Journal of
Modern Accounting and Auditing

Volume 9, Number 6, June 2013 (Serial Number 97)

David Publishing Company
www.davidpublishing.com

Publication Information:
Journal of Modern Accounting and Auditing is published monthly in hard copy (ISSN1548-6583) and online (ISSN1935-9683) by David Publishing Company located at 9460 Telstar Ave Suite 5, EL Monte, CA 91731, USA.

Aims and Scope:
Journal of Modern Accounting and Auditing, a monthly professional academic journal, covers all sorts of researches on accounting research, financial theory, capital market, audit theory and practice from experts and scholars all over the world.

Manuscripts and correspondence are invited for publication. You can submit your papers via Web Submission, or E-mail to accountant@davidpublishing.com. Submission guidelines and Web Submission system are available at http://www.davidpublishing.com.

Editorial Office:
9460 Telstar Ave Suite 5, EL Monte, CA 91731
E-mail: accountant@davidpublishing.com, usaaccountant@gmail.com

Abstracted/Indexed in:
Database of EBSCO, Massachusetts, USA
ProQuest Cambridge Scientific Abstracts (CSA)-Natural Sciences
Australian ERA
Universe Digital Library Sdn Bhd (UDLSB), Malaysia
Chinese Database of CEPS, Airiti Inc. & OCLC
Chinese Scientific Journals Database, VIP Corporation, Chongqing, P.R.China
Ulrich's Periodicals Directory
Database of Summon Serials Solutions, USA

Subscription Information:
Price (per year): Print $640; Online $480; Print and Online $800

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9460 Telstar Ave Suite 5, EL Monte, CA 91731, USA
Tel: 1-323-984-7526, 323-410-1082; Fax: 1-323-984-7374, 323-908-0457; E-mail: order@davidpublishing.com

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Volume 9, Number 6, June 2013 (Serial Number 97)

Contents

Accounting & Financial Management

Corporate Governance

Finance & Macro Economy

Journal of Modern Accounting and Auditing, ISSN 1548-6583
June 2013, Vol. 9, No. 6, 729-738

Determining of Employee Frauds in Forensic Accounting: A Research on Forensic Cases in the City of Kars in Turkey

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Discovering and preventing the frauds which affect the business organizations negatively require a greater degree of specialism. Detecting a fraud in the organizations is very hard, because not only such a fraud is exercised by the people who have deep professional knowledge, but they also use some peculiar methods to hide their tricky activities. Therefore, it is obvious that it is necessary to have the fraud examiners and especially fraud auditors who should have deep professional knowledge and experience. The aim of this study is to give some general information about employee fraud, which targets the different functions of the companies, takes many forms, and reaches important levels in recent years, in qualitative point. In this study, firstly, forensic accounting is a highly dynamic area in nowadays which is related to fraud auditing and its profession, and its search area of frauds and employee frauds subjects have been reviewed. Finally, qualitative data were collected about fraud incidents which had occurred and been sent to the court in the province of Kars in Turkey. Actual case analysis method has been used in this study. The obtained data have been analyzed by using Statistical Package for the Social Sciences (SPSS) 17 statistics package program. Results of the study have been discussed and interpreted in details.

Keywords: forensic accounting, M41, fraud, M49, fraud detection, M42, employee frauds

Forensic Accounting and Profession of Forensic Accounting

Forensic accounting is a science which allows obtaining accounting realities through the application of audit method and procedures to generally legal problems in financial characteristics. It is quite different from traditional accounting. Forensic accounting is research of a claim whose evidences are expected to be presented in a judicial process (Grippo & Ted Ibex, 2003). Forensic accounting encompasses the audit process which facilitates researching and understanding of fraud taking place in an enterprise (Silverstone & Sheetz, 2007). Within the broadest sense, it is a field which is a collection of audit and research skills instead of drawing a partial conclusion related to the case which targets at reaching a general conclusion. Besides, because it allows accounting analyses that help solve disagreements emerging in the enterprises, it shows difference from traditional accounting (Owojori & Asaolu, 2009).

In the formation of forensic accounting field, below-mentioned reasons have become effective in general (Bozkurt, 2000):

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(1) As a result of increasing complexities in trade transactions, individuals and institutions have started to apply to courts in an increasing rate;

(2) In the society, relations between individuals and institutions and the state have increasingly started to cause problems;

(3) The frauds that employees commit at enterprises have been increasing gradually, and brought out and preventing of the fraud has been getting harder;

(4) Enterprise failures in increasing numbers and large volumes are being experienced;

(5) Lawyers and courts need more specialist support in the cases they encounter.

Notwithstanding this, the sides that would need forensic accountant can be itemized as follows (Pazarceviren, 2005):

(1) Lawyers;

(2) Police forces;

(3) Insurance companies;

(4) Banks;

(5) Courts;

(6) Business world;

(7) Government representatives and government-linked institutions.

Forensic accountant is the accountant who helps solve court cases with financial elements. He/she can work at trials sometimes as court case support consultant and sometimes as specialist witness (Winch, 2007).

In order to draw a conclusion and calculate the values accurately, the forensic accountants analyze the documents they obtain from this perspective. For the sake of determining transactions involving fraud and suspicion, they review all the financial and non-financial data.

In short, forensic accounting and profession of forensic accounting is a research requiring process while it focuses on legal matters (McKittrick, 2009). With these characteristics, forensic accountants are characterized as both auditors and special researchers (Gray, 2008).

Fraud and Fraud Auditing

Application scope of forensic accounting is divided into three (Bozkurt, 2000).

Court Case Support Consulting

In some of the cases they undertake, lawyers need to get services provided by forensic accountants. In the scope of this profession, practice area of which is very wide; the services they can render to lawyers prior to or during the case can be grouped into two basic functions as bringing forth the necessary data and analyzing the collected data.

Specialist Testimony

In the courts, the judges have been benefiting from specialist witnessing of forensic accountants to carry out the case in a healthy way and to conclude them. Special knowledge, skills, experiences, and educations of forensic accountants play important roles in these cases. When a forensic accountant works as a specialist witnessing, he/she should be careful about being impartial, objectivity, explaining technical issues in a clear and teaching way, and establishing clear communications with the parties.

Fraud Auditing or Researcher Accounting

In today's world, frauds in different fields and shapes can be made by enterprise employees, top managers, and individuals. Some of these frauds can be itemized as the frauds committed by enterprise employees against their enterprises, crimes committed by white-collar employees, financial statement frauds that enterprise top managers make to deceive employees, investment-related frauds, credit card frauds, and computer frauds. Uncovering and preventing these types of frauds has become a job that requires specialism. Therefore, a birth has been given to a new profession type. People who perform this job are called "fraud auditors", "forensic accountants", or "researcher accountants".

With the most general meaning of the word, fraud is a phenomenon which takes place in a social environment and gives way to results that should be taken seriously for individuals, economies, and enterprises (Silverstone & Sheetz, 2007).

Fraud auditing is, however, an evidence gathering assessment processes performed by specialist people in the field to research the determination of performed or potential fraudulent transactions in an enterprise. This task is based on application of appropriate system and processes to find fraud indicators. Even the most comprehensive fraud prevention mechanisms can be eliminated by experienced and skilled defrauders. However, while an effective fraud audit can help the fraud come into view, it has also been playing a deterring role in protecting enterprises, employees, customers, and shareholders (Harvey & Campbell, 2011).

