executive compensation package.

Executive compensation has traditionally been viewed as a solution to the agency problem: the compensation contract is designed to motivate the agent/CEO to maximize the principal/shareholder value (Bebchuk and Fried, 2003; Baker et al., 1987; Paul, 1992; Kole, 1997; Gibbons and Murphy, 1992b). The CEO is risk-averse, welfare-aware and self-interest driven, so an effective compensation package must address all these aspects. A typical compensation package has four components: base salary, annual bonus, equity-based compensation and perquisites, with base salary taking care of risk aversion, perquisites (such as employee benefits plans, pension, etc.) looking after personal welfare, equity-based compensation aligning long-term interests, and annual bonus addressing the short-term value creation.

There is a substantial literature covering the effectiveness of long-term equity-based compensation (mainly in the forms of stock options and restricted shares). For instance, it has been documented that equity-based compensation affects firm financial policies, including dividend payouts and capital structure decisions (e.g., Lambert et al., 1989; Mehran, 1992; John and John, 1993; Yermack, 1995; White, 1996; Berger et al., 1997; and Fenn and Liang, 2001), that there is an association between corporate investment policies and equity-based compensation (e.g., Holmstrom and Weiss, 1985; Campbell et al, 1989; Gibbons and Murphy, 1992a; and Kang et al. 2006), and that equity-based compensation affects the firm's equity riskiness (Agrawal and Mandelker 1987; and Lambert, 1986).

Few academic papers focus on annual bonus (see Murphy, 1999). Is it because bonus compensation is so insignificant that nobody should care? Some simple statistics from COMPUSTAT ExecuComp database reveal the opposite. In fact, over a sixteen-year window of 1993-2008, annual bonuses represent both a large portion of a CEO's income (32% of CEO annual compensation) and a non-negligible amount of corporate resources ($1.2 out of every $1000 of corporate sales). The importance of bonus compensation to both the firm and its CEO warrants a careful investigation of its usefulness – does it help alleviate principal-agent conflicts?

Our paper contributes to the integration of two literatures: executive compensation and business ethics. First, we address the particular gap in the current compensation literature by focusing on the effectiveness and ethics (or lack thereof) of CEO bonus compensation. Second, by drilling deeper into firms that grow through takeover activities, we further examine whether bonus compensation encourages the CEO to pursue goals other than shareholder wealth maximization and, more importantly, whether such takeovers increase the firm's equity riskiness. One important feature that separates cash bonuses from equity-based compensation is that a bonus is not necessarily related to risk. On the contrary, equity-based pay (stock options in particular) can be used to encourage corporate risk-taking behavior.[5]

The remainder of the paper is structured as follows. Section II provides an overview of the issues specifically related to CEO annual bonuses and develops three testable hypotheses. Section III details our data collection process, outlines the empirical strategy and provides descriptive statistics of some key variables. Section IV presents our regression results and discusses their implications. We conclude with Section V.

II. Theoretical Framework and Hypotheses Development

Bonus is defined as "the cash or cash equivalent of any annual incentive award"[6]. Cash bonuses can be either performance-based (amount determined by the firm's short-term performance) or discretionary (amount set at the discretion of the board). It is common for firms to reward their CEOs with bonuses, and firms have great flexibility in deciding the type and amount of such bonus payments. In terms of financial disclosure, performance-based bonuses can be reported as business expenses, thus deductible for corporate tax purposes. Non-performance-based discretionary bonuses, on the other hand, can be treated as expenses only when certain conditions are met[7]. The SEC has become increasingly serious about the transparency of executive compensation, in particular after some high-profile corporate scandals

[5] In option pricing models such as Black-Scholes, multiple parameters affect option valuation. Everything else kept constant, greater stock volatility (i.e., equity riskiness) will lead to higher option value. This is beneficial to the holder of the stock options, such as the CEO.

[6] Corporate Library definition.

[7] Essentially, the sum of discretionary bonuses and fixed salaries should be below $1 million in order to be eligible for tax deductions. Otherwise, bonuses must be reported as part of net income and be treated the same as dividends, as per IRC 162 (m).

in the early 2000s. In terms of annual bonus, since the fiscal year end of 2006, the SEC has required separate reporting of performance-based and discretionary items. In the COMPUSTAT ExecuComp database, both types of bonuses would appear as 'bonus' prior to December 2006; afterward, only a discretionary bonus remains in this column, while a performance-based bonus should be reported as part of 'non-equity incentive payments' (Kim and Yang, 2010).

According to the optimal contract theory, a bonus should be sensitive to the change of the firm's shortterm performance: there should be positive (negative) bonus awards when there is superior (inferior) annual firm performance. However, given the nature of limited liability in labor contracts, fining executives (negative bonus) is not feasible. In this sense, a bonus has a born flaw in serving its purpose of completely resolving agency conflicts.

If a positive (zero) bonus is rewarded to good (poor) short-term performance, the bonus still achieves a second-best solution – rewarding value creation, not punishing value destruction, similar to the asymmetric payoff structure of stock options. Unfortunately, what has been observed recently casts doubts on even this second-best solution. The media already concludes that any bonus, in cases like AIG, "is rewarding incompetence." In general, Jensen and Murphy (1990) report very low sensitivity of pay-for-performance links in the US: top executives are not rewarded enough cash compensation (bonus plus fixed salary) for superior performance and they are not punished effectively for inferior outcomes.

In the first part of our empirical study, we examine the effectiveness of the annual bonus. As a first step, we update Jensen and Murphy (1990) using recent CEO compensation data. In particular, we test the association between the change in CEO annual bonus and the change in shareholder wealth creation. The separate reporting of discretionary vs. performance-based bonuses also provides an ideal setting to test whether discretionary bonuses have any bearing on performance improvement. If not, this amount becomes a private rent, or agency cost as defined by Fama (1980) and Fama and Jensen (1983), rather than a solution. In such a case, one might argue that it is unethical for firms to reward large amounts of discretionary bonuses to their agents (CEOs) without benefiting the principals (shareholders).

A rich body of literature reports that executive compensation is sensitive to firm size (pay-for-size argument), which sometimes is used as an alternative measure of 'performance'. One popular theory explaining the link between compensation and size is executive productivity theory: most capable CEOs are likely to be matched with the largest, and possibly more complex, firms. In such a context, firm size can be used as a proxy for CEO productivity: larger firm size implies better CEO productivity and thus higher CEO compensation, including cash bonuses.

Taking the above arguments into consideration, we test the following related hypotheses:

(H1a): A bonus is insensitive to the firm's short-term performance and value creation[8].

(H1b): A bonus is insensitive to firm size.

Firms grow to create more value for their shareholders. A firm can expand either through generic internal growth or by taking over other companies. Organic growth can be achieved through investing in inputs (such as human capital and physical fixed assets), improving technology, expanding markets, and so on, thus realizing growth. Growth in this way is gradual and often takes considerable time for the firm to achieve its target. Taking over other companies, on the other hand, enables the firm to expand fairly quickly. For instance, when a firm has superior technology and would like to capitalize on it and scale up quickly, before its competitors replicate the technology, it is better for the firm to grow through acquisitions than by way of generic growth. Despite the different theoretical arguments for growing through acquisitions, a firm should not engage in takeovers purely for the purpose of giving its executives higher compensation, including cash bonuses. However, are top executives rewarded cash bonuses for taking over other companies? Probably yes. In 2008, Pfizer paid a $1.6 million bonus (total compensation $6 million) to Frank A. D'Amelio, Pfizer's CFO, for his role in acquiring its rival Wyeth. In 2000, in the ill-fated £160 billion acquisition of Mannesmann, Vodafone paid £10 million bonus to Chris Gent, the CEO at that time[9].

Mergers and acquisitions thus present an interesting opportunity for us to test the relationship between managerial incentives and the efficiency of their decisions to invest and grow (Datta et al., 2001). In the second part of our empirical analysis, we address the issues of how CEO bonus compensation relates to the likelihood of the firm engaging in takeover activities, and whether such acquisitions are reasonable. If we believe that the US capital market is efficient, a well-reasoned takeover should be welcomed by investors. In order to avoid possible dilution effects on variables, such as EPS, (which might in turn bias the return measures of an acquiring firm), we use the firm's riskiness instead of return as our measurement to distinguish between well-reasoned and poorly reasoned takeovers.

[8] Accounting-based measures, such as earnings, are often used as measures for CEO incentive compensation. However, Ashley et al. (2004) reveal that earnings persistence affects both the structure of CEO compensation and the pay-for-performance association. In this study, though including accounting-based measures, we focus more on market-based measures, such as shareholder value creation, as well as volatility of stock returns.

[9] http://dealbook.blogs.nytimes.com/2009/11/05/rewarding-ceos-for-dealmaking/.

Specifically related to acquisitions, we test the following two hypotheses:

(H2): Firms with CEO bonus increases do not tend to engage in more takeover activities than firms without such bonus increases.

(H3): Among firms that reward bonuses to CEOs and engage in takeover activities, the riskiness of firm assets before and after a takeover does not increase as CEO bonuses increase.

III. Empirical Methodology

We hereby outline our empirical methodology in investigating the testable hypotheses, and discuss our sample construction process. The SEC regulatory change in 2006 of executive compensation reporting rules provides an ideal test as to the agency costs and ethics issues related to a corporate board's decision to reward discretionary bonuses. We thus run all models over our entire data window of 1998-2006 and also separately for two sub-windows, *Sub1* including years from 1993 to 2005 (pre-event) and *Sub2* covering 2006 to 2008 (post-event).

3.1 CEO bonus and firm performance

We follow Jensen and Murphy (1990) in testing (H1), the sensitivity of change in the CEO bonus on the changes in the firm's short-term value creation, financial performance and size.

$$\Delta(CEO\ bonus)_t = a + b\Delta(independent\ variable)_t \quad (1)$$

Different model specifications and their associated implications are as follows:

(a) When $\Delta(independent\ variable)_t$ is defined as $r_t V_{t-1}$, where r_t is the inflation-adjusted rate of return on common stock realized in fiscal year *t*, and V_{t-1} is the firm's market value at the end of the previous fiscal year, equation (1) tests the sensitivity of change in CEO bonus on the change in shareholder total wealth.

(b) When $\Delta(independent\ variable)_t$ is based on the market return-adjusted rate of return on common stock, i.e., $(r_t - market\ index_t) \times V_{t-1}$, the shareholder wealth measure is free of the market's influence;

(c) When $\Delta(independent\ variable)_t$ is defined as $Net\ Income_t - Net\ Income_{t-1}$, equation (1) tests this sensitivity on the change in annual accounting performance;

(d) When $\Delta(independent\ variable)_t$ is defined as $(Total\ assets_t - Total\ assets_{t-1})$ or $(Sales_t - Sales_{t-1})$, we examine the sensitivity on the change in the firm's size.

We posit that, if bonuses reward short-term value maximization, performance enhancement, or if bonuses are instead paid according to firm size, the regression coefficient, *b*, should be positive and significantly different from zero.

3.2 CEO bonus and takeover activities

Similar to the empirical strategy of Davis et al. (2007), we employ a logistic model to test (H2), the association between increased CEO bonuses and the likelihood of a firm engaging in takeover activities.

$$ln\left[\frac{prob(merger_t)}{1 - prob(merger_t)}\right] = a + b(bonus\ flag_{t-1}) \quad (2)$$

Where

$$merger_t = \begin{cases} 1, & if\ there\ is\ a\ takover\ event \\ 0, & otherwise \end{cases}$$

$$bonus\ flag_{t-1} - \begin{cases} 1, & if\ bonus_{t-1} - bonus_{t-2} > 0 \\ 0, & otherwise \end{cases}$$

The coefficient, *b*, can be converted to probability of a bonus-increase firm undertaking acquisitions, relative to that of a non-bonus-increase firm. If the probability is statistically large enough, the evidence supports the argument that when CEOs are rewarded more bonuses they are more likely to acquire other companies.

3.3 CEO bonus, takeovers and firm risk

We also use a logistic model to test (H3), the consequence of takeover activities on the firm, with respect to its riskiness.

$$ln\left[\frac{prob(\Delta risk_t)}{1 - prob(\Delta risk_t)}\right] = a + b(bonus\ flag_t) \quad (3)$$

where

$$\Delta risk_t = \begin{cases} 1, & if\ risk\ of\ firm_t - risk\ of\ the\ firm_{t-1} > 0 \\ 0, & if\ risk\ of\ firm_t - risk\ of\ the\ firm_{t-1} < 0 \end{cases}$$

Agrawal and Mandelker (1987) correctly pointed out that riskiness of a firm is not only composed of the riskiness of its equity, but also its overall leverage. As a result, we classify that a firm's risk increases only when we observe increases both in its financial leverage (measured by the D/V ratio) and in the volatility of its equity (measured by σ, standard deviation of its daily stock return over a period of three months)[1].

We restrict this test to a sub-sample of firms that have conducted takeovers. If the coefficient, *b*, and the corresponding probability are statistically large enough, we interpret the evidence as suggesting that, among acquiring firms, CEO bonus increases are associated with greater likelihood of risky acquisitions (i.e., poorly reasoned takeovers).