Employee Frauds

Profession-related frauds, the employee frauds that are also called robbery through embezzlement, can generally be defined as an employee's appropriation of enterprise assets or his/her cheating the employer by using these assets in an unlawful way (Bozkurt, 2009).

Fraud cases that the employees get into are important and they have been steadily increasing. Enterprises have been losing an unexpectedly high amount of their assets to their employees through various fraud ways. Besides, these frauds have been giving damage to close circles of enterprises at a micro level and to society and country's economy at a macro level. According to the latest published fraud report of the Association of Certified Fraud Examiners [ACFE] (2012) of the nations, enterprises have been losing approximately 5% of their annual revenues due to employee frauds.

Employee fraud is the most common fraud type for enterprises. It can create very different effects on success of enterprise. Firstly, they can lead to bankruptcy of the enterprises (CPA[1] Australia Ltd., 2011). Additionally, these frauds are a wide spectrum involving all levels of employees in the enterprise (Krishna Moorthy, Seetharaman, Somasundaram, & Gopalan, 2009). Statistical results of some studies conducted in various countries, which are indicators of the damages that the employees give to their enterprises, can be summarized as follows:

(1) According to ACFE fraud report dated 2004 among the fraud types committed, employee frauds compose 92.7%. On average, they have caused a loss of 93,000 USD (ACFE, 2004);

(2) PricewaterhouseCooper (PwC), which is one of the international auditing firms, has prepared an "Economic Crime Research Report" in 2001 comprising of enterprises operating in some European countries. According to this report, some 60% of frauds have been committed by the employees. Embezzlement crime has been the most frequently observed fraud type (PwC, 2001);

[1] Certified Public Accountant.

(3) Similarly, as a result of South Africa fraud research report of Klynved Peat Marwick Goerdeler [KPMG] (1999) which is another international auditing firm, it has been seen that among the fraud sources, the employees have the highest financial loss percentage with 58% rate;

(4) According to the fraud report of ACFE (1996), daily fraud cost per employee has been estimated to be approximately 9 USD.

In addition to statistical information above, according to results reached as a result of analysis of judicial cases obtained within the scope of research conducted in the city of Kars, 68 of 184 fraud crimes are embezzlements which are the most frequent frauds, and this corresponds to approximately 39.6% of the cases. Similarly, 74 of the committed frauds have been made by non-managerial "ordinary" employees.

A Research on Forensic Cases in the City of Kars

Objective of the Research

In a globalized world where competition has increasingly intensified, the frauds that the employees made within the body of enterprises have significantly increased and their damages have reached significant levels. As the corporate scandals (like Enron, Lucent, Xerox, and Imar Bank in Turkey) occurred in the world as well as in Turkey have shown, with the dimensions its damage gave, fraud has become a threat that should be taken seriously by every enterprise and economy.

With the research in question within the scope of this subject matter which has such a great importance, qualitative determination of frauds experienced in the state institutions and private enterprises and which has been transferred to courts in the city of Kars has been intended for. It has been tried to be determined on which types these frauds are intensified, by which level of employees and in which particular sectors they are committed, which gender or age group is more inclined to fraud, and which and how many institutions have been damaged.

Universe of the Research

Research has been conducted in an actual case study way. The main universe of these cases has been constituted by cases which took place between January 2006 and 2011 and which had been submitted to the Kars Courts of Turkish Republic Ministry of Justice. With the analyses made within this main universe, approximately 184 actual case files have been reached and data have been obtained. With these data, such information has been reached as age, profession, gender, the demographic characteristics of the fraudsters as well as the institution they worked at, their position in the institution, the sector, type of fraud, how the fraud took place (individual-organized), how the fraud has been uncovered, the institution that has been damaged, and the amount of loss due to damage. Besides, statistical information required for interpretation of analyses has been obtained from Kars Provincial Directorate of Social Security Institution. Also, through interviews with Kars-Ardahan Region Bar Association, information of lawyers and financial consultants has been gathered.

Method of the Research

Employees can wangle fraud sometimes for their own interests and sometimes for the benefit of the third parties, i.e., their customers. This means that enterprises unconsciously have been losing their significant amount of assets to their employers through various fraud types. According to the fraud report of ACFE (2012), companies have been losing 5% of their annual revenues through fraud, and this rate corresponds to a loss amounting to 3.5 trillion dollars. Likewise, according to the same report, a significant amount of frauds that are uncovered through complaints and warnings are employee frauds, and results show that 90% of these frauds are in the form of embezzlements.

With the study in question, determination of qualitative characteristics of the frauds taking place in state institutions and private enterprises in the city of Kars has been aimed at, obtained data have been analyzed with Statistical Package for the Social Sciences (SPSS) for Windows 17.0 statistics package program, and results have been assessed. In the analysis of the results under the "descriptive statistics" menu, "frequency distribution" has been used. Because the data are qualitative, when the assessment is made, it has been thought that using "non-parametric tests" in assessments would be more meaningful.

Constraints of the Research

The court case files were being analyzed for the research between January 2006 and March 2011. The reason for this is that Kars Court of Justice had changed the database system it used in its computers in 2006. Due to this change of system, details of pre-2006 court case information could not be reached vigorously.

Findings of the Research and Results

According to the results obtained by frequency analysis in Table 1, it is seen that male employees are more inclined to fraud compared with female employees. According to statistical data obtained from Kars Provincial Directorate of Social Security Institution, there are a total of 9,742 employees working at state institutions and private enterprises in the city of Kars. 15% of them, i.e., 1,511, are women, 85% of them, i.e., 8,231, are men. Therefore, the opinion is reached that this situation stems from the fact that there are more men in business life than women.

Table 1

Gender Distribution of Fraud-Making Employees

Gender	Frequency	Percentage (%)
Male	170	92.4
Female	14	7.6
Total	184	100.0

Table 2

Age Distribution of Fraud-Making Employees

Age	Frequency	Percentage (%)
Between 0-20	1	0.6
Between 21-40	48	26.1
Between 41-60	111	60.3
61 and over	24	13.0
Total	184	100.0

When the fractional values in the age distribution of fraud-making employees in Table 2 are taken into account, it is seen that fraud-making employees are mostly in the 41-60 age group, i.e., middle age (60.3%). It can be said that because of such reasons as employees in this age group have reached upper management levels in their enterprises, they have trusted positions, they are not very much controlled, they know the internal control weaknesses of the enterprise, and their possibility of being in fraud is higher. Besides, the thought that they do not have anything to lose or they have not received what they have expected from the enterprise can increase their fraud-making tendencies.

Table 3

Profession Distribution of Fraud-Making Employees

Profession distribution	Frequency	Percentage (%)
Village headman/mukhtar	37	20.1
Postman	6	3.3
Banker	4	2.2
Lawyer	4	2.2
Public notary	2	1.1
Military officer	5	2.7
Business manager	17	9.2
School headmaster	3	1.6
Veterinary	2	1.1
Officer	56	30.4
Members of village council of elders	9	4.9
Enterprise employees	13	7.1
Judge	2	1.1
Police	2	1.1
Doctor	12	6.5
Employees in cooperatives	10	5.4
Total	184	100.0

In Table 3, as a result of the frequency analysis made, the profession distribution of fraud-making employees is presented. As can be seen in Table 3, employees from every profession group have the probability of making fraud. When the fractional values are taken into account, it is observed that mostly, the officers in state institutions have been making fraud, followed by village headman/mukhtars. Status of these employees in the enterprise, their relatively easier access to some assets compared with other employees, their having trusted status, absence of written job descriptions for them, lack of care for segregation of duties principle in many of the institutions, and not forming in-enterprise ethic rules have been giving way to these results.