3.4 Sample selection and construction of key variables

Our sample begins with all firms listed in the COMPUSTAT ExecuComp database over a 16-year period, from 1993 to 2008, (hence the *data window*)[2]. This sample is then matched to all firms listed in the COMPUSTAT annual database over the same period. Firms that appear in only one database, and firms that belong to financial industries – Standard Industrial Classification (S.I.C.) codes 6,000 through 6,999 – are then excluded. The matched sample contains compensation variables from ExecuComp, such as the

annual bonus rewarded to a CEO (BONUS), CEO's total annual compensation (ANNUALCOM,) which includes bonus, base salary and other annual compensation, and CEO's total compensation (TOTALCOM), which includes annual compensation plus the dollar value of all long-term incentive plans. This sample also contains accounting information from COMPUSTAT, such as Total Assets (TA), Sales (SALE), Net Income (NI), Debt (DEBT) and market value of the firm (MKTVAL) calculated by multiplying the shares outstanding (CSHO) and the price (PRCC_F). This matched sample is called the *basic sample.*

Next, we construct a *takeover sample*, based on both the *basic sample* and a takeover dataset sourced from the Thomson SDC Platinum database. Firms listed in the *basic sample*, but not in the takeover dataset, are assumed to have zero takeover activities. However, they remain in the *takeover sample*. Firms listed in the takeover dataset, but not in the *basic sample*, are discarded from the *takeover sample*. We use the *basic sample* to test (H1a) and (H1b), and the *takeover sample* for examining (H2).

In order to investigate (H3), we consider a subset of the *takeover sample*: we include only those firms that have acquired other companies.

In the spirit of Agrawal and Mandelker (1987), we consider changes both in the acquirer's return volatility and in its financial leverage. The change in volatility (leverage) is calculated by subtracting the pre-event volatility (leverage) from the post-event volatility (leverage). If both changes are positive, we consider the takeover event as 'risk-increasing'; if both are negative, we name it 'risk-reducing' acquisition; otherwise, the acquisition is labeled as 'indecisive'. In order to avoid potential bias on the accuracy of volatility and leverage measures, multiple takeover events done by the same acquirer within any 12-month window are deleted from the takeover dataset.

Table 1 summarizes CEO bonuses during the 16-year *data window* of 1993-2008. It highlights two reasons why bonus payments should not have been ignored in the literature. First, the majority of firms reward bonuses to their CEOs and bonuses represent a large amount of CEO income. During the *Sub1 data window*, from 1993 to 2005, the number of firms that rewarded CEOs with bonuses is about four times that of those that did not. The maximum amount of annual bonus was $102 million, with the average (median) annual bonus around $715,000 ($350,000). During the *Sub2 data window*, from 2006 to 2008, the average (median) bonus dropped substantially to $346,800 ($0). We contribute this drastic difference mainly to the SEC reporting change regarding discretionary bonuses[3]. Second, bonuses represent a non-trivial expenditure to firms. During *Sub1*, an average firm rewarded to its CEO bonuses that accounted for 0.14% (0.05%) of the firm's gross sales (total assets). This ratio dropped in *Sub2* to 0.03% (0.02%).

[1] Daily returns over a period of three months, starting 180 days and ending 90 days before the takeover announcement, are used to calculate the pre-event expected return and volatility. Allowing for 90 days before the event is to avoid potential information leakage. Daily returns over a period of three months, starting right after the takeover and ending 90 days afterwards, are used to calculate the post-event expected return and volatility. The financial leverage pre-/post-event is proxied by the Debt/Value ratio obtained from the most recent COMPUSTAT quarterly data prior to (after) the takeover announcement. Daily stock returns data are sourced from CRSP.

[2] We do not include data in 1992 because the number of observations is less than half of the other years.

[3] As pointed out by Kim and Yang (2010), although only discretionary bonuses should be reported under 'Bonus' after 2006, this is not always correctly reflected in the ExecuComp database.

Table 1. Descriptive Statistics of Key Variables

		Mean	Standard Deviation	Minimum	Median	Maximum	OBS
Bonus	Sub1: 1993-2005	715.1	1608.5	0	350	102015.2	21218
	Sub2: 2006-2008	346.8	1987	0	0	76951	5157
Change in bonus	Sub1: 1993-2005	79.5	1292.7	-97811.9	16.56	43511.5	18867
	Sub2: 2007-2008	-99.7	1910.3	-26985.5	0	75125	3272
Bonus over CEO annual income	Sub1: 1993-2005	0.37	0.25	0	0.41	1	21084
	Sub2: 2006-2008	0.12	0.23	0	0	1	5123
Bonus over CEO total income	Sub1: 1993-2005	0.19	0.17	0	0.17	1	21045
	Sub2: 2006-2008	0.06	0.14	0	0	0.97	5098
Bonus over firm net income	Sub1: 1993-2005	0.0054	0.2313	-27.6	0.003	8.67	21218
	Sub2: 2006-2008	0.0019	0.0221	-0.4	0	0.53	5157
Bonus over firm sales	Sub1: 1993-2005	0.0014	0.0377	0	0.0002	3.41	21218
	Sub2: 2006-2008	0.0003	0.0056	0	0	0.39	5157
Bonus over firm asset	Sub1: 1993-2005	0.0005	0.0012	0	0.0002	0.047	21218
	Sub2: 2006-2008	0.0002	0.0007	0	0	0.025	5157

Note: Change in bonus data is from 1994 instead of 1993.

IV. Key Findings

Our empirical results are discussed below, with all values in all models having been adjusted by the PPI index obtained from the US Department of Labor, and are in 1993 constant dollars.

4.1 Are CEOs paid (annual bonuses) for maximizing shareholder value?

Results of (H1) are presented in Table 2, with columns 2-6 reflecting total bonuses (discretionary plus performance-based) during *Sub1* data window, columns 7-11 representing discretionary bonuses only during Sub2, and columns 12-16 summarizing aggregate results over the entire data window.

Column 2 reports a regression coefficient, *b*, of 0.00003. This implies that when there is an increase in shareholder wealth by $1,000, the CEO's bonus will increase by 3 cents (p=0.00). Column 2 also reports an intercept of 41.2, which means that when there is no change in shareholder wealth, the CEO bonus will go up by $41,200 from previous year. Although the regression coefficient is statistically significant, it represents an economically trivial amount compared to the intercept. How much additional wealth should a CEO create for his shareholders in order to receive $1,000 extra bonus? He will have to bring in market-adjusted wealth of $33 million. Relative to the $41,200 easy money, this certainly does not look attractive. In terms of different specifications of performance, columns 2 to 6 show very consistent results. That is, annual bonus is a statistically important, but economically ineffective, mechanism for motivating the CEO to improve shareholder wealth, firm's accounting profit, or firm size.

Columns 7 to 11 provide some different results and, more importantly, implications. First, the intercept turns negative, indicating a net decrease of discretionary bonuses, regardless of the firm's performance. Second, there is little association between discretionary bonuses and shareholder wealth creation, or between discretionary bonuses and the firm's financial performance. Third, the positive and statistically significant coefficient on firm size seems to suggest that a CEO will be awarded more discretionary bonus when the firm becomes bigger.

In summary, our results reject both (H1a) and (H1b) for years from 1993 to 2005, when both discretionary and performance-based bonuses are reported as annual incentive rewards. However, the sensitivity of bonus to performance is statistically significant but economically less meaningful. Regression results cannot reject (H1a) for years from 2006 to 2008, when we test the association between firm performance and CEO's discretionary bonuses, although firm size does matter in (H1b).

While these results are consistent with the pay-for-size argument of executive compensation, they certainly do not support the idea that discretionary bonuses can help address agency problems. To the advocates of rewarding bonuses to CEOs and other top executives (for retention purposes, for instance), these findings might be somewhat disappointing.

Table 2. Regressions – Are CEOs paid (cash bonus) for maximizing shareholder value?

	Sub1					Sub2					Complete Data Window				
	1994 to 2005	1994 to 2005	1994 to 2005	1994 to 2005	1994 to 2005	2007 to 2008	2007 to 2008	2007 to 2008	2007 to 2008	2007 to 2008	1994 to 2008	1994 to 2008	1994 to 2008	1994 to 2008	1994 to 2008
Intercept	41.2 0.00	47.6 0.00	39.5 0.00	29.4 0.00	35.3 0.00	-55.1 0.02	-50.3 0.03	-45.2 0.05	-61 0.01	-52.7 0.02	31.3 0.00	33.2 0.00	29.3 0.00	16.3 0.01	22.1 0.00
Change in shareholder wealth	0.00003 0.00					-0.00001 0.19					0.00002 0.00				
Change in market adjusted wealth		0.00003 0.00					0.00001 0.18					0.00002 0.00			
change in accounting Profit			0.00031 0.00					0.00008 0.14					0.00025 0.00		
change in sales				0.00009 0.00					0.00008 0.01					0.00009 0.00	
Change in assets					0.00005 0.00					0.00006 0.00					0.00005 0.00
Regression F statistic	295.9 0.00	181.9 0.00	272.7 0.00	180.6 0.00	82.9 0.00	1.7 0.190	1.8 0.178	2.2 0.136	7.7 0.006	9.5 0.002	180.5 0.00	140 0.00	197.4 0.00	161.1 0.00	90.3 0.00
R-squared	0.018	0.011	0.016	0.011	0.005	0.001	0.001	0.001	0.003	0.003	0.009	0.007	0.01	0.008	0.005

a: Sub2 and Complete data windows do not include 2006.
b: All data are winsorized at 1st and 99th percentile.

4.2 Are CEOs paid to take over other companies?

Before getting into regression results, we first examine the direct correlations between change in firm performance – measured in terms of shareholder wealth, accounting profitability, and firm size – and both the level of CEO cash bonus compensation and the change in bonus. Pearson correlation coefficients, separately for the two sub-sample data windows, are presented in Table 3. First, the correlation coefficients with respect to change in CEO bonus are very much consistent with the regression results from Table 2. Second, in terms of the level of CEO bonus pay, the central message is that firm size matters. Before the SEC reporting rule change, movement of all firm performance measures is positive and significant, with the largest correlation being with firm size measured in sales (correlation = 0.22). After the regulatory change, only proxies for firm size, both in sales and assets, are still significantly correlated with the level of CEO cash bonus compensation.

Table 3. Pearson Correlation – Are CEOs paid to increase firm size?

	Level ($) of Cash Bonus		Change in Cash Bonus	
	1993-2005	2007-2008	1993-2005	2007-2008
Change in shareholder wealth	0.12 0.00	-0.03 0.10	0.13 0.00	-0.02 0.19
Change in market adjusted wealth	0.08 0.00	0.01 0.70	0.10 0.00	0.03 0.18
change in acc. Profit	0.12 0.00	-0.01 0.56	0.13 0.00	0.03 0.14
change in sales	0.22 0.00	0.08 0.00	0.10 0.00	0.05 0.01
Change in assets	0.20 0.00	0.07 0.00	0.07 0.00	0.06 0.00
obs	17840	2829	16509	2778

a: Sub2 and Complete data windows do not include 2006.
b: All data are winsorized at 1st and 99th percentile.

As discussed previously, one important channel for a CEO to increase firm size is through taking over other companies. We present regression results concerning (H2) in Table 4. Again, we report findings separately, before and after the 2006 SEC regulation change, and also over the entire data window.

As discussed previously, one important channel for a CEO to increase his firm size is through taking over other companies. Next, we proceed with regression results concerning (H2) in Table 4. Similar to previous tables, we report findings separately before and after the 2006 SEC regulation change, and also over the entire data window.

Column 2, without the independent variable concerning bonus, provides the estimated log odds of firm engaging in takeover activities. The log odds of -0.98 indicate for an average firm, there is an odds of 0.38 that it will take over other companies.[1] Column 3 is the regression model with the predictor variable, change in CEO bonus. The intercept -1.08 provide base-line odds, 0.34, for firms undertaking acquisitions, when their CEOs do not receive increased bonus payments. The odds ratio of 1.32 indicate firms that pay their CEOs more bonus compensation have a 32% higher odds in acquiring other companies than firms without CEO bonus increases. This result is significant at 1 percent level.

Results for Sub2, from 2007 to 2008, are similar to those of 1994-2005. This indicates that our results are insensitive to the SEC reporting change in separating performance-based bonuses from discretionary payments. This is not surprising because of the size impact we identified in (H1b). An acquisition, aside from its potential to improve the firm's future performance, will arguably increase firm size, which in turn is associated with more CEO bonus compensation.

4.3 Are CEOs paid to conduct riskier acquisitions?

Table 5 presents regression results concerning (H3)[2]. While it follows the same structure as Table 4, we now shift our attention from all takeovers to those that are risk-increasing. The empirical framework and definition of risk-increasing takeovers are outlined in Section 2.3.

For *Sub1* of 1994-2005, when reported bonuses include both discretionary and performance-based components, an average firm has almost the same odds, and in turn the same likelihood, to undertake either risk-increasing takeovers or risk-decreasing acquisitions (indicated by the intercept of -0.02). If a firm's CEO receives smaller bonus compensation in comparison to the previous year, the firm has odds of 1.18 that it will undertake risky takeovers, as implied by the intercept of 0.17. On the contrary, if the CEO's bonus has gone up, the odds decrease by 69%, to 0.82. The difference between these two scenarios is statistically significant at the 1% level. For sub2, an average firm has odds of 2.8 that it will undertake risky takeovers, and the corresponding likelihood of such behavior is statistically independent of its CEO's bonus compensation.

The combination of Tables 4 and 5 provide some interesting implications. Discretionary bonuses, which we have shown to have no link with improved firm performance, are associated with the greater likelihood that a firm takes over other companies. However, these takeovers do not seem to generate an overwhelmingly positive response from the equity market. Performance-based bonus, which is related to enhanced performance and higher shareholder value, is also associated with greater likelihood of firm's acquiring other companies. In addition, these acquisitions are less risky. However, we are cautious not to over-claim. After all, discretionary and performance-based bonuses are not reported separately prior to December 2006.

V. Discussion

In standard agency theory, executive compensation is viewed as a solution to shareholders' optimal contracting problem, given that "boards are assumed to design compensation schemes to provide managers with efficient incentives to maximize shareholder value" (Bebchuk and Fried 2003). An effective compensation contract should have a clearly defined principal's objective, measurable standards for agent performance, and effective enforcement when the performance exceeds the standards *and* when it is far from meeting the standards.