Table 4

Sector Distribution of Fraud-Making Employees

Sector distribution	Frequency	Percentage (%)
Public	146	79.3
Private	38	20.7
Total	184	100.0

While the number of employees working at private enterprises in Kars is 8,897, the number of employees working at state institutions is 845. Despite the fact that approximately 92% of employees are private sector employees and only 8% are public sector employees as can be seen from Table 4, it has been found that fraud is more common in public institutions. One reason for this is that despite that many high-volume frauds have been taking place in private sector, many of them fade away without being uncovered or they result in closure of the enterprise. Notwithstanding this, enterprises can choose to close the case by firing the employee or solve it within the enterprise without submitting the case to the courts. However, the frauds made in state institutions absolutely get uncovered by complaints or warnings or by means of audits and they are submitted to the courts. Because detecting the fraud and reflecting the result to the court are mandatory in state institutions, the results have turned out to be in this way.

Table 5

Fraud-Making Employees and Their Positions in Enterprise

Position	Frequency	Percentage (%)
Ordinary employee/non-managerial	74	40.2
Manager	73	39.7
Ordinary employee and manager	37	20.1
Total	184	100.0

In the enterprises, employees at all levels can make fraud. When the fractional values in Table 5 are taken into account, it is seen that fraud-making frequency of ordinary employees is higher. They are followed by frauds of managers. Notwithstanding this, as can be seen from Table 5, frauds can be made by ordinary employees among themselves or in ordinary employee-manager cooperation. Ordinary employee-manager cooperation is quite risky. Because uncovering these types of fraud is quite difficult, they also require greater efforts.

Table 6

Distribution With Respect to Way of Making Fraud

Way of making fraud	Frequency	Percentage (%)
Individual	84	45.7
Organized	100	54.3
Total	184	100.0

With respect to way of making fraud, the frauds have been analyzed by being divided into two groups as individual and organized. As can be seen from Table 6, frauds have been mostly realized as organized. In the organized frauds are the frauds that have been made with the ordinary employee-manager collaboration as well as the ones realized together by third-party persons and enterprise employees. Organized crimes can be preferred by the employers because of the crimes that can be more easily realized in collaboration, and the reduction of punishment can be possible by sharing.

Table 7

Fraud Type Distribution

Fraud type	Frequency	Percentage (%)
Embezzlement/misappropriation	68	36.9
Corruption	7	3.8
Forgery of documents	41	22.2
Neglect of duty	1	0.6
Misconduct	11	6.0
Fakery	56	30.5
Total	184	100.0

In Table 7, when the values obtained as a result of frequency analysis made are taken into account, it is seen that the most frequently committed crime is embezzlement. While 36.9% of 184 cases are constituted by embezzlement crime, it is being followed by fakery with 30.5% and by forgery of documents with 22.3%. The situation that embezzlement crime is the most frequently encountered crime stems from the fact that the majority of employees are officers in state institutions. The embezzlement crime has been dealt with by the

202nd article of Turkish Criminal Code, which reads[2]:

> The civil servant who embezzle money, or money equivalent document or notes or other goods, which have been entrusted to him due to his job or, which are under his protection, supervision, or responsibility, is given penal servitude from six years to twelve years and punishment of fine up to one-fold of the loss that took place.

The embezzlement, corruption, and bribe crimes which have been dealt with by the 202nd article of Turkish Criminal Code are the crimes that can only be committed by civil servants/officers, and this situation has been forming a basis for the results to turn out to be in this way.

Table 8

Distribution of Frauds With Respect to Their Uncovering Methods

Uncovering method of fraud	Frequency	Percentage (%)
Denouncement	164	89.1
Audit	19	10.3
Police	1	0.6
Total	184	100.0

Uncovering the frauds has generally been realized in three ways as denouncement, audit, and police. As can be seen in Table 8, according to the results of the frequency analysis made, determination of the frauds has been made heavily at the rate of 89.1% by the assessment of incoming denouncements and complaints. Among the people who make these denouncements and complaints are enterprise employees as well as the third-party persons from outside of the enterprise.

Table 9

Distribution With Respect to Institutions' Incurring Losses

Institution	Frequency	Percentage (%)
PTT—Post Office	23	12.5
Tedas—Electricity Board	3	1.6
Municipalities	6	3.2
District Governorship	43	23.4
Provincial Directorate for National Education	8	4.3
Provincial Directorate of Agriculture	10	5.4
Provincial Revenue Directorate	2	1.1
Provincial Directorate of Animal Health	1	0.6
Private Enterprises	29	15.8
Regional Bar	3	1.6
Court of Justice	6	3.2
Provincial Directorate of Monopolies	1	0.6
State Hospital	18	9.8
Provincial Civil Registry	1	0.6
Office of Governor	6	3.2
Provincial Directorate of Agricultural Credit Cooperatives	16	8.7
Provincial Directorate of Security	2	1.1
Provincial Gendarmerie Command	5	2.7
Provincial Directorate of Forestry	1	0.6
Total	184	100.0

[2] Retrieved from www.hukukcu.com/bilimsel/kitaplar/zimmet/irtikap.htm.

As can be seen from Table 9, among the loss-incurring institutions due to fraud, when the fractional values reached as a result of the frequency analysis are taken into account, the first place is occupied by district governorship with 23.4 %, followed by private enterprises with 15.8% and PTT with 12.5%. Because the first ranks of the fraud makers are filled by civil servants working in institutions linked to district governorship, this institution has suffered the greatest loss. District governorship institutions are followed by private enterprises. Such reasons as lack of written job descriptions in institutions and enterprises, not sticking to the rule of segregation of duties principle, and not forming ethical rules, have contributed to the increase of frauds in these institutions.

Table 10
Distribution of Fraud With Respect to Years

Year	Frequency	Percentage (%)
2011	4	2.1
2010	29	15.8
2009	51	27.7
2008	36	19.6
2007	26	14.1
2006	38	20.7
Total	184	100.0

As can be seen from the results of the frequency analysis made in Table 10, it is observed that frauds have concentrated more on year 2009 with 27.7%.

Conclusions

The act of fraud is a matter which can be made by any employee working at the enterprise in one way or another and which should be taken seriously. Inability to prevent these frauds has negatively affected the partners, creditors, and people who are considered to be partners with the enterprise and the state as well. At this point, the accountants who respond to emerging needs and deal not only with numbers but also go beyond the numbers have also changed the perspective of the society regarding the profession of accounting. In bringing down the fraud rates to the minimum and preventing these frauds, forensic accountants become influential. There are internal auditors and independent auditor professions which are close to this relatively new concept in Turkey. Therefore, primarily raising people who are well equipped with forensic accounting field is needed. In addition to this, lack of regulations regarding fraud audit and fraud auditing in Turkey is a negative aspect for the enterprises. Together with forensic accounting, development of this profession in Turkey should be supported.

As can be seen from the results emerging within the scope of research conducted, fraud has been causing great damages to enterprises, societies, economies, and states, and it has been preventing effective and efficient use of resources. Therefore, by using the rapidly advancing technologies, an information network should be established among the countries about the fraud. Although totally eliminating the frauds is not possible, everyone should help each other in preventing, minimizing, uncovering, and researching the frauds.

From the data reached in the research, it has been seen that in the city of Kars, frauds that take place have been realized more in the public sector by mid-aged male employees, mostly in the form of embezzlement and in an organized way. The institutions that most suffered from these frauds have been district governorships.

Notwithstanding this, it has been concluded that frauds are uncovered to a great extent by denouncements and complaints. When these results are taken into consideration, it can be suggested that enterprises and institutions should pay attention particularly to mid-aged employees, and instead of placing excessive confidence on them, these institutions should both have confidence in them and keep them under control. It can also be suggested that institutions and enterprises should form ethical rules, observe if these rules are adhered to, and stick to segregation of duties principle, besides, they should prevent collection of authorities by a single person, establish written job descriptions within the organization, and comply with them.

In addition to all these, with the public financial management and control law numbered 5018 establishing an effective internal control system at state institutions and by doing so, the establishment of a public financial management system which is in accordance with contemporary developments is facilitated. Consequently, existence of a control mechanism in the institutions has been made mandatory. This situation will facilitate minimization of fraud cases as much as possible and help institutions in their struggle against the fraud.

The probability of uncovering and preventing the frauds has been decreasing in parallel to an increasing number of people. Consequently, an already complex structure of frauds when coupled with the cases where many people cooperate and act together can become more complex. In such cases, through researching some fraud indicators very carefully, fraud case can be uncovered. In this context, it can be said that due care should be paid to the audit works particularly in public sector and assistance should be received from the specialist people in the field.

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Journal of Modern Accounting and Auditing, ISSN 1548-6583
June 2013, Vol. 9, No. 6, 739-746

Exploring Public Finance Management Reform and Building up Model of General State Accounting (GSA): The Case of Vietnam*

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There is no doubt that public finance and accounting have been playing a pivotal role in supporting the government's aspirations in the development in any countries. Through the receipt of funds from the state budget, the organizations in the public sector use country's resources towards the implementation of objectives as well as social policies set by national government. Therefore, most countries will aim to gradually improve the management of public finance, but control of public finance has faced challenges because of the existing limitations. As a result, the public finance management needs to be reformed. In Vietnam, this process has been performed in recent years. To enhance the effectiveness of improvement, public finance has to combine with the transformation of public sector accounting. In fact, there are a lot of researches in public sector accounting together with financial management. However, in the world, from the past to present, very little research has been conducted to examine the change in management to the public finance and relationship to public accounting, especially to the model of general accounting. Because of the significance of above matters, the main purposes of this paper are to identify the role of public finance and the process of reforming it and to build up the new model in Vietnam, called as General State Accounting (GSA) which is applied for Vietnamese government in the near future. By using the mixed method for research, the author will analyze the figures of last budget data, administer the described statistics, and collect information about the budget from Vietnamese experts.

Keywords: public finance, public sector accounting, general state accounting (GSA), public sector reform

Introduction

There are many fields in the society which received interests from the people and government in many countries, such as education, agriculture, transportation, tourism, health, communication, etc.. In those areas, finance always plays a vital role because of the importance in the economic development. Indeed, Pat (2004)

* **Acknowledgements:** This research project would not have been possible without the support of many people. The author wishes to express the sincere gratitude to his supervisor, associate professor, Dr. Mai Minh and to Vo Nhi who was abundantly helpful and offered invaluable assistance, support, and guidance. This study would not have been successful without these professors for their knowledge and assistance. Deepest gratitude also goes to the members of the supervisory committee. The author would also like to express sincere thanks to the university and faculty for providing the spirit means and laboratory facilities. The author wishes to express deepest love and gratitude to his beloved families for their understanding and endless love through the duration of the studies. This paper was presented at the 2nd International Conference on Accounting, Business, and Economics (ICABEC 2012).

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demonstrated that public finance is an academic category associated with the activities of state cash receipts and expenditures. It has reflected the system of economic relations with the form of value in the process of formation and use of state monetary funds for realizing the inherent function of the state to society for non-profit purposes.

According to David (2011), the state budget comprises all revenues and expenditures of the state which have been decided by the competent state agencies and implemented within one year in order to ensure the performance of the functions and tasks of the state. From that, the content of public finance includes the state budget from central to local, state reserves, state credit, state bank, finance of state administration of state property, etc.. Among the abovementioned entities, the state budget is considered as the most important part dominating the other elements. The recognition in fully and systematic views is the pressing needs in the research, learning, and practical activities for every staff in all sectors at all levels, notably in the period of pushing administrative reform in the country today.

On the other hand, administrative reform is a process of modifications and improvements that are basic, nature with the operation system in the state administration. Depending on the specific conditions of each country in each period, contents of reform have different levels and types. According to the relationships in the state budget, Stephan and Timo (2011) revealed that the administrative reform is unable to separate with the reform in financial system. The public finance is a term which is related with government activities. It is not only the resource of state for implementing its functions, but also the tool for performing the public services, governing, and regulating the actions in any nations. In the process of renewing and reforming the national administration, national government has strongly believed that the innovation in public financial management is one of the most important works that have been firstly carried out in a lot of official tasks, especially the Vietnamese Communist Party and the state. Besides that, people have understood that accounting is a substantial matter in the change of financial system, also known as public accounting. With the abovementioned requirements, this paper will provide a general picture of public finance in the world and also in Vietnam. From that, the processes of reformation financial system in Vietnam will be shown, and this is a basic content for building up a new model of state accounting in Vietnam.

Literature Review

Definition

Financial management is a management science which explores and researches the financial relationships arising in the process of production and sales in a business or a certain organization (Campos & Sanjay, 1996). This means that management in finance is a control of capital (including cash, capital, property, relations arising as accounts receivable or accounts payable) for maximizing the intrinsic value of an organization or a business. Thus, financial management in the public sector will follow those fundamental intentions and will focus on the public resources in the society of the world and related closely for using goods or services (Michael, 2011).

The management in public finance is understood as a process undertaken to provide ways to use public resources efficiently and accountability as needed and help maintain the financial discipline of a country (International Federation of Accountants [IFAC], 2008). The financial discipline is the way of controlling the budget by setting the ceiling on government expenditure. It has put the control requirements in terms of overall spending. If there is no discipline, the effectiveness and implementation of policy priorities and programs will not be achieved.

Financial management in the public sector is defined as including the overall decisions and other activities related to the governance processes given by leaders in the financial unit that affect the control and maximize the value of financial resources limited to achieving the overall outputs as required.

Public financial management is supposed as a whole to have included all components in the process of a national budget. They consist of two dimensions which are the down and up lines. The down direction has strategic planning, medium-term expenditure, and the annual budget, while the up direction has revenue management, purchasing goods, control, accounting, reporting, monitoring, evaluation, and auditing. The author has believed that the system will provide high integrated control of budget. It will provide a clear explanation about the efficiency of using public funds whether government policies have met the objectives, in case that public finance system is strong and transparent.

The World Bank (2008) showed that public finance management in the country is composed of various components related to the budgeting, accounting, internal control, cash flow budgets, and preparation of corporate financial statements and audit reports for public organizations which received, beneficed, and used the funds from the budget.

From the above concepts of public finance and public financial management, it is able to know that the finance in public sector is a fund of the state that is used for performing their functions. Public finances are distinguished from finance in private sector and personal finance in the two following ways: (1) The aim of public finance is to maintain the operation of the state apparatus to undertake the functions of effective state and society. Being different from private financial system that operates for profit purpose and for satisfying personal needs, the objective of public finance, on the other hand, is to ensure the firm survival of the country from the political aspects, economic development, and to improve the social welfare benefits for its citizens; and (2) It is done primarily through the mechanism of state power which is not a mechanism upon agreement. The decisions on tax revenue or budget allocations are made in the form of a decision of the competent state.