Cash bonuses, accounting for 37% of CEO annual compensation[3] and at times amounting to millions of dollars, have not received the attention in current executive compensation literature accorded to other stock-based items, such as stock options. The current paper addresses this issue. We find that cash bonuses are statistically important, but not economically effective, in aligning the interest of the CEO with those of his shareholders. First, while it is true that the principal's objective (e.g., short-term value maximization) is sometimes stated for performance-based bonuses, it does not apply to discretionary bonus payments. Second, the agent's performance standards are not always clearly measurable. In addition, the economic meaningfulness of achieving these standards is questionable. The

[1] Based on probability theory, the odds in favor of a firm taking over another company are defined as = (p/1-p), where p stands for the probability of such a takeover event, and 1-p for the probability of nothing happening. The log odds, therefore, are defined as = log(p/1-p).

[2] In a sub-sample with only firms that do takeover other firms.

[3] This is for the sub-sample period of 1993-2005, when reported cash bonuses include both discretionary and performance-based components. Over the sub-sample period of 2006-2008, discretionary bonuses represent about 12% of CEO annual compensation, while the performance-based component is no longer disclosed under cash bonus.

change in CEO bonus has low sensitivity to the change in the oft-used measures of firm performance. Relative to bonus increases (decreases) without any change in underlying performance, such sensitivity is trivial. Last but certainly not least, discretionary bonuses certainly provide no punishment to the CEO. Even performance-based bonus components only reward the CEO when he beats a benchmark; however, offers little downward pressure when the benchmark is missed.

Table 4. Logistic Regressions – Are CEOs paid to take over other companies?

	Sub1		Sub2		*Complete Data Window*	
	1994 to 2005	1994 to 2005	2007 to 2008	2007 to 2008	1994 to 2008	1994 to 2008
Intercept	-0.98	-1.08	-1.10	-1.18	-0.99	-1.16
	0.00	0.00	0.00	0.00	0.00	0.00
Bonus increase		0.27		0.36		0.35
		0.00		0.00		0.00
OBS	14992	14992	2673	2673	17665	17665
Log-likelihood	-8792.7	-8748.9	-1497.3	-1492.5	-10293.8	-10241.5
odds ratio		1.32		1.43		1.42

a: Sub2 and Complete data windows do not include 2006.
b: All data are winsorized at 1st and 99th percentile.

Table 5. Logistic Regressions – Are CEOs paid to conduct riskier acquisitions?

	Sub1		Sub2		*Complete Data Window*	
	1994 to 2005	1994 to 2005	2007 to 2008	2007 to 2008	1994 to 2008	1994 to 2008
Intercept	-0.02	0.17	0.98	0.98	0.11	0.34
	0.48	0.00	0.00	0.00	0.00	0.00
Bonus increase		-0.37		0.01		-0.49
		0.00		0.97		0.00
OBS	3399	3399	556	556	3955	3955
Log-likelihood	-2355.8	-2341.7	-326.1	-326.1	-2735.8	-2706.5
Odds ratio		0.694		1.011		0.613

a: Sub2 and Complete data windows do not include 2006.
b: All data are winsorized at 1st and 99th percentile.

Is it economically meaningful and ethical for a firm to pay large bonus to its CEO and other top executives? Probably not. Performance-based bonuses have shown to be economically ineffective in motivating the CEOs to act in the best interests of his shareholders. Discretionary bonuses, based on our analyses, add no value to shareholders. Yet it is with great amazement that we observe how popular bonuses have become – with 7-8 out of every 10 firms in America rewarding bonus compensation to their CEOs – and how handsome these payments can be. In a sense, instead of its traditional role as a solution, CEO bonus compensation has become part of the principal-agent problem.

There might, however, be some hope. Recent events suggest that both the SEC and some firms, in particular those in the financial industries, are taking actions to address the ethical concerns of the cash bonus. The improved SEC reporting rules have required separate disclosure of discretionary bonuses, which are paid out without any classical shareholder-value-maximization rationale. Now, even an unsophisticated shareholder can start thinking about whether she wants to hold shares in a firm whose board generously gives her money to the CEO without a good reason. The effort from industry to improve the effectiveness of bonuses has also occurred. In 2008, Goldman Sachs declared that it would ask its executives who received bonuses to donate a certain percentage (not yet exceeding 100% though) to charity, as negative bonuses. Let us hope this is not merely window dressing or crisis management to sooth the public's fury towards ineffective, sometimes unethical bonus checks. Rather, it should serve as a first voluntary step towards making CEO cash bonuses more accountable.

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CORPORATE GOVERNANCE REGULATION IN BANKS IN THE CONTEXT OF CRISIS: THE ROLE OF THE NATIONAL BANK OF UKRAINE

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Abstract

This paper gives an overview of corporate governance and banking regulation in Ukrainian banks. Particular attention is paid to the regulatory changes by the National Bank of Ukraine which were made in response to the financial crisis. The paper focuses mainly on the regulation influencing the payment schemes and the size of the regulatory capital as the elements of corporate governance system. The research suggests that some documents issued by the National Bank of Ukraine have a contradictory affect on banks' sustainability and might provoke the conflict of interests within the structure of corporate governance.

Keywords: Corporate Governance, Basel, Crisis, Regulation, Banks

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1. Introduction

Banks play a significant role in promoting economic development of a country. They fulfill a very important task by matching borrowers and lenders. Banks act as intermediaries when they mobilize savings from surplus units (savers) to shortage units (borrowers) in order to finance productive activities. In the economic system only banks take deposits and grant loans.

Banks are not self-regulated institutions. Each single bank is ruled by corporate governance. Given the importance of banks, the governance of them itself assumes a central role. If bank managers face sound governance mechanisms, they will be more likely to allocate capital efficiently and exert effective corporate governance over the firms they fund. In contrast, if banks managers enjoy enormous discretion to act in their own interests rather than in the interests of shareholders and debtholders, then banks will be correspondingly less likely to allocate society's savings efficiently and exert sound governance over firms. Clearly then, skilled corporate governance is a key factor to bank's success.

Banking system in whole is regulated by Central Bank (National Bank of Ukraine - NBU) which fixes certain requirements, restrictions and guidelines. Because of the importance of banks in the economy, because of the opacity of bank assets and activities, and because banks are a ready source of fiscal revenue, government imposes an elaborate array of regulations on banks. This is especially true in the context of crisis, when the necessity for drastic measures increases tenfold. Crucial problems of banking system arose on the basis of poor liquidity, insufficient capital (both authorized and regulatory), problem assets, bad debts and others. In order to mitigate the effects of crisis in banking sector, several statements were issued by the government. In banks that suffered most temporary administration was introduced. However, taking into account the fact that temporary administration phenomena is widely examined already, the authors concentrated on the statement on improving liquidity of banks at a loss (№421, from 22.07.2009) and statement on enlarging the regulatory capital of banks (№273, from 09.06.2010).

The article focuses on research and assessment of regulation of corporate governance in banks by the NBU during crisis. The main aim is to estimate the timeliness and appropriateness of statements issued on the corporate governance of Ukrainian banks.

2. Literature review

The issue of CG in banks and the aspect of its regulation were examined by several authors as the topic is turning into practical question for the countries due to the globalization processes and liberalization of financial markets.

Corporate governance of banks is largely concerned with reducing the social costs of bank risk-taking and that the regulator is uniquely positioned to balance the relevant stakeholder interests in devising governance standards for financial institutions that achieve economic development objectives, while minimizing the externalities of systemic risk (Kern A., 2006).

Governance in the banking sector is achieved through a set of legal, accounting, financial, and economic rules and regulations. These rules and regulations direct the management, govern performance, and assist in carrying out the responsibilities of the sector (Mahmoud Abul Ayoun, 2003).

Central banks as the main regulators of the banking sector play an important role in defining and reinforcing the principles of good governance in banks.

For example, State Bank of Pakistan (SPB) has been on the forefront in promoting good corporate governance in the country. SBP has implemented a comprehensive corporate governance regime for banks, which is driven by a robust legal and regulatory framework, risk-based supervision and over-arching banking sector reforms, notably, privatization, liberalization and consolidation of banks (Shamshad Akhtar, 2008).

Luc Laeven & Ross Levine (2008) conduct the first empirical assessment of theories concerning risk taking by banks, their ownership structures, and national bank regulations. They show that the relation between bank risk and capital regulations, deposit insurance policies, and restrictions on bank activities depends critically on each bank's ownership structure, such that the actual sign of the marginal effect of regulation on risk varies with ownership concentration.

Peter O. Mülbert (2010) states that poor corporate governance of banks has increasingly been acknowledged as an important cause of the recent financial crisis. Whereas banking regulation/supervision acts as a functional substitute for debt governance, equity governance benefits less from such regulation/intervention. Put succinctly, shareholder interests and supervisors' interests do not run exactly parallel, not even from a long-term perspective.

T.G. Arun and J. D. Turner (2004) contributed into the examination of corporate governance of banks in developing economies: Based on a theoretical discussion of the issue, authors suggest that banking reforms can only be fully implemented once a prudential regulatory system is in place.

The role of financial regulation in influencing the development of corporate governance principles has become an important policy issue, however concerning the crisis period it has received little attention in the literature, especially in Ukrainian environment.

3. Methodology

The data collection covers the wide scope of information concerning corporate governance regulation in banks with the particular attention paid to the National Bank of Ukraine as the main regulator of the Ukrainian banking environment. The relevant legislation analyzed within the framework of banking corporate governance regulation is as follows: Law of Ukraine on Companies (or: Law of Ukraine on Business Associations), No. 1576-XII, 1991 (with amendments through 1995), Law of Ukraine On Securities and Stock Market, 2006, Ukrainian Corporate Governance Principles, 2003, Law on Joint Stock Companies, 2008, Civil Code, 2004, Commercial Code, 2004, Law of Ukraine on State Regulation of Securities Markets in Ukraine, 1996, Presidential Statement on Investment Funds and Investment Companies, 1994, Bank and Banking Activity Act No. 2121, statement of the NBU No.98 as of 28.03.2007 "Guidelines for improving corporate governance in banks". Concerning the crisis aspect of the issue the NBU statement No 273 "Amendments to the regulative documents of the NBU" (9.06.2009) and NBU statement No 421 "On some issues concerning the activities of banks during the financial crisis" (22.07.2009) were considered during the research.

This paper covers the period of 2008-2010 and the sample of the registered banks with reference to the NBU statistics (Table 1).

The research focuses on the influence of the NBU on the corporate governance in banks by introducing legislative documents and requirements aimed at stabilization of the banking sector through the impact on the regulatory capital and liquidity of the banks. The research also explores the historical background of the problem and uses the comparison method of analysis.

Table 1. Main indicators of Ukrainian bank activities

№	*Indicators*	*Date*			
		January 1, 2008	January 1, 2009	January 1, 2010	January 1, 2011
1	Number of registered banks	198	198	197	194
2.	Excluded from the State Bank Register	1	7	6	6
3.	Number of banks under liquidation	19	13	14	18
4.	Number of banks that have licenses for performance of banking operations	175	184	182	176

Source: The National Bank of Ukraine

4. Corporate governance regulation framework in the banks of Ukraine

4.1. Background to the concept

Corporate governance is a new concept in Ukraine. Nevertheless, there is a certain legislative and regulatory landscape to implement the practices of corporate governance. The concept of corporate governance in Ukrainian banks got reflected in national legislation with the Civil Code of Ukraine, Banks and Banking Activity Act, Joint Stock Companies Act and the statements of the NBU being the main provisions for the procedures related to the CG in banks.

The National Bank of Ukraine is the main regulator of the banking sector, hence its influence and role is essential enough to determine the CG performance in Ukrainian banks.

In practice the function of the NBU in the sphere of regulation of corporate governance in commercial banks is realized in several ways:

- NBU's participation in the legislative process;
- development of the relevant provisions of the NBU.

Supervision by the NBU of the formation of the corporate governance bodies of banks is a key issue of NBU's participation in CG in banks.

NBU's functions in the formation of the management of banks are as follows:

- approval of the chairman of the board elected by the supervisory board of the bank;
- approval of the chief accountant of the commercial bank, appointed by chairman of the board and elected to the board by the supervisory board.

NBU's initiative to introduce a temporary administrator in commercial banks as a way to improve the financial stability of banking institutions in the financial crisis of 2008-2009, also belongs to corporate regulation (Kostyuk A., 2010).

While there are a number of documents determining the "elements" of corporate governance in Ukrainian banks, one of the recent acts which worth attention (especially taking into account the global trend on national code/principle implementation) is the statement of the NBU of 28.03.2007, № 98 "Guidelines for improving corporate governance in bank". These recommendations do not replace but rather complement the corporate governance principles adopted by the State Commission on Securities and Stock Market dated by 11.12.2003. This statement outlines key recommendations on the activity of Supervisory Board, Executive Board etc. For example, point 1.4 of Chapter 1 "The role and responsibility of the Supervisory Board" says that performing the functions of supervision and control over the activities of the Executive Board, Supervisory Board appoints, controls, and if necessary replaces board members taking care of certain succession plan in top management, examines possible successors in terms of their professional qualifications and skills and ability to manage the affairs of the bank. The Supervisory Board also sets the remuneration of the members of the Board, considering their responsibilities and remuneration police in the bank. Chapter 2 of the document defines the criteria for professional independence and conformity of the Supervisory Board, NBU's experts consider including at least 25% of qualified independent members to the Supervisory Board and creating audit and other committees headed by independent members as the instrument to strength independence and objectivity of the Supervisory Board. Chapter 4 of the document contains recommendations concerning structure, formation and procedures of the Supervisory Board.