The Model and Characteristics of Public Financial Management

Until the present time in the world, there is no official concept about the public financial management. According to the general convergence of perceptions, public finance is understood as a set of policies and activities to ensure an effective use of limited resources within a country. It means that the financial system in public has to ensure that public funds are used for proper purposes, provide information for managers to make decisions and to evaluate the effectiveness of government policies, and make the stability in the socioeconomic development.

Therefore, the basic characteristics of public financial management are: (1) collect a full set of resources in the economy by effective and efficient ways and minimize adverse effects on economic activities; (2) allocate national resources in an appropriate order of priority of the government; and (3) mobilize the usage of country’s resources as effective ways to ensure for delivery public services to citizens, and government programs will be conducted based on the cost-benefit principles.

In general viewpoints, public financial management is a system related to financial aspects of the use of services, public goods, but these things are driven and controlled by the previous objectives of the public sector. A cycle of the basic model of public finance management will consist of four components which will be interactive, with close relationships and operate under a unified order to make the country achieve sustainability (see Figure 1).

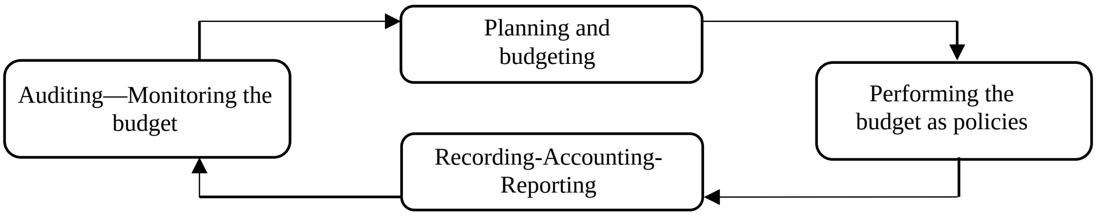

Figure 1. The processes of public financial management cycle.

The Process of Vietnamese Public Financial Management Reform

Public finance and public financial management are relatively new problems of both cognitive theory and practical activities in Vietnam (Can, 2008). Public financial reform is one of the main contents of the reforming program for the state administration in this country. In past years, major changes in the financial management policies have contributed to the general objectives of the administrative reform and the goal of socioeconomic development in each period. However, the implementation of public financial reform in each state's administrative agencies and public service units from the provinces to grassroots still has many inadequacies, e.g., not fully express the nature of the problem (Allen, 2007). Full and systematic awareness for the management of public finances in the national scope is an urgent requirement in the researches, studies, and practical actions for all levels, the industry, especially in the period of administrative reform in Vietnam today. This part will present the situation of Vietnamese state budget in the past years and some limitations.

Current Status of the State Budget and Public Expenditure in Vietnam

Indeed, the state budget comprises all revenues and expenditures of the state which have been decided by the competent state agencies and implemented within one year in order to ensure the performance of the functions and tasks of the state.

In Vietnam, the state budget revenues include revenues from taxes, charges, and fees, revenues from economic activities of the state, contributions by organizations and individuals, aids, and other revenues as provided for by law. Furthermore, the state budget expenditures include spending on socioeconomic development, on ensuring national defense, security, and operations of the state apparatus, and on aids and other spending as stipulated by law.

About the revenue of budget, the state budget comprises the central budget and the local budgets. The local budgets comprise the budgets of administrative units of various levels, including the People's Councils and the People's Committees. With the above structures, based on the figures of eight consecutive years, it is proved that Vietnam has achieved some significant successes in collection of national income (see Table 1).

Table 1

The Amount of Budget Revenues for the Period of 2002-2009 (Unit: Billion Dongs)

Item	2002	2003	2004	2005	2006	2007	2008	2009
Total revenue:	123,860	177,409	224,776	283,847	350,842	431,057	548,529	629,187
Domestic revenue	61,375	78,685	104,577	119,826	145,404	182,993	240,076	236,435
Crude oil revenue	26,510	36,773	48,562	66,558	83,346	78,634	89,603	61,137
Ex-import revenue	31,571	33,845	34,913	38,114	42,825	60,272	91,457	105,629
Non-refundable aid	2,250	2,969	2,877	3,789	7,897	6,012	9,413	7,908
Others	2,154	25,137	33,847	55,560	71,370	103,146	117,980	218,078

Note. Source: Vietnamese General Statistics Office (2012).

Table 1 shows that revenues are increasing over the years. Specifically, Table 1 presents four major types of revenue in the total revenue of the country, of which domestic revenue over the years accounted for almost 50% of annual revenue.

Moreover, budget expenditure is also a significant factor in the nation; state budget is placed under the unified management on the principle of democratic centralism, publicity, transparency, management assignment and decentralization, and association of powers with responsibilities. In the financial system, the allocation of public spending for the sector, for the field, and for each area is considered as a primary key to evaluate the effectiveness of the national system. It will be indicated by the ratio of apportionment of income in Vietnam through regulations on the rate for the central state budget and local budgets.

According to the law, the local budgets shall be assigned revenue sources to ensure their initiatives in performing the assigned tasks; increase resources for the commune budget. The People's Councils of the provinces and centrally-run cities (referred collectively to as the provincial-level) shall decide on the decentralization of revenue sources and spending tasks among the budgets of various local administration levels in accordance with the decentralization of socioeconomic, defense, and security management and the managerial skills of each level in their respective localities. With these basic principles, the government has recognized in the cost structure of each section of the country for eight consecutive years, which is presented in details in Table 2.

Table 2

The Amount of Budget Expenditure for the Period of 2002-2009

Item	2002	2003	2004	2005	2006	2007	2008	2009
Total expenditure:	148,208	197,573	248,615	313,479	385,666	469,606	590,714	715,216
Development and investment	45,218	59,629	66,115	79,199	88,341	104,302	119,462	181,363
Ordinary expenditure	78,039	95,608	107,979	132,327	161,852	204,746	252,375	303,371
Debt and aid	12,382	25,428	34,243	40,402	48,192	57,711	58,390	74,328
Additional funds	535	111	78	69	135	192	159	247
Others	12,034	16,797	40,200	61,482	87,146	102,655	160,328	155,907

Note. Source: General Statistics Office (2012).

With the shown data, in each year, we can see that the government paid the public expenditure more than the national income. It will make the budget deficit phenomenon. With the proportion of revenue and expenditure for that period, this is an evidence of the instability in the financial system of the country. Vietnam has to take measures to control these factors so that it is really a tool to promote the overall growth of the economy.

Limitations in State Budget Accounting in Vietnam

Pham (2012) indicated that if considered from the perspective of the accounting system for ensuring the provision of information in the form of the state accounting regime, the current model also has some limitations:

(1) The system has not formed the consistent entity. Scope and objects of state accounting are incomplete; methods and accounting principles do not fully comply with international practice, therefore, change is often happened; not stable between the periods; no consistency; coupling between the state budget and State Treasury accounting as well as with the operations of budget revenues, financial funds;

(2) The accounting data in the unit are not synchronized, and organization of accounting budget is not consistent in its scope. As a result, the content and method data about state budget revenues among the State Treasury, financial agencies, and agencies have been obtained without unity, making it difficult for the synthesis and analysis of data for the management and administration of the state budget;

(3) State Treasury has not used the accounting information system with integrated and completed components for recognition items into their system, even though the reform has focused on public finances, especially finance and budget, the implementation of the reform process has been slow and not in sync with the advanced management mechanism in accordance with the general reform objectives;

(4) The enactment of a number of mechanisms and policies in the financial and budgetary area is not timely, comprehensive, integrated, and consistent with the market economy. Law on the state budget, despite contributing to improving the efficiency of financial management and budget, is still inadequate with content of utilizing budget funds as particular activities of government;

(5) The organization that made a number of mechanisms and policies did not really give full play to the function, the role of the State Treasury in the field of public finance management. Capabilities and qualifications on the part of officials in the State Treasury are also limited by knowledge, thinking, and old working style; not keep up with the demand management innovation and modernization of the State Treasury activities.

Therefore, Vietnamese government has to build up a new model for decreasing the abovementioned limitations and developing the economy in Vietnam for next years for making sure that all properties invested or procured with the state budget sources and other properties of the state must be strictly managed according to the prescribed regimes. When fully doing those procedures, the state budget accounting and settlement will be uniformly carried out according to the state's accounting regimes and the state budget contents.

The Model of General State Accounting (GSA) in Vietnam

Model's Objectives and Principles

The Vietnamese State Treasury was established in 1990 directly under the management of the Ministry of Finance. Over the past 20 years, the treasury has played an important role in running budget and financial funds as well as in mobilizing public capital for improvement, investment, and development.

With adapting the international public sector accounting standards, the government should build up the new model for diminishing the existences and making the perfect operations of Treasury in Vietnam. Developing and implementing the model of general accountants for performing accounting functions of the State Treasury should be ensured by two general objectives:

(1) The system of budget accounting must be constructed with uniform application of modern technology, recording as international accounting, ensuring the regulatory requirements and financial budget; recognition, synthesis, and presentation of the financial information system and national accounting; full reflection about the state accounting objects, etc., to the government reports and financial statements;

(2) By the year of 2020, the State Treasury will implement the state accounting with following functions: collection, classification, consolidation, supply, and presentation of financial information, accounting of all units of the state accounting system. This is the agency which is responsible for publishing and providing financial data; save the database and keep it in security mode.

With the abovementioned objectives, the new model has been oriented to the principles:

(1) Ensuring the organization of accounting information applied to the units belonged to the State Treasury, collection agencies (such as tax, finance, or customs), business administrative units, the business units, and investment units;

(2) Depending on the specific conditions, model can be studied to expand to other subjects, such as accounting information provided by businesses, non-public entities, and the information about the state financial resources. Based on this information, government will focus on building solutions related to the integration of information into the same system, making sure to provide information upon requirements.

Some Orientations Related With the Model

For doing the task of building up a new model in Vietnam, the government has a lot of works for conducts and preparation. The GSA has some contents as follows:

(1) Constructing the GSA model on the basis of uniform, centralized data into the state units; uniform accounting charts and accounting methods in accordance with international practices;

(2) Building and application of accounting regulations as international rules and guidance to full accrual accounting for the state accounting objects;

(3) Ensuring to fully monitor accounting subjects: data about collection and expenditures of the state budget; existing situation and the movement of assets, property, funds, state funds, financial funds, business administrative units, and other units; debt situation of the governmental and local authorities;

(4) Establishing and presenting its national balance sheet and financial statements, other accounting that met the requirements, in line with international practices;

(5) Constructing management accounting information system to cater for requirements of management, forecasted analysis in the calculation of effective revenues and expenditures in the state budget. Government has required the allocation of state budget for improving the efficient usage of all financial resources of the country.

Together with above matters, the GSA model is also controlled by some supported resolutions as details:

(1) About the technical tools: deployment and operation of integrated accounting information systems which based on information technology application for making sure to recognize and provide financial information, state accounting timely and completely as request management. When performing those processes, the security and safety for accounting data sheet have to be ensured;

(2) About the associations: arranging accounting bodies or units in accordance with the organizational structure; administrative and financial management mechanism on the basis of clearly defined budget functions, tasks of state accounting units, between the State Treasury with ministries, branches and localities in the collection, recording, synthesizing, and presenting the financial and accounting information;

(3) About the reports: the information from model’s reports should be determined based on the demand of management in line with global practices. Defining obviously the objectives as well as the output of the reported information would be essential elements for designing the processes and accounting business processes in terms of information technology application on using this model in Vietnam.

Besides, it can be clearly believed that the public financial reform, state administrative reform, and budget accounting have close relationships with each other. The changes of the part are always accompanied by any change of other parts. Therefore, financial reform must be placed in the overall relationship of the reform program in state administration and must meet the requirements of the administrative reform and support for this process. Accordingly, financial reform must meet the following requirements:

(1) Facilitating centralized state financial resources to tackle important tasks, suitable with true function of

the state; using national resources as the level of priority for those programs and need to consist with public policies;

(2) Improving the autonomy, authority, and responsibilities of the units in the management and use of budget and with their financial problems;

(3) Enhancing the efficient use of state resources, including performance management, effective use of the state budget at the macro level, and efficient use of funds in the budget units' directly funded books;

(4) Aim of the state administration to reform is to improve the effectiveness and efficiency of the state apparatus, improving the quality of public services provided.

Conclusion and Recommendations

There are many plans for the deployment of units to provide access to information systems, but we need to evaluate the practical conditions of Vietnam to the selection of suitable, feasible, effective, and guaranteed approaches to provide output information to meet regulatory requirements. Indeed, the state budget fund consists of all amounts of money of the nation, containing borrowed money, which have been credited on the accounts of the state budget at all levels. The state budget fund is managed at the State Treasury. All the budget collections must be remitted directly into the state treasuries. For special cases, the collecting agencies are allowed to organize the direct collection, but must remit them in full and on time into the state treasuries according to the regulations of financial minister. The state treasuries shall organize the accounting of the budget; periodically report on the implementation of the budget revenue and expenditure estimates to the finance agencies of the same level and the concerned state agencies. The settlement figures must be compared and certified by the state treasuries where transactions are conducted. With the above function, state accounting plays a pivotal role in Vietnam of controlling the public money when using public goods, services, or projects. For conducting these tasks, this paper has provided a general picture of the public finance in the world and Vietnam in detail. From the current status of budgeting and the trend of integrated global economics, the author has established the new model that based on the international public sector accounting standards in Vietnam in near future. Future studies can be conducted into detail of each solution or empirical investigations in Vietnamese provinces and cities or in other countries.

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Journal of Modern Accounting and Auditing, ISSN 1548-6583
June 2013, Vol. 9, No. 6, 747-755

Mediation of Computerized Accounting System (CAS) Adoption on Relationship Between Environmental Uncertainty and Organizational Performance*

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This paper investigates the mediation of the adoption of computerized accounting system (CAS) on the relationship between environmental uncertainty and organizational performance. The authors use factor analysis, path analysis, and regression model to examine the effects of CAS adoption on the relationship between environmental uncertainty and organizational performance. The findings reveal that the adoption level of CAS is positively associated with organizational characteristics, environmental uncertainty, and organizational performance, and the usage of CAS has a statistically significant mediating effect on the relationship between environmental uncertainty and organizational performance. This paper will be significant to business managers in the decision to adopt CAS.