Issues regarding committees of the Supervisory Board are developed in chapter 5. According to the National Bank, "Creation of Supervisory Board committees dealing with specific issues of its

activities maximize the effectiveness of the Supervisory Board". Taking into account recommendations, the Supervisory Board at its discretion, establishes such committees, but is responsible for the results of their activities. In this case, committee is composed of at least three board members. Besides one of the committee members should have specific professional education in the sphere of certain committee. Meetings of such committees should happen at least once a quarter or more often if this is necessary. It's highly appreciated if banks establish audit committees, risk management, corporate governing and nominating ones [8]. In general, other sections of the document define recommendations for internal and external control, questions of succession, disclosure of information and the activities of the Executive Board.

It should be mentioned that one of the main possible positive outcomes of the implementation of these recommendations is that it will give NBU the opportunity to form the institute of independent directors - members of supervisory boards, active participation of whom will increase confidence in the commercial bank by shareholders, investors, customers, and as a result of the banking market regulator - the National Bank of Ukraine.

The number of bad banks in Ukraine proves inadequate current system of corporate governance, primarily meaning this formal character of relationship and the lack of oversight by supervisory boards of the risk management. Therefore, one of the main tasks of the state in solving this problem is the implementation of mobility mechanisms which influence the internal procedures of corporate governance in banks.

In fact, corporate governance practices in Ukrainian banks are formed under certain contradictory factors. Among the internal factors, above all, the peculiarities of formation of private banks with share ownership in early 1990 in a liberal state policy concerning the banking system should be mentioned. Since that time the typical features of corporate governance in banks are the high concentration of ownership and control in the hands of majority shareholders, the practice of servicing the interests of owners and their private financial-industrial groups, the opacity of corporate structure and so on. On the other hand, major incentives for the development of good corporate governance give the external factors of globalization processes: the arrival of foreign investors into the domestic market, increased competition and dependence of the Ukrainian banks on borrowing in international capital markets. Under the influence of these external factors, the role of public banks and their presence in the stock market is increasing. The current crisis implications put forward new policy emphasis on changing the formal approach of risk management in banks. State policy in the regulation of corporate governance should take into account the effect of both internal factors that shape the specifics of national environment and external factors that stimulate the most effective objective management mechanisms.

Nowadays it could be mentioned that the state and NBU particularly made significant steps towards establishment of a national legal framework in line with international standards. As a result of evaluation mission of IMF and World Bank held in 2002 and 2007 under the Financial Sector Assessment Program Ukraine (FSAP), the very positive work of the NBU on implementation of the Basel Committee standards and best practices in supervisory activities were noted. However, given the voluntary nature of the recommendations the question of their degree of compliance by banks still exists. According to the IFC research "Investigation of changes in corporate governance of the banking sector of Ukraine", only 25% of survey participants confirmed that they improve corporate governance in accordance with the implementation of legislative documents. On the other hand, it is the NBU CG Guidelines and corporate governance principles of the State Securities Commission which are the main sources of information on corporate governance in Ukraine.

In the period of crisis risk management and internal controls in banks require an immediate attention. Hence, the priorities of the NBU today are concentrated mainly on measures to stabilize the financial performance of banks. But in terms of the post-crisis perspective the issue of banking supervisory matters transition to Basel II standards remains relevant.

Taking into account the current performance of Ukrainian banks and strategic plans of Ukraine to join the European Union, public authorities should consider the initiatives of the Basel Committee on anti-crisis and long-term measures to improve bank supervision and regulation.

Thus, the role of the Ukrainian banking regulator in post-crisis period is to strengthen legislative, regulatory and supervisory functions with reference to the following priorities:

- Accelerating the adaptation of national legal system to European norms and standards of corporate governance in banks with concern to the specific national environment;
- Continuation of market reforms on stock market development and increase of investment attractiveness of the country in order to promote the influence of good CG factors on corporate governance on Ukrainian banking system;
- Development of measures to monitor and control the activities of public banks on stock
- market;
- Improvement of the regulatory framework for the assessment and management of banking risks in accordance with Basel II;
- Spreading the practice of information disclosure by banks through the introduction of legislative

and regulatory requirements, and cooperation with stock exchanges (Golovina Y., (2009).

4.2. The NBU regulation of banks' liquidity in crisis

Crisis consequences and rising number of banks at a loss forced the NBU to issue a statement №421 "On some issues concerning the activities of banks during the financial crisis" on June 22, 2009. The statement contained mandatory restrictions for the corporate governance of unprofitable banks. Among other points, the NBU obliges the corporate governance of banks that are at a loss:

- to stop dividend payment to shareholders or capital allocation in an form;
- to stop any bonus payment to all bank staff;
- not to increase the amount of capital investment and intangible assets;
- not to spend any sums of money on financial consultant service (and to review exciting contracts);
- not to establish new subsidiaries and departments;
- to take urgent measures in order to upturn the level of liquidity, profitability and optimization of bank costs.

The NBU bans the following operations for unprofitable banks:

- providing blank credits;
- carrying out active transactions with insiders, in particular regarding new loans and guarantees;
- making early repayment of debt securities of banks' own emissions except when early repayment of debt securities of banks' own emission occurs at a price not higher than 50% of nominal, and does not result in a significant deterioration in liquidity;
- making redemption;
- purchasing private securities on banks' behalf.

In a year, on July 06, 2010 the statement №421 was cancelled by the statement №315, issued by the NBU "On cancellation of NBU statement on some issues concerning the activities of banks during the financial crisis". According to the document, all the restrictions implemented by the №421 statement are not valid any more for the reason of positive trends in banking system.

The analysis of the banking system of Ukraine during the period 2009-2010 years showed that in July, 2009, when the statement №421 was issued there were 64 unprofitable banks, which fall under the effect of the statement (one of the most efficient reason for banks' losses was reserve allocations on credit operations). However, in July, 2010 only 24 banks out of 64 under consideration still remained at a loss. At the same time, 28 banks earned profit and 12 were in process of liquidation. Moreover, as for the January 01, 2011, the number of profitable banks escalated to 31 (Appendix 1).

Prior to the 2011 Banking Supervision was prohibited to impose sanctions concerning the situation when the losses of financial institutions are caused by the forming the reserves and funds for compensation of possible losses on credit transactions effected pursuant to loan agreements entered into prior to October 1, 2008, or on restructured loans. However, such mitigation requirements were the subject to the provision by the bank schedule of gradual (within six months) bringing these economic standards to the level approved by the NBU.

Particular emphasis is placed not only on the bans, which are inherently logical and justified in crisis conditions, but also on very loyal approach to the banks, the losses of which are explained by the need to create reserves for loan portfolio. The majority of the points of the statement are aimed at minimizing the outflow of funds from banks. In particular, debt investors are hardly able to realize the right to bring debt instruments of banks to buyback. In this way the statement was able to reduce the expanses of banks in the short term and brought encouraging results.

At the same time, it should be mentioned that statement №421 was conflict-arising towards shareholders in the aspect of dividends and towards staff – in bonuses. Moreover, it did not provide any sufficient background to identify and prevent alternative ways of getting abovementioned payments, which could be determined as payment manipulations. That's why after the cancellation of the document the necessity of the new anticrisis banking regulation came to pass.

4.3. The NBU approach to the banks' regulatory capital

The increased application of regulatory capital requirements to financial institutions has been a significant trend in corporate governance and financial regulation over the past half century. Regulatory capital requirements largely originated in the United States as a response to the deregulation of the 1970s and 1980s. Because of the Glass-Steagall distinction between commercial banks and securities firms, two parallel regimes were developed. One is for banks and is administered by the Fed, OCC and FDIC. The other is for securities firms and is administered by the SEC. Under this bifurcated system, capital requirements have been implemented for different purposes, reflecting the differing natures of banks and securities firms. The term "regulatory capital" firstly was implemented in the Basel I[30].

In the Basel I accord bank regulatory capital was divided into two "tiers", each with some subdivisions. Tier 1 capital, the more important of the two, consists

[30] Basel Committee on Banking Supervision (1988), International Convergence of Capital Measurement and Capital Standards, Basel.

largely of shareholders' equity. This is the amount paid up to originally purchase the stock (or shares) of the bank (not the amount those shares are currently trading for on the stock exchange), retained profits subtracting accumulated losses, and other qualifiable Tier 1 capital securities.

Regulators have since allowed several other instruments, other than common stock, to count in tier one capital. These instruments are unique for each national regulator, but are always close in nature to common stock. One of these instruments is referred to Tier 1 capital securities.

There are several classifications of tier 2 capital, which is composed of supplementary capital and is called temporary capital unlike tier 1 which is permanent capital. In the Basel I, it is stated, that tier 2 includes undisclosed reserves, revaluation reserves, general provisions, hybrid instruments and subordinated term debt.

Undisclosed reserves are not common, but are accepted by some regulators where a bank has made a profit but this has not appeared in normal retained profits or in general reserves. Most of the regulators do not allow this type of reserve because it does not reflect a true and fair picture of the results.

A revaluation reserve is a reserve created when a company has an asset revalued and an increase in value is brought to account. A simple example may be where a bank owns the land and building of its headquarters and bought them for $100 a century ago. A current revaluation is very likely to show a large increase in value. The increase would be added to a revaluation reserve.

A general provision is created when a company is aware that a loss may have occurred but is not sure of the exact nature of that loss. Under pre-IFRS accounting standards, general provisions were commonly created to provide for losses that were expected in the future. As these did not represent incurred losses, regulators tended to allow them to be counted as capital.

Subordinated debt is forms lower tier 2 debt, usually has a maturity of a minimum of 10 years. To ensure that the amount of capital outstanding doesn't fall sharply once a lower tier 2 issue matures and, for example, not be replaced, the regulator demands that the amount that is qualified as tier 2 capital amortizes (i.e. reduces) on a straight line basis from maturity minus 5 years (e.g. a 1 bn issue would only count as worth 800 mln in capital 4 years before maturity).

Regulators in each country have some discretion on how they implement capital requirements in their jurisdiction. According to the NBU bank's regulatory capital is one of the key banks indicators, its' primary purpose is to cover the negative consequences of various risks that banks accumulate in their activity, and protect deposits, financial stability and stable operation of banks. Regulatory capital is composed of basic (level 1) and additional capital (level 2) capital.

Basel I has been replaced by a significantly more complex capital adequacy framework commonly known as Basel II[31]. After 2012 it will be replaced by Basel III[32] that is a new global regulatory standard on bank capital adequacy and liquidity. The third of the Basel Accords was developed in a response to the deficiencies in financial regulation revealed by the Global Financial Crisis. Basel III strengthens bank capital requirements and introduces new regulatory requirements on bank liquidity and bank leverage.

Basel III proposes many new capital, leverage and liquidity standards to strengthen the regulation, supervision and risk management of the banking sector. The capital standards and new capital buffers will require banks to hold more capital and higher quality of capital than under current Basel II rules. The new leverage and liquidity ratios introduce a non-risk based measure to supplement the risk-based minimum capital requirements and measures to ensure that adequate funding is maintained in case of crisis[33].

Serious measures to improve the financial sector through the corporate governance regulation are not only planned but also implemented in Ukraine. NBU has increased "capital" standards for the market, but in a very peculiar way – by increasing the absolute criteria for its adequacy rather than relative ones, as world practice has.

At the insistence of international financial institutions Ukraine held two stress-testing for banks on their compliance with the criteria for adequacy. According to the results of the last one, Ukrainian banking system needs a capital increase estimated at 40 bln UAH. Obligation to increase this amount of bank capital by the end of this year was recorded in the agreement between Ukraine and the IMF.

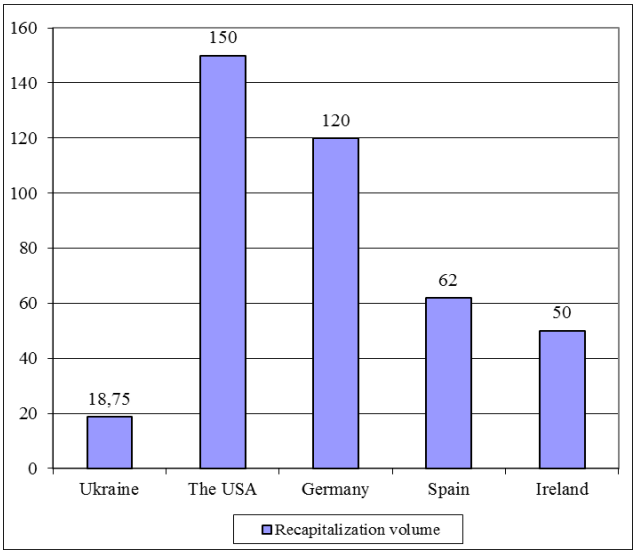
According to Fitch, the capital needs of the Ukrainian banks may be much larger. According to analysts of the agency since the beginning of the crisis (the fourth quarter of 2008) before the end of the first half of this year, revenues of the new capital in Ukrainian banking system amounted to about Moody's Analytics: "Basel III New Capital and Liquidity Standards FAQs" 86 bln UAH that is more than half the sector needs to recapitalize, which is about 150 bln UAH according to earlier calculations of the agency (figure 1).

[31] Basel Committee on Banking Supervision (2004), International Convergence of Capital Measurement and Capital Standards. A Revised Framework, Basel.

[32] http://www.bis.org/list/basel3/index.htm

[33] http://www.moodysanalytics.com/~/media/Homepage/Insights/MA-Basel-III-FAQs.ashx

Figure 1. Recapitalization needs of banks in different countries, bln USD



As noted by the agency experts themselves "considerable uncertainty remains regarding the ultimate level of losses in the system as a whole and at individual banks, and hence on the final cost of sector recapitalizitaion". In this case, progress in dealing with problem loans and recapitalization will be the major challenges for the system.

On the 13th of July The National Bank of Ukraine sent to the banks a Statement № 273[34] from 09.06.2010 "About Changes to Some Regulative Documents of The NBU" with which among everything stated:

Point 2. Banks, that on the 16th of July 2010 have regulative capital less than 120 mln UAH are obliged to increase it up to the mentioned level before the 01.01.2012.