Keywords: computerized accounting system (CAS), environmental uncertainty, organizational performance

Introduction

The use of information technology in business to process the data and information and to communicate within and between organizations has been increasingly popular. Accounting is greatly helped with information technology, which is termed as computerized accounting. The computerized accounting helps the company handle all the business processes easily and cost-effectively. International Federation of Accountants [IFAC] (2002) revealed that automatic diffusion of information and data on business activities directly into the accounting system by using integrated software solutions may lead to efficiency for organizations.

Chwelos, Benbasat, and Dexter (2001) emphasized that small- and medium-sized enterprises do not use electronic data interchange due to low perceived benefits, high implementation costs, and low organizational readiness. A main barrier in interdepartmental systems is that the full benefit of the system can be achieved only if the amount of data and information is large enough to process (Gullkvist, 2003). The large amount of

* **Acknowledgments:** The authors are sincerely thankful to Prof. David Han Min WANG (Fengchia University) for his instructions to perform this paper and to the respondents for their help in collecting the data.

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data and information will reduce processing costs while increasing the benefits achieved. This is consistent with the arguments by the Organization for Economic Cooperation and Development [OECD] (1998) that the proportion of internet-connected medium-sized enterprises is positively comparative to organizational size.

Until recently, only few studies have examined the factors, which influence the adoption decision of a computerized or e-accounting system in organizations and what affect the performance that organizations receive from utilizing this system. Only Gullkvist (2003) and Uchenna (2011) have explored the effect of external environment and perceived benefit of e-accounting on the adoption of computerized accounting system (CAS). The usage of CAS can affect the relationship between environmental uncertainty and organizational performance. Nonetheless, to the best of our knowledge, no study empirically inspected whether the adoption of CAS mediates the effect of environmental uncertainty on organizational performance. Thus, the authors thought that it is necessary to conduct an empirical investigation on this complex relationship. Furthermore, organizational characteristics are proposed by previous research (Miller, 1993; Haldma & Laats, 2002) as the determinants of the adoption of management system, but in return, the adoption of management system will enhance business performance, especially under a high uncertainty of environment or task (Ajibolade, Arowomole, & Ojikutu, 2010; Yulius, 2010). Grounded on these discussions, the role of organizational characteristics is believed as important in adopting CAS for business. Managers in organizations with different characteristics may react in different ways to environmental variations, thus the authors expect that companies with dissimilar characteristics will have different perceptions of and different decisions on usage of CAS when business environments encounter a change. In order to discover these possible dissimilarities, the authors categorize the sample into sub-groups with different organizational characteristics using the cluster procedure and then examine the hypotheses for these sub-samples.

This paper scrutinizes the mediating effects of the adoption of CAS on the relationship between environmental uncertainty and organizational performance. The authors also reexamine the impacts of external environmental uncertainties and organizational characteristics on the adoption of the system and the organizational performance in the Vietnamese economic and environmental settings as a developing business context. In addition, the authors explore the relationships for the whole sample as well as for sub-groups of companies with different characteristics.

This study will shed light on the usage level and benefit of CAS for accounting researchers, and it is also helpful to those involved in the management of business organizations in the developing countries including Vietnam. This paper is the first to examine the mediation that the usage of CAS may put on the relationship between environmental uncertainty and its benefits.

Literature Review and the Research Model

The authors use a part of the electronic data interchange adoption model by Iacovou, Benbasat, and Dexter (1995) to study the adoption of CAS and organizational performance. In this model, the adoption of electronic data interchange is suggested to enhance the actual benefit for adopters. The original model will be partially employed and explored across "different organizational characteristics".

CAS and Organizational Performance

The adoption of CAS is modified from Iacovou at al. (1995) in which it is determined as the degree that an organization chooses and uses computers and the internet for its accounting practices. Organizational performance refers to the actual benefits of an organization as measured against its expected outputs.

The prior studies (Iacovou at al., 1995; Gullkvist, 2003; Uchenna, 2011) find out that the adoption of electronic data interchange leads to the company's benefit. In a research on management accounting, Ajibolade et al. (2010) determined a positive relation between management accounting system and organizational performance. Additionally, Wan (2011) demonstrated a positive effect of e-accounting on the task performance. From the previous findings, within the computerized accounting context, the following hypothesis is arrived at.

H1: The adoption of CAS is likely to improve organizational performance.

Environmental Uncertainty and CAS

Miles, Snow, Meyer, and Coleman (1978) identified environmental uncertainty as the predictability of business conditions in a company's environment. Environmental uncertainty is suggested by K. D. Brouthers, L. E. Brouthers, and Werner (2002) as five items: (1) government policies; (2) economy; (3) resources and services used by the company; (4) product market and demand; and (5) competition.

Higher degrees of environmental uncertainty will result in higher demands for formal procedures (Pfeffer & Leblebici, 1973). Additionally, Iacovou et al. (1995) reported that external pressures put an impact on companies' adoption of electronic data interchange. Haldma and Laats (2002) claimed that external factors influence the use of the accounting system, while Masrek (2009) showed the relationship between the environmental uncertainty and the utilization of information systems. Furthermore, Ajibolade et al. (2010) and Ibadin and Imoisili (2010) provided evidence on the relationship between environmental uncertainty and accounting system design. Their findings are in support of the perception that more sophisticated accounting system designs will enhance organizational performance if this design is tailored to the level of the environmental uncertainty facing the organizations. These findings allow the authors to come to the following hypothesis in the computerized accounting context.

H2: Environmental uncertainty can impact the adoption of CAS.

Environmental Uncertainty and Organizational Performance

Under increasing competition, firm performance is found by Mia and Clarke (1999) to be improved. Additionally, when environmental uncertainty becomes higher, managers pay more attention to their business, so organizational performance can be enhanced (Ajibolade et al., 2010). In other words, when the business environment becomes difficultly predictable, managers pay more attention to management so that they better control the situation, which helps them more effectively operate their businesses and so gain a higher performance. As a result, the authors can reach the following hypothesis.

H3: Organizational performance is likely to be improved by environmental uncertainty.

Organizational Characteristics and CAS

Organizational characteristics is mentioned by Rogers (1995) as centralization, formalization, interconnectedness, and organizational size, and afterwards, Breen, Sciulli, and Calvert (2003) incorporated business size, information intensity, and industry sector to make up organizational characteristics. Furthermore, Sankaran and Kouzmin (2005) defined organizational characteristics as a factor including business size, business process, organizational structure, and departmental integration. Based on the abovementioned studies, the authors join together firm size, organizational interdependence (interconnectedness), and firm type (industry sector) to make up organizational characteristics.

Haldma and Laats (2002) and Abdel-Kader and Luther (2008) considered organizational characteristics as important in managers' decisions of the use of control system. The level of accounting system sophistication is confirmed to be significantly different according to the firm size and the business sector to which an organization belongs (Al-Omiri & Drury, 2007). Furthermore, Chenhall and Morris (1986) showed that there is a strong relationship between organizational interdependence and characteristics of accounting system. In addition, Abdel-Kader and Luther (2008) and Masrek (2009) ascertained that firm characteristics account for the utilization of accounting practices and information systems by an organization. Drawing on these arguments, the authors can formulate the following hypothesis in computerized accounting context.

H4: Organizational characteristics likely affect the adoption of CAS.