Point 6. Banks who do not fulfill this requirement will be prohibited to accept deposits from individuals over the volume recorded at the time of coming into force of Resolution № 273.

In such conditions banks, that were in the black list (their quantity on the 16.06.2010 was 49 – 28% of the total Ukrainian banking system (Appendix 2) had three possible ways to act:

- to accept the requirements and to enlarge their regulatory capital;
- do not accept the requirements and feel the consequences on their own experience;
- to use all possible reserves and draw on the 16.07.2010, the short-term (up to several days), deposits of individuals, in order to increase artificially the limit of the deposit portfolio to the date of the regulatory capital increase.

Apparently, many banks chose the third way, as the NBU had to change the rules of the game, or rather the date on which to fix deposit portfolio. According to a letter from 23.07.2010 № 40-111/3557- NBU reports that "for the banks, which at the time of entry into force of Resolution № 273 had the size of regulatory capital less than 120 mln UAH , the volume of deposits of individuals should be fixed on the 20.07.2010 (according to the balance of 19.07.2010).

In other words, 23.07.2010, having a data of the banks' reports on 20.07.2010, and apparently observing the outflow of those deposits, which were collected on the 16.07.2010, the NBU retroactively change the record date of the deposit portfolio. Moreover, the NBU elaborates that the replenishments of the deposit contracts that provided for the capitalization or the completion on 16.7.2010 are also not counted in the calculation. Only contracts signed after 16.07.2010 or that concluded additional agreements on increasing the deposit amount after the mentioned date will be taken to the account.

In this peculiar manner the regulator makes it clear that paragraph 6 of Resolution № 273 from 09.06.2010, should be executed anyway but in fair way, and the only possible variant to solve this problem for banks is to increase the regulatory capital.

Several questions appear so far: how fair and reasonable the solutions of NBU are, does the current recapitalization in Ukraine correspond to the global trends and would their completion make domestic banking system more reliable?

This debatable issue was discussed by a lot of bank directors and banking association representatives.

Opponents of raising the minimum regulatory capital (small banks managers in majority) called it discriminatory, violation of the basic principle of competition – the equality of all market participants.

To protect the small banks it could be mentioned that there is no problem of liquidity, there is a

[34] http://zakon.nau.ua/doc/?uid=1194.503.0

challenge where to place these funds – the problem of borrower reliability. The thing is that customers today is not ready yet to receive these resources, because they are busy restoring the problems of sale of goods and services, aimed to achieve a minimum level of profitability, and vital issue that raised due to the new crisis share of the debt service costs because of the general decline of return on their activity.

The high rate of capitalization may discredit the very idea of capitalization as a way to improve the safety and stability of the bank, since small financial institutions in such short terms will be forced to use certain manipulations. All Ukrainian banks that have become problem banks or have been eliminated were capitalized at high rates.

Basel III defined stages of raising capital - from 2013 till 2018.[35] The bank's recapitalization demands for the banks of the third and fourth groups should be gradually and adequately fit in mentioned period so as to bank are able to recapitalized without extra problems.

Due to higher requirements to the minimum level of regulatory capital banks of the third and fourth groups must increase their capital base in half as much again that could result in a corresponding capital efficiency decrease, because to date the banks are not capable to increase their assets half-fold as no one knows where to get such sources for capitalization.

Small banks today are more stable than large financial institutions. As the argument the following data could be provided: the ratio of capital to assets and capital to deposits of the fourth group takes in first place among different groups of banks, and the third group is on the second place. In addition, small banks in their liabilities have NBU refinancing share that is half of that of big banks, as they were not that active in taking upon currency risk by lending foreign currency (20-30% of the portfolio, comparative to 60-70% in big banks).[36]

A high level of regulatory capital does not save the banks from problems, e.g. Ukrprombank' default with the regulatory capital 16 times higher than the norm now. Opponents of Statement №273 consider evaluation of capital adequacy rate for all banks as more economically grounded for banking system capitalization.

On the other hand the decision of Statement № 273 adoption has some arguments in it's' favor. Because of the market dispersion today native banks do not have the enough financial ability to support large-scale projects, that's why for example the Euro-12 preparations are mainly held by the state budget.

Banks need a high level of capital to cover not only credit risk (the level of NPLs in the banking sector in Ukraine is 35-40%), but also market risks, risks of expected and unexpected losses, etc.

Efficiency of the banking system directly depends on the level of capitalization and in the context of the development of system's infrastructure. The question of efficiency is a good opportunity for a number of banks to merge and become more profitable. The Ukrainian banking system needs a jump for which it needs investment that require capital.

It's important to admit, that not only the level of capital determines the competition. Large banks have their own advantages, but also some specific problems. In addition, they represent a greater systemic risk to the whole banking system. Small banks have other risks, although they do not affect the system stability to such an extent as larger banks do. Usually on the market that works properly, there is room for everyone - for medium, small and large banks, specialized and universal. Size is just one of comparative advantage, in addition to financial stability, portfolio diversification, customer service quality etc. And sometimes not to be big is an advantage.

The regulator support and the achievement of financial stability - in the interests of all banking sector participants and interested groups, even if it means the necessity to bring in an additional capital. Large banks, especially those that are the part of international financial groups generally have more opportunities to build up capital.

However, small banks also need to raise capital following the regulatory requirements. This is mandatory for anyone who wants to stay in business. Perhaps it is difficult now, but in the end it will make the banking sector stronger and support the economy more adequately, which is the biggest contribution to the stability of the entire society.

National Bank in its turn is pointing out that bank is a specific institution responsible not only for the funds of shareholders, but also for appealed depositors and creditors' funds. Stating from the nature of banking operations in their activities certain risks appear, list of which does not concluded the prescribed standard of regulatory capital adequacy. Even with the assets of sufficient quality, bank with insufficient insolvency covering of risk is not able to provide payments to creditors and depositors in proper time and in full measure. The size of regulatory capital should cover the negative consequences of various risks that banks assume in their work.

In his comments, the National Bank refers to the Directive 2006/48/EC of European Parliament and Council from 14.06.2006[37], which defines the criteria for minimum capital requirements for banks, which "must be proportionate to the risks to which they are directed". NBU motivated introduction of Statement

[35] http://www.bis.org/press/p100912.htm

[36] http://www.bank.gov.ua/Bank_supervision/index.htm

[37] http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=OJ:L:2006:177:0001:0001:EN:PDF

273 standards by "the need to protect bank depositors from the risk of undue payments and prevent panic among the population".

The norm of 120 mln UAH. was established in accordance with the Regulations on the procedure of regulating the activities of banks in Ukraine (as was in force until June 2010) the minimum amount of regulatory capital is at least 10 million euros. The minimum level of regulatory capital in UAH must be calculated at the rate of the euro, defined as the arithmetic average of the IV quarter of 2009 (11.81706. UAH for 1 euro).

It should be noted that despite crisis, the process of increasing the owned capital is continuing. Thus, for 10 months of 2010, the owned capital increased by 17,8% (up to 140 bln), and regulatory - on 13,3% (up to 154 bln)[38].

With the help of measures taken before the crisis, the current capital structure of Ukrainian banks is similar to the envisaged reform package of the Basel Committee. Therefore, controller does not intend to raise the absolute value of the adequacy of regulatory capital standard (10%) that is currently high enough and the main issue is an improving the quality of regulatory capital due to the changes in requirements for its structural components.

An intensive banking regulatory activity is also typical for actual events in the world. In November 2010, G-20 leaders approved the new rules for banking regulation (known as Basel III), establishing a much more stringent criteria for quality, transparency and adequacy of bank capital and assets. The idea is that it should cool the top managers and shareholders propensity to undue risk and enhance banks' immunity to new cataclysm.

Gradual transition to the new standards is to begin in January 2013, but by 2019 the banks will have to bring their capital in full compliance with them.[39]

After the entry into force of the Basel III lack of owned capital in 35 largest credit institutions of USA amount to 100-150 billion dollars with 90% of this amount fall into six major banking institutions. The need to increase the capital of the top ten largest German banks exceeds 100 billion Euros.[40]

Bank of Spain currently estimates that potential needs to bring core Tier 1 to 8% for all banks should not exceed EUR 20bn.[41] Moody's downgraded its rating on Spanish government bonds to the second highest notch on fears that the cost of re capitalizing the country's many cajas would probably reach €40 to €50 billion (about $55 to $69 billion).[42] That would be far more than the €20 billion ($28 billion) estimated by the office of President Jose Luis Rodriguez Zapatero and would substantially increase Spain's public debt ratio.

The Irish Government has confirmed it is to receive an €85bn ($112bn) loan from the European Union and the International Monetary Fund with Irish banks to receive €35bn of the package. Banks will receive €10bn for immediate recapitalisation and €25bn in contingency funding, while the other €50bn will finance Irish budget deficits.[43]

Interesting, that in Switzerland requirements for its leading banks are almost doubled than the prescribed in Basel III. The need for tighter regulation consider reasonable, since the total assets of the two largest banks – UBS and Credit Suisse - four times higher than GDP.[44]

5. Conclusions

The National Bank of Ukraine as the main regulator of the banking sphere plays a significant role in the procedures and elements of the corporate governance within the commercial banks through introducing the statements with requirements and guidelines for banks. The impact of the NBU on CG was particularly observed during the crisis. There are a number of measures by NBU presented as the anti-crisis ones. However, the effectiveness of all of them is still under discussion and evaluation.

The statement of the NBU № 421 issued in July 2009 contained regulations of the elements of liquidity strengthening. These measures were applied within a certain group of banks, which were out of profit. Hence, the statement failed to have an overall systematic impact on the whole banking system. Considering that the main articles of the statement concerned the issue of bonuses and dividends payment, there is clear evidence of connection between this regulatory act and corporate governance performance in banks. However, even though the NBU cancelled the statement in July, 6 2010 due to the "positive trends observed in the banking system", we also consider certain payment manipulation schemes practiced by some banks as the potential reason for its cancellation.

The NBU statement № 273 approved on July, 9 2010 introduced the new normative of the volume of the regulatory capital for banks. It was observed that 49 banks which didn't meet the requirement of 120 mln UAH[45] belong to the 4th group of the Ukrainian banking system with the lowest performance indicators, meaning that the only chance for them to survive is to merge or be taken over (even with the

[38] http://www.bank.gov.ua/Bank_supervision/index.htm
[39] http://www.bis.org/list/basel3/index.htm
[40] http://www.bundesbank.de/index.en.php
[41] http://www.fxstreet.com/fundamental/analysis-reports/euro-compass/2011/01/25/
[42] http://blogs.forbes.com/afontevecchia/2011/03/10/moodys-downgrades-spains-credit-rating-as-recapitalization-could-cost-e50bn/
[43] http://www.gfsnews.com/article/505/1/
[44] http://www.snb.ch/
[45] 120 mln UAH = 10,8 mln EUR

scenario of the hostile one as the price of the deal might be markedly lowered). That's why the result of this statement can be described as the disciplinary measure for the CG bodies of the successful banks and at the same time a strong push towards the intensification of bank capital concentration. Consequently the question of the NBU motives to implement such approach is arisen, which might be a good issue for further research.

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Appendix 1
Ukrainian banking system profit/loss dynamics

	Profit/Loss		
Name of banks	July 1, 2009	July 1, 2010	January 1, 2011
RAIFFEISEN BANK AVAL	-1 084 986	35 894	745
UKSIBBANK	-830 665	-1 262 329	-3 145 186
ALFA-BANK	-192 818	551	1 012
OTP BANK	-565 334	236 204	609 432
PROMINVESTBANK	-375 211	-454 484	-844 981
NADRA	-1 040 895	4 563	4 740
FORUM	-283 290	-1 478 291	-3 282 345
FIRST BANK UKR.INTERNATIONAL	-604 127	43 021	235 378
FINANSY TA KREDYT	-187 364	-54 301	-188 637
SWEDBANK	-478 942	47 524	86 155
UKRGAZBANK	-76 419	6 187	10 058
UKRPROMBANK	-4 603 184	under liquidation	
KREDITPROMBANK	-166 471	14 943	25 294
ERSTE BANK	-343 168	-143 958	-133 794
UNIKREDYT BANK	-53 511	17 172	40 130
RODOVID BANK	-1 510 894	-3 762 145	-4 264 124
UNIVERSAL BANK	-99 879	-72 727	-593 591
PRAVEKS-BANK	-193 206	-149 951	-188 413
DONGORBANK	-109 309	3 648	5 055
VAB BANK	-74 085	-204 535	-621 347
KREDOBANK	-129 237	-353 224	-391 854
DOCHIRNIY BANK SBERBANKU ROSSII	-249 043	-1 493 622	-1 468 846
IMEKSBANK	-30 164	2 529	27 522
"CREDIT-DNIPRO"	-33 498	2 685	4 567
KYIVSKA RUS	-10 041	563	5 668
SEB BANK	-86 499	-296 107	-259 837
"KIEV"	-1 202 568	-227 782	-220 702
BM BANK	-5 444	-18 008	-14 995
PROCREDIT BANK	-62 725	-12 722	-12 506
EXPOBANK	-7 709	-14 425	-122 856
BTA BANK	-21 974	655	5 888
CREDIT EUROPE BANK	-106 832	14 584	8 237
"EUROPEAN" BANK	-141 411	under liquidation	
UKRINBANK	-11 459	-44 950	857
TAVRIKA	-2 324	3 352	5 203
IPOBANK	-640	under liquidation	
PLATINUM BANK	-3 329	2 495	9 409
BIG ENERGY	-41 806	under liquidation	
BG BANK	-19 807	678	362
EAST-EUROPEAN BANK	-6 181	under liquidation	
CITY-BANK	-27 719	-15 209	-14 525
ZAKHIDINKOMBANK	-81 765	3 407	94
REGIONAL DEVELOPMENT BANK	-38 768	under liquidation	
"LVIV"	-13 789	-7 321	-36 400
SOTSCOMBANK	-5 602	-40 227	-50 452
NATIONAL STANDARD	-227 074	under liquidation	
METABANK	-4 397	569	1 457
"DNISTER"	-288 242	under liquidation	
ARTEM BANK	-7 650	3 583	430
AGRICULTURAL COMMERCIAL BANK	-2 589	under liquidation	
TRANSBANK	-471 782	under liquidation	
"ARMA"	-45 186	under liquidation	
TRUST	-3 432	-1 702	180
CAPITAL BANK	-5 600	31 714	8 853
"SYNTHESIS"	-1 873	-60 520	under liquidation
VOLODYMYRSKIY	-2 376	272	-8 056
"CONTRACT"	-4 784	573	132
ODESSA-BANK	-66 533	under liquidation	
EUROPEAN BANK OF RATIONAL	-740	-3 130	1 129
CREDITWEST BANK	-4 451	33	255
BANK RUSSIAN STANDARD	-11 224	-7 574	252
FINEKSBANK	-13 198	335	1 143
UKRAINIAN BANK OF DEVELOPMENT	-617	1 015	1 607
CREDIT - OPTIMA	-5 664	577	99

Source: worked by the authors, based on the data of The NBU

Appendix 2

The list of Ukrainian banks that had a regulatory capital less than 120 mln UAH, 01.06.2010

№	Name	Regulatory capital
1	PROFIN BANK	119,00
2	AGROCOMBANK	118,30
3	GRANT	117,10
4	CREDITWEST BANK	116,50
5	CONCORD	113,60
6	D-M BANK	112,90
7	MORSKYI	112,90
8	MOTOR BANK	112,40
9	VBR	110,20
10	PORTO_FRANKO	109,90
11	METABANK	109,30
12	INTERNATIONAL INVESTMENT BANK	107,20
13	ERDE BANK	106,00
14	SYNTES	102,70
15	UKRAINIAN CAPITAL	99,70
16	FINROSTBANK	98,70
17	INTERBANK	98,20
18	TERRA BANK	98,00
19	UKR. RDB	97,60
20	UKRKOMUNBANK	96,20
21	LEGBANK	94,10
22	UKOOPSPILKA	92,30
23	TMM-BANK	92,20
24	KOMINVESTBANK	91,80
25	RADABANK	91,20
26	CHORHOM. DRB	90,50
27	COMMERCIAL INDUSTRIAL BANK	90,40
28	PROMENKOMBANK	87,40
29	POLICOMBANK	87,30
30	INDUSTRIAL AND FINANCE BANK	85,70
31	NOVYI	85,50
32	CAPITAL TRUST	85,10
33	EUROBANK	83,60
34	OKSI BANK	82,90
35	CONTRACT	81,80
36	ASVIO BANK	77,20
37	KREDYT-OPTIMA	76,30
38	INVESTBANK	76,20
39	BANK VALEZ	75,80
40	YEVROPROMBANK	75,40
41	BANK ¾	75,20
42	REGION BANK	74,00
43	BANK TRUST	73,00
44	OLYMPIC UKRAINE	69,70
45	LAND CAPITAL	65,50
46	FINEKSBANK	65,20
47	FAMILNYY BANK	63,00
48	STOLYCYA	57,80
49	EASTERN INDUSTRIAL BANK	53,10

Source: Ukrainian Banks' Association

ANALYSIS OF MAIN INSTRUMENTS OF CRISIS REGULATION OF BANKING ACTIVITY DURING THE GLOBAL FINANCIAL CRISIS OF 2008-2009

*Olya Afanasieva**

Abstract

This paper investigates the role and necessity of system of crisis management of banking activity in present-day conditions. Particular attention is paid to the crisis management that is realized on the level of government and central bank. An overview and comparison of major anti-crisis instruments both in Ukraine and foreign countries is given. The research pays special attention to importance of Asset management companies. It is stated that crisis regulation should have preventive character, oriented at working out instruments and realization of such measures that would minimize the negative effect of external and internal surroundings.

Keywords: System of Crisis Management of Banking Activity, Preventive Crisis Management, Asset Management Corporation

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1. Introduction

As the events of last years in world and Ukraine in particular testifies, it appeared that commercial banks and banking systems of many countries were not prepared to crucial crisis influence. It rises the necessity of thorough analysis of peculiarities and instruments of crisis management and regulation of banking activity, and also the necessity to take into account introduced errors in future.

At the time there is no effective working mechanism of crisis management of banking activity oriented towards prognostication, overcoming, limitation of crisis spreading in banking system at all levels (micro and macro). Essential gap in crisis management of banking activity at the time is absence of systemacy and of clear definition of crisis management levels with determining of its types, instruments and specific objectives, that leads to unaccounting of interconnections between elements of the system, to lack of single purpose, and, consequently, to low efficiency of taken measures.

Regarding to this, we consider necessary to propose the concept of multilevel system of crisis management of banking activity. As is known the process of exclusion and overcoming of crisis isn't a short-term temperate phenomenon, but a complex system of crisis management on the level of separate bank and crisis regulation on the level of responsible state bodies. It allows to affirm about presence of multilevel system of crisis management of banking activity.

As efficiency of activity and stability of functioning of banks predetermine the stability of banking system and economy in whole, so crisis measures should be carried out at all levels - micro and macro.

In the article we set a goal to conduct a research in the direction of determining the features of anti-crisis regulation in different countries and in Ukraine in particular during the global financial crisis that began in 2008.

The paper is organized in the following manner. Section 2 provides a review of related literature both on the crisis management theory and the essence of economic crises. Section 3 discusses the place and essence of crisis regulation in the system of crisis management of banking. Section 4 presents a critical analysis of crisis regulation instruments in Ukraine and the world during the global financial crisis of 2008-2009. Section 5 concludes with a summary of the basic results and a discussion of potential application into Ukrainian banking practice.

2. Literature review

Problems of crisis management were studied and analyzed by following scientists: S.Belyaev, V.Koshkin, M.Meskon, M,Albert, E.Korotkov, I.Mitroff, U. Rosenthal, L.Ligonenko, O.Tereshchenko, I.Blank, A.Gryaznova etc. The issues of banking crises were investigated by O.Baranovsky, A.Demirguc-Kunt, E.Detragiache, O.Kruhmal', V.Kovalenko, A.Tavasiev and others.

S.Belyaev, V.Koshkin (1996) – considered that in the system of anti-crisis activity should be distinguished crisis management and crisis regulation: regulation is implemented on the level of state, and

the crisis management is the task of organizations on microlevel. But the authors defined crisis management as the process of that should be realized in conditions of crisis, that doesn't involve preventive anti-crisis measures.

I.Mitroff (1994) stated that the important aim of crisis management is estimation of influence of threats and crises on functioning of entities. That means that according to his point of view crisis management has preventive and reactive character as well. The scientist didn't analyzed instruments of crisis resolution and stabilization after crisis is neutralized.

U. Rosenthal (1991) researched the character and features of crisis as the phenomenon with high level of instability that is mostly crucial. The drawback of his scientific work is that he didn't take into consideration that crisis can be turning point and an opportunity to improve the situation of the entity.

I.Blank (1999) considered that crisis management should be the system of preventive and reactive measures aimed to recover from the recession and should include methods of diagnostics of threat of insolvency, mechanism of financial turnaround etc. But at the same time the researcher treated crisis management as just a part of entity's administration, not as the separate kind of management that have its own instruments, goals and methods of investigation.

A.Demirguc-Kunt, E.Detragiache (1998) stated the macroeconomic and institutional factors of banking crises. The scientists defined the main symptoms of banking systemic crisis.

As it's seen in despite of huge amount of scientific works crisis management theory still have some outstanding questions. Moreover, the problem of crisis management of *banking activity* is rather new, so there are a lot of open issues that need investigation.

3. Place and essence of crisis regulation in the system of crisis management of banking

The necessity of crisis management of banking, including crisis regulation at the level of government and central bank and crisis management at banking institutions ***is determined by the following:***

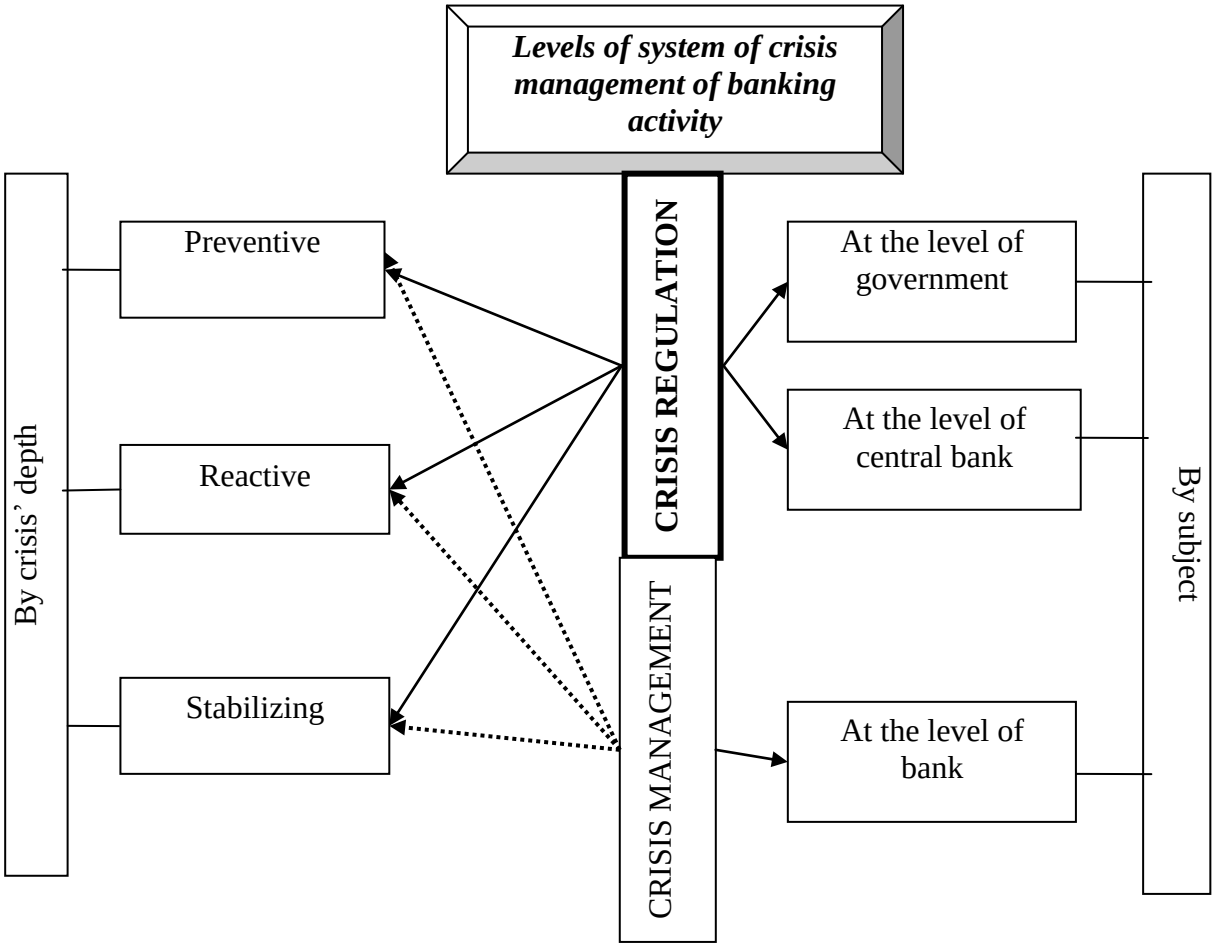
1) supporting of banking system stability on the level of certain banks and banking system in whole;
2) prevention of crisis in the bank that is a serious risk for the bank's competitors, reducing the overall potential of the country's economy;
3) necessity of insecure trends monitoring that may provoke occurrence of crises situations;
4) qualitative prognostication and prevention of banking crises' initiation;
5) development of strategies in case of crisis at the bank and the banking system;
6) timely use of tools of crisis regulation and crisis management, depending on the crisis situation;
7) in case of indications of crisis in the banking system the state has to intervene because the negative impact of the crisis quickly spreads to other areas of economic activity and economies of other countries;
8) containing the crisis at individual bank's level and at the level of the banking system;
9) elimination of external and internal indications of a crisis;
10) avoiding bankruptcy of banking institutions;
11) ensuring the ability of banks to self-support and stability;
12) reducing the negative effects of bankruptcy of banks on the overall state of banking system.

Mentioned reasons that cause the necessity of crisis regulation and crisis management implementation let distinguish three basic tasks that have to be carried out by the system of crisis management of banking activity:

1) crisis prevention;
2) crisis neutralization;
3) overcoming negative consequences of crisis phenomenon and return to pre-crisis parameters of activity.

According to each of defined aims we propose to distinguish preventive, reactive and stabilizing crisis management of banking activity.

Fig. 1. Multilevel system of crisis management of banking activity



As Fig. 1 reflects, multilevel system of crisis management of banking activity can be observed in two sections:

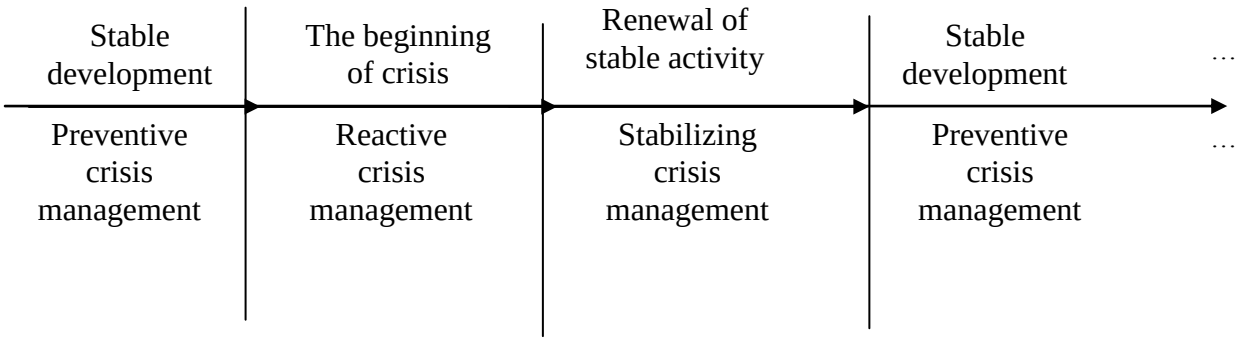
- by subject of management;
- by crisis situation depth in banking system or in certain bank.

Depending on the subject of crisis management of banking activity one can define three levels of this system:

1) crisis regulation at the level of government;
2) crisis regulation at the level of central bank;
3) crisis management at the individual banking institution.

In turn, each of these levels depending on the stage and depth of the crisis may be divided into preventive, reactive and stabilizing crisis management (Fig. 1).

Fig. 2. Sequence of crisis management procedures' implementation according to crisis stage



As Fig. 2 shows, during normal operation of the bank and banking system *preventive crisis management* is implemented. This element of crisis management plays a huge role in preventing the crisis in the bank as well as minimizing the impact of a systemic crisis in case of its occurrence in the banking

system. Preventive crisis management takes place when functioning of the bank is stable, efficient and specific problems or crises are not expected. The tools implemented at this stage of crisis management, namely monitoring, diagnostics of the crisis, establishing an early warning system in banks, provide as early detection of potential threats as possible and implementation of the *reactive* crisis management.

Thus, during the beginning of crisis, its development and fight against it the bank implements *reactive crisis management.* Tools of this kind of management designed to neutralize the crisis, to restrain its dissemination to other banks and the entire banking system.

If reactive crisis management tools had a positive effect and the crisis neutralized, specific measures should be implemented to return the bank to normal state. This task executes *stabilizing crisis management*. Thus, crisis measures in times of crisis are characterized by certain restrictions (time, financial, etc.), respectively, it has negative effects, so-called "side effect". So, following the implementation of reactive crisis management instruments stabilizing crisis management should be carried out, the aim of which is to restore the normal processes of the bank. While stabilizing crisis management is carried out implementation of instruments targeted at neutralization of the crisis stops.

After the resumption of normal activities, commercial bank returns to the permanent concept of preventive crisis management, which involves restoration of monitoring and diagnostics of the crisis.

We should remark that determined elements of crisis management (preventive, reactive and stabilizing) can be realized in the sequence shown in Fig. 2. This sequence of elements of crisis management and regulation, to our opinion, is the most effective because it involves managing all phases of crisis, and also includes measures to prevent crisis and neutralize consequences of reactive crisis management. However, in some cases this elements of crisis management can be implemented independently of each other. For example, if unpredictable macroeconomic and institutional factors led the aggravation of the crisis, reactive crisis management tools should be used immediately in the bank. Such character of the system of crisis management in bank is defined as heterarchial (*Trydid*, *2009*).

4. Analysis of crisis management instruments in Ukraine and the world during the global financial crisis of 2008-2009

Let's make comparative analysis of crisis regulation instruments that were applied in Ukraine and in world during the global financial crisis.

In EU countries (ECB Monthly Bulletin, 2007) among state agencies responsible for implementing measures of banking crisis regulation are central banks, financial supervisory authorities and ministries of finance that carry out statutory powers. If banks, despite implemented preventive measures, faced with problems, public authorities can intervene to restore stability of financial institutions or, if necessary, eliminate it and reduce the adverse effect on the entire banking system.

Table. 1 summarizes the major measures of crisis regulation in banks during the global financial crisis in 2008-2009.

Table 1. Major measures of crisis regulation in banks during the global financial crisis in 2008-2009 in some countries

Anti-crisis measure	*Country of implementation, peculiarities*
Deposit insurance	***Portugal.*** The government allocated $ 20 billion to banks for deposit insurance. ***Germany.*** At the beginning of 2009, the Ministry of Finance has allocated € 1 trillion to domestic banks for insurance of 100% current and deposit accounts of individuals. In total, state insures about 83% of county's deposits. ***UK.*** During global financial crisis of 2008-2009 government implemented deposit insurance at the rate of 250 billion pounds against security of big loans and 282 billion pounds for insurance of nationalized bank «Royal Bank of Scotland». ***Ireland.*** Banks got € 400billion as deposit insurance. Also among developed countries deposit insurance was implemented in ***Australia, Switzerland, China, Korea, USA.***
Crediting of banks that have temporary liquidity problems	***Germany.*** Banks in Germany are entitled to get preferential loans in amount of € 20 billion, giving the Central Bank the right to influence the operational activity of the bank. Generally, stabilization fund aimed at crediting of banks was equal € 400 billion. ***Ukraine.*** Refinancing during the crisis was carried out under limited access to refinance.
Recapitalization of banks, nationalization of insolvent large banks	The amount of funds aims to recapitalize banks in some countries was: - USA: $ 395 billion. - Germany: € 80 billion - UK: 37 billion pounds - China: $ 20 billion. - Ireland: $ 5,5 billion - Portugal: € 4 billion - Austria: $ 15 billion. ***UK.*** Government offers he banks of the first level financial assistance in exchange for which the

	state receives privileged shares or part of the share capital. ***Ukraine.*** Bank recapitalization was carried out selectively: to get money resources for the capital increase can only separate banks - temporarily insolvent but able to maintain efficient banking activity. State support involves entering of the state in the authorized capital of financial institutions
Purchase of non-performing assets of banks	Australia, Canada, USA, Switzerland, Germany, UK, Japan
Reducing the minimum reserve requirement for banks	Latvia, Iceland, Romania
Purchase of defaulted mortgage assets	USA
State insurance of interbank loans	USA, Germany, Great Britain
Reduction of discount rate	***USA*** (up to 0,25%), ***Germany*** (up to 2.25%), ***UK*** (up to 2%), ***China*** (up to 5.3%), ***Ukraine*** (up to 10.25%)
Auctions of currency sale at the preferential rate for borrowers	***Ukraine.*** Currency sale by the reduced rate was carried out for individuals to repay foreign currency loans
Moratorium on deposits withdrawal and crediting in banks	***Ukraine.*** Declaring the moratorium for indefinite period was held at the end of 2008 after the first signs of panic and massive withdrawal of deposits from banks

Let's consider the listed instruments of crisis regulation more detailed.

During the crisis period liquidity management becomes one of the major problems. The purpose of refinancing is to provide banks with liquidity. However, there should be differentiated banks with temporary insolvency due to the crisis and banks that have problems with cash due to the lack of resources and lack of capitalization. Taking that into consideration, refinancing should be carried out for the banks that have sufficient amount of authorized capital. Banks with low level of capitalization must first satisfy legislative requirements of equity capital amount, and only after that they may pretend to receive liquidity from the central bank.

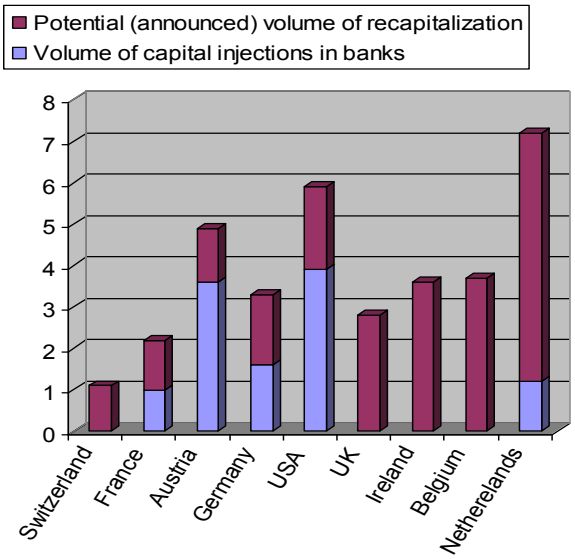
During the global financial crisis in 2008-2009 there was a significant deposit bank run. The low liquidity level is complicated by instability of interest rates and currency. In order to support illiquid banks, foreign central banks have become a source of financial facilities. State support of the banking system not only helps banks to restore financial activity, but also helps to restore the confidence of bank customers, which, in turn, controls the bank runs. The coordination of policy of the state and banks is an important aspect of crisis management of banking activity. This activity stimulates both depositors and investors of banks.

Anti-crisis financial support of banks by government agencies was carried out in various ways, including:

– participation in equity;
– assignation of loans;
– state guarantees.

Fig. 3 shows the government injections in the leading countries in banks in February 2009.

Figue 3. Volumes of recapitalization in banks in certain countries *(Pisani-Ferry J., 2009)*



As it is seen at Fig. 3, during the period of global financial crisis the state capital contribution in banks increased significantly. And governments of some countries (France, United Kingdom, Germany, USA, Netherlands) plan to increase cash inflows. So, among 50 largest banks in the EU and the USA, 15 and 23, respectively, have received cash injections from the government.

In the monetary policy of Ukraine the primary regulative instrument usually was the exchange channel. But the financial crisis of 2008 - 2009 has become the motive of drastically change of methods of domestic monetary policy implementation from monetary policy to the policy of liquidity support of banks by refinancing, - these new tools have become an objective necessity. ***As the foreign practice shows, banking liquidity support during the crisis by force of lending by the central bank is an effective and feasible method.*** Thus, at the end of 2008, 88 banks in Ukraine have been refinanced by the National Bank of Ukraine (NBU) for a total of 36.937 billion UAH. Table 2 shows the major banks that received the largest volumes of refinancing during the crisis 2008.

Table 2. Banks of Ukraine that received the largest volumes of refinancing during December, 2008

№	*Bank*	*Volumes of refinancing, billion UAH*
1.	Nadra	7.100
2.	Prominvestbank	5.850
3.	Oshadbank	4.6
4.	PrivatBank	3.410
5.	Bank Finance and Credit	2.698
6.	Rodovid bank	2.172
7.	Ukrprombank	1.348
8.	Financial Initiative	1.285
9.	Ukrgasbank	1.229
	Total:	36.937

Fig. 4 demonstrates the mechanism of liquidity support that was legislatively established in Ukraine during the global financial crisis of 2008-2009.

As it is seen on Fig. 4, the NBU has allocated a number of refinancing instruments to support liquidity in Ukrainian banks. However, this mechanism is limited for a range of banks due to a number of specified requirements. So, as a result of these restrictions, if banks are trying to receive loans from the central bank, they are forced to reduce their activity in the market. However, according to researchers` judgments (Mishchenko, 2009), it gives a bit subjective nature of cash management in banks, complicating the process.

At the beginning of 2010 to replace the examined above method, there was introduced a new type of refinancing - stimulating loans of central bank. In addition, banks have received an opportunity to get a stabilization loan to restore their activity. Table 3 analyzes the peculiarities of these loans, authorized by the National Bank of Ukraine.

As Table 3 shows not all banks of Ukraine got the access to stimulating loan. Privilege to receive loans had state banks, banks that were nationalized during the period of crisis, banks with regulatory capital of at least 600 mln UAH, and those ones that had no more than 10% of outstanding debt of the total loan portfolio. At the time of the resolution passing, about 20 domestic banks were satisfying the following requirements.

Stimulating and stabilization loans interest rates are quite profitable for the banks: they are more than twice less than similar loans in the market. And in case of stimulating loans banks will have significant revenue owing to relatively low cost of such loans for the bank. However, the NBU has set limits on the total size of the credit cost fir the borrower - it should not exceed the discount rate by more than 8%, including all fees and other payments. In addition, the NBU established limits of volumes and access of financial institutions to refinancing of any kind.

Figure 4. Features of liquidity support by means of refinancing by NBU in accordance with normative legal documents in 2009 (on the basis of NBU statements No 262, No 259)

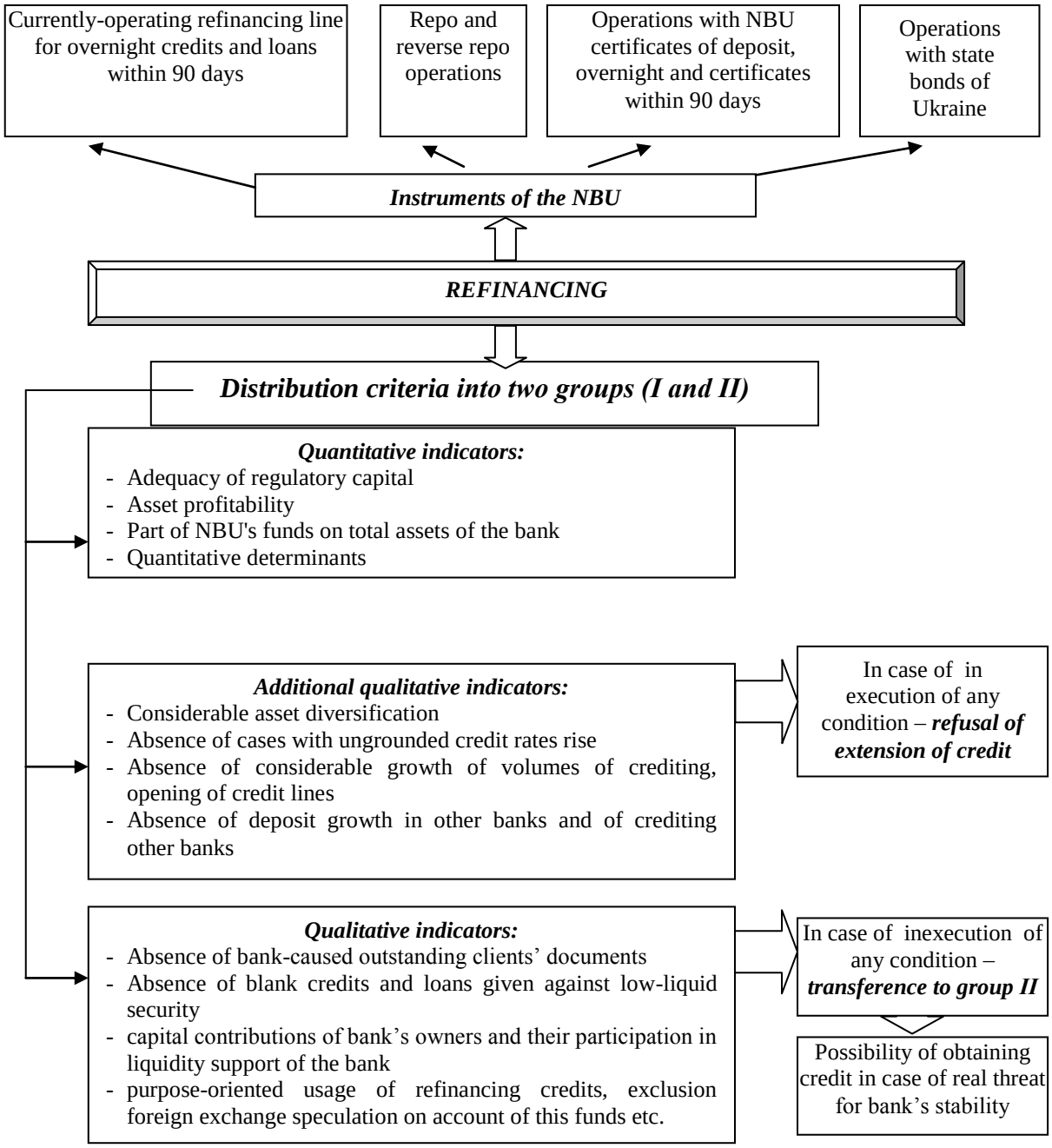


Table 3. Comparative analysis of stabilization and stimulating loans

Characteristics	*Stabilization loan*	*Stimulating loan*
Loan purpose	Given by NBU in case of threat for bank's stability with the aim to support liquidity	Given by NBU to support bank's liquidity with the aim to renew crediting of strategic domestic enterprises that are important for state and economy
Credit rate	Discount rate + 0,5-2 %	Discount rate + 0,5-2 %
Banks that can receive a loan	Banks of all classes	Banks of «A» and «B» category
Term	Till 1 year	Till 5 years
Form of crediting	One time or in form of credit line	One time or in form of credit line
Conditions of crediting	- Execution of the financial turnaround program by bank's shareholders - Absence of cases of pre-term return of bank's liabilities - Absence of bonuses among banking management Providing NBU with data into informational system "List of borrowers"	- Loan can't be directed at refinancing of present bank loans Investment project can be financed by this loan not more than at rate of 50%, in case of submitting the proportions: not less than 20% of owned capital of creditor, not less than 30% of owned capital of the bank

Let's consider the features of the recapitalization of banks as crisis management instrument for banks support. State recapitalization of banks is based on certain conditions. For example, the German government increased financial aid to state bank «KfW» up to 15 billion euros with the requirement to ensure crediting of major corporations to avoid short-term liquidity lack, and to support small regional banks in Germany. So, in many countries, among which China, South Korea, Finland, the government through the recapitalization of state banks stimulates the development of lending of small and medium businesses, as well as long-range economic sectors *(Rudolph , 2010)*.

As noted above, another way of government involvement into the bank capital is ***its full nationalization.*** This instrument of state intervention in banks' activities is the most popular in times of crisis: in 57% of the financial crises that have occurred in recent years, carried out the nationalization of banks.

Recapitalization of problem banks is realized on account of sale of state common stock. For example, the UK government has acquired 70% of «Royal Bank of Scotland» shares and 65% of «Lloyds» shares. To maintain the liquidity banks in many countries issued preference shares for purchase by the state. Such measures enable the bank to free up additional capital to restore its activity.

Table 4 gives the leading foreign banks that have agreed to mobilise capital during the global financial crisis of 2008-2009.

Table 4. The leading foreign banks that received state financial aid by means of share sale

Country	*Banks*
UK	«Abbey», «Barclays», «HBOS», «HSBC», «Lloyds TSB», «Nationwide Building Society», «Royal Bank of Scotland», «Standard Chartered», «Northern Rock», «Bradford & Bingley»
USA	«Bank of America», «CITI Group Inc», «FNMA», «FHLMAC»
Germany	«Hypo Real Estate», «IKB»
Ireland	«Anglo Irish Bank», «Bank of Ireland», «Allied Irish Banks»
Portugal	«Banco Portugues de Negocios»
Austria	«Kommunalkredit Austria»

Part of banks listed in the Table 4 was fully nationalized (e.g. «Northern Rock», «Bradford & Bingley», «Kommunalkredit Austria»). In other banks, state agencies became only one of its shareholders by acquiring a small stake to maintain liquidity.

Certain countries had different ways of implementation of the program of state participation in the bank capital. For example, in the United Kingdom and the Netherlands in recapitalized banks special measures were carried out such as insertion of state representatives into the Board of Directors. In other countries, for example, in the USA, the authorities remain passive investors. That is, there are two ways to solve the problem: punishment of top management for the bank's insolvency, and vice versa, the absence of government interference in the bank's activities.

As for Ukraine, at the beginning of 2009 the Cabinet of Ministers of Ukraine determined mechanism of recapitalization of banks for the amount of 44 billion. To implement this procedure

government of Ukraine signed an agreement with the World Bank for extension of credit. So, the following conditions for that were defined:

1) establishment of the state structure in Ministry of Finance - the Department of recapitalization of banks, whose main functions are elimination of non-performing banking assets, improvement of the procedures of liquidation and sale of banks;
2) delegation of powers of the central bank concerning procedure of banks' liquidation to the Deposit Guarantee Fund;
3) implementation of recapitalization of banks that have effective activity *(Cherny, 2009)*.

For participation in the recapitalization program banks had to submit proposition to Ministry of finance; after its consideration specially appointed auditors and lawyers and Cabinet of Ministers make evaluation of the bank.

Thus, during the first half of 2009 three banks were capitalized by the state, among them – «Ukrgasbank», «Rodovid Bank» and «Kyiv». Ministry of Finance purchased shares of additional issue in exchange for public bonds, and as a result state became the owner of the prevailing share of the equity capital. Repayment of public bonds should be accomplished in 2017-2019 by the income rate equal to 9,5% annual. Table 5 takes a view of the main features of agreements with recapitalized banks.

Table 5. Peculiarities of banks' recapitalization

№	*Bank*	*Part of bank's shares in state property, %*	*Amount of public bonds, billion UAH*	*Bank status by 01.08.2009*
1.	«Rodovid Bank»	99.93	2.8	- Preparation of temporary administration withdrawal
2.	«Ukrgasbank»	81.6	3.1	- Formation of the board, supervisory board in bank - Introduction of changes into the statute - Budget approval for 2010 - Working out the strategy for 2011-2012 - Working out the financial recovery plan
3.	«Kyiv»	99.97	3.56	- Temporary administration withdrawal - Formation of the board - Planning of the crediting resumption

According to Statement of Cabinet of Ministry No 429 *(17.04.2009)*, only system banks - open joint-stock companies can take part in the state program of capitalization (according to the criteria of central bank of Ukraine). Among all Ukrainian only 26 domestic banks meet this criteria.

In general, banks can increase the amount of capital by following ways:

- injections of cash in the equity capital;
- attraction of funds subject to conditions of subordinated debt.

The latter method was the most attractive, especially with the participation of foreign investors, because the following reasons:

1) it has a simpler registration process than the registration of additional issue of shares,

2) does not require conversion into national currency that let to avoid currency risk.

Speaking about the refinancing during the crisis some countries worked out additional refinancing programs. For example, concerning USA let's note the following:

– Term Asset-Based Securities Loan Facility (TALF), according to which banks can get credits under securitized loans;
– Repurchase agreements, the essence of which is to conduct repo of largest banks with the U.S. Federal Reserve System.
– However, these programs didn't have due effect at banks because of lack of financial resources allocated for their implementation.

EU countries decided to insure bank deposits on sum of more than 50 thousand euros. Thus, the absolute guarantee to banks have decided to give the authorities of the following countries: the Netherlands on deposits no less than 100 thousand euros, and Austria - for deposits of individuals. If we compare it with Ukraine, in 2008 an amendment in anti-crisis bill was adopted, according to which the maximum size of insured individual deposits in banks was increased threefold - from 50 thousand to 150 thousand UAH.

The beginning of financial crisis in Ukraine was characterized by considerable flight of deposits from banking accounts. Thus, at the end of 2008 ***NBU adopted the anti-crisis resolution № 413*** *(04.12.2008),* ***which prohibits pre-term notice deposits' withdrawal.*** This restriction was aimed at stabilizing the financial market, protection of banks of Ukraine from significant outflow of liquidity. A moratorium on early termination of deposit contracts was to put into operation in banks, although it had an advisory nature.

Thus, before the global financial crisis most banks have been actively crediting, but recently many banks have ***significant deterioration of asset quality, particularly the growth of non-performing assets***

(NPA). For example, in banks of India, with relative stability during the global financial crisis, the main problem was actually increase of NPA: during the third quarter of 2008 their share in total assets of leading banks in the country increased by 34,5%.

During the global financial crisis, states implement special programs of absolution from non-performing assets of leading banks. For example, according to such program in USA - ***Troubled Assets Relief Programm (TARP)*** – the amount of financial aid was equal to 700 billion dollars.

In case of widespread of solvency deterioration of banks, ***the creation of Asset management companies is becoming widespread in the global banking practice***. As the author in *(Mishchenko, 2009)* points out the primary purpose of these organizations is to purchase of bad loans from banks that became insolvent and to renew their efficient activity by selling the assets at maximum price.

Activity of Asset management companies is based on the need to remove the burden from the banks at the lowest cost of public funds. For this reason, priority is given to loans that became troubled because of macroeconomic banks.

Table 6 shows foreign troubled asset management companies in different countries during banking crises.

Table 6. Asset management companies in different countries

Country	*Asset management company*	*Maximum part of troubled loans during the crisis*
USA	Resolution Trust Corporation (RTC)	6.3
Sweden	Securum	21.3
Czech Republic	The Konsolidacni Banka (KoB)	32.2
China	Great Wall Asset Management, Orient Asset Management, Cinda Asset Management, Huarong Asset Management	42.0
Indonesia	Indonesia Bank Restructuring Agency (IBRA)	48.6
Japan	Resolution and Collection Corporation (RCC)	9.7
Southern Korea	Korea Asset Management Corporation (KAMCO)	15.0
Malaysia	Danaharta	30.1
Thailand	The Asset Management Company (TAMC)	51.6
Taiwan	Financial Restructuring Fund	7.5
Mexico	Banking Fund for the Protection of Savings (FOBAPROA)	60.0

In definite countries (USA, Russia, Germany etc.) the creation of state body oriented at purchase and accumulation of bad assets of banks was planning during the global financial crisis.

Let's consider the basic principles on which the activity of Asset management companies is grounded in foreign countries, which is illustrated in the Table 7.

Table 7. Basic principles of Asset management companies functioning

Principle	*Essence of the principle*
Sale of bank's assets for an adequate market value.	Understating of the price gives up banks incentives to increase the quality of assets and sell them. In turn, excessive cost reduces the probability that the corporation will sell assets at such a high cost
Focusing on maximizing profit	Corporations intend to compensate the cost of assets and minimize the associated losses
The balance between speed and cost of sale of assets	Assets which predicted to increase are sold primarily. Other ones should be prepared for sale in the future
Accordance of corporate structure to purchased assets portfolio structure	Effective organizational structureof the company provides effective asset management

Nowadays Ukraine doesn't have experience in creating banks for bad assets. ***But in October 2009 NBU developed for consideration a plan of sanation bank creation based on bank.*** Bad loans would be transferred in exchange for securities on its balance. Promissory notes, bonds and certificates of special status for 7 - 10 years are considered as securities. The project of this institution ***is based on the Swedish model of bank of problem assets***. In addition, a similar project of creating a fund to purchase of bad loans from Ukrainian banks is considered by International Finance Corporation.

5. Conclusion

In the context of improving of domestic crisis regulation of banking activity we should mention the creation of Asset management companies. Despite large cost and long-term character of this anti-crisis measures, economists mark out some positive sides of assets restructuring through purchase by specially created organizations:

1) providing access for more banks to public funds;
2) the concentration of management on crisis resolution instead of wasting time and resources on managing problem loans;
3) transparency of estimation of existing assets that remain in bank;
4) activization of banks' development and, consequently, stimulation of the country's credit market in general;
5) restoration of effective correlation of performing and non-performing assets in banks;
6) growth of investment attractiveness of banks.

Analysis of international experience of banking crises affirms that the support of some insolvent banks deepens crisis and increases losses in the future, not reaching financial recovery. For example, ***the basic principle of behavioral strategy of the Bank of England*** is that assistance should be provided only when local banking crisis has the risk of spreading to other banks and financial system generally. To our opinion, one should use this principle in the implementation of anti-crisis management and regulation of banking.

To sum up, we should mark that crisis regulation should have preventive character, oriented at working out instruments and realization of such measures that would minimize the negative effect of external and internal surroundings. As economies and banking systems of states on macrolevel are in interaction, the analysis of experience of foreign countries is rather vital, especially for Ukraine. Moreover, high importance have the stabilizing crisis management, oriented at renewal of effective banking activity after banking crisis resolution.

In conclusion, it is necessary to underline that in modern unstable economic conditions, substantial attention should be payed to formation of system of banking crisis management at the macro and the micro level. A framework which defines the limits and conditions of anti-crisis strategies of individual banks is exactly crisis regulation.

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