Mediating Effect of CAS

Baron and Kenny (1986) and Spencer (2011) indicated that when an independent variable has a significant effect on a dependent variable and also on a third variable (mediator), and simultaneously, this third variable significantly impacts the dependent variable, then the third variable can be hypothesized to mediate the relationship between the independent variable and the dependent variable. Furthermore, Mia (1988) suggested that if there is a relationship between two variables at least partly through a third variable, then the third variable can be considered to play the mediating role in the relationship between the two variables. Based on these preceding hypotheses 1, 2, and 3, in which they suggest the direct effects of environmental uncertainty on CAS and organizational performance, and at the same time also the direct effects of CAS on organizational performance, the authors can propose the hypothesis on the mediating relation.

H5: The adoption of CAS may mediate the relationship of environmental uncertainty with organizational performance.

From the above hypotheses, the authors arrive at the main research model below (see Figure 1).

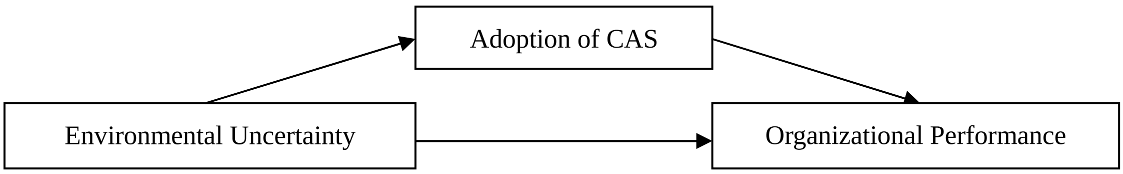

Figure 1. Research model.

Research Design

Data Collection

The data are collected from 450 publicly registered companies that went public before 2008 in the two Vietnamese stock exchanges (Ha Noi and Ho Chi Minh Stock Exchanges). The respondents are managers involved in accounting and management. Before the data collection, the authors carry out a pretest by discussing with 10 company managers involved in accounting and/or executive management and 10 experts in management accounting who work for the Vietnamese tax accounting agencies about our questionnaire, so our measures are proved to be appropriate for this study (Donna, Mahler, & Cohen, 2011). Four hundred and fifty questionnaires are delivered to the respondents (one respondent for one company). Nevertheless, only 399 questionnaires are appropriately completed, including 106 small, 144 medium, and 149 large organizations.

Definition of Variables

Organizational performance (OPE) is assessed by using a 5-point scale from “1” = no growth, “2” = a little growth, “3” = average growth, and “4” = fast growth to “5” = very fast growth for the following variables: (1) “growth in sales”; (2) “returns on investment”; (3) “returns on sales”; (4) “growth in market share”; and (5) “growth in profit”, which is modified from Ajibolade et al. (2010) and Schulz, Wu, and Chow (2010).

Adoption of CAS is evaluated with the five items: (1) the usage of computer for accounting practices; (2) the usage of accounting software; (3) the usage of internet-accounting within the company; (4) the usage of internet-accounting with other outside agencies; and (5) the usage of internet-accounting for other purposes, using a 5-point linear numeric scale ranging from “1” = never considering CAS to “5” = under implementation of CAS. This measure is adapted from Iacovou et al. (1995) and Schulz et al. (2010).

Environmental uncertainty (PEU) is measured with the five dimensions: (1) government policies; (2) economy; (3) resources and services used by the company; (4) product market and demand; and (5) competition, using a 5-point scale ranging from “1” = always predicted, “2” = easily predicted, “3” = difficult to be predicted, and “4” = quite difficult to be predicted to “5” = very difficult to be predicted, which is adapted from Brouthers et al. (2002).

Organizational characteristics (OCH) are composed of organizational size, type, and interdependence. Organizational size is measured with three states: (1) small if its registered capital is equal to or less than Vietnamese Dong (VND) 20 billion; (2) medium if the capital is from VND 20 billion to VND 100 billion; and (3) large if the capital is greater than VND 100 billion, according to Nguyen (2009). Organizational type is evaluated with three levels: (1) manufacturing sector; (2) manufacturing service sector; and (3) service sector, which is modified from Taha, Etemadi, and Pifeh (2011) and Brouthers et al. (2002). Organizational interdependence is also assessed with three descriptions of intra-unit work flow integration, ranging from “1” = pooled, “2” = sequential, to “3” = reciprocal interdependence, which is adapted from Chenhall and Morris (1986) and Ibadin and Imoisili (2010).

Data Analysis

Reliability analysis is performed in order to test the internal consistency of the items. At the same time, an exploratory factor analysis (EFA) is conducted for construct validity. Structural equation modeling (SEM) procedure is employed to test the abovementioned hypotheses. Next, a cluster analysis is applied to investigate differences in decisions to adopt CAS across “different organizational characteristics”. Finally, procedures by Baron and Kenny (1986) and Sobel (1982) are utilized to examine the mediating effect of the adoption of CAS on the relationship of environmental uncertainty with organizational performance.

Results

Before further analyses, the internal consistency of items within their measure is examined with the reliability procedure. The reliability procedure indicates that Cronbach alpha coefficients for the scales all exceed the lowest accepted level of 0.7 (Nunnally, 1978) for reliable measures (untabulated). As a result, the variables used in this research are internally consistent with their constructs.

Following the internal consistency test, the construct validity is conducted to assess convergent validity and discriminant validity. The convergent validity refers to the degree to which several attempts to measure the same concept are in agreement based on the criteria of the loadings above 0.4, while the discriminant validity refers to the degree to which measures of different concepts are distinct drawing on the criteria of the cross-loadings over 0.3 (Nunnally, 1978). For the purpose, the authors perform an EFA. The results show that all the loadings are over 0.7 (untabulated) and the cross-loadings are more than 0.3 (untabulated), indicating the discriminant validity and the convergent validity. The communalities all attain the levels of over 0.5 (untabulated), which allows them to be retained for the further analysis (Hair, Black, Babin, & Anderson, 2010).

The SEM procedure is employed to test the abovementioned hypotheses. SEM allows the authors to capture the whole picture of all the relations in the model at the same time. First, the authors run SEM for all of the four factors to verify the hypotheses 1, 2, 3, and 4. Now that OCH only has an association with CAS, the authors remove it out and do the analysis for the remaining three variables to investigate whether there are any differences in the relations.

Table 1

Summary of the Main Indices

Model	CMIN	DF	*P*	CMIN/DF	CFI	RMSEA
1	216.520	131	0.000	1.653	0.984	0.041
2	177.583	87	0.000	2.041	0.982	0.051

Notes. CMIN: Chi- square value; DF: Degree of freedom; CFI: Comparative fit indices; and RMSEA: Root mean square errors of approximation.

Table 1 shows that both the models gain the fit goodness. CMIN divided by DF gets the value of 1.653 and 2.041 which is less than 3, the preferably accepted limit by Koufaris and Hampton-Sosa (2002). In addition, the CFI at 0.984 and 0.982 is more than 0.92, and the RMSEA are 0.041 and 0.051 well below the 0.07 cut-off (Hair et al., 2010).

Based on Table 2, which exhibits the regression coefficients and significance values, the authors can assess the associations in the models. All the relationships are significant at the level of less than 0.001 except for the linkage between PEU and OPE that has the significance level of 0.004. Consequently, the authors can conclude that the results from Table 2 provide statistically significant supports for hypotheses 1, 2, 3, and 4.

Table 2

Regression Coefficients

Model	Relationship			Estimate	Standard estimate	*P*
1	CAS	<---	OCH	0.223	0.213	0.000
	CAS	<---	PEU	0.069	0.157	0.000
	OPE	<---	PEU	0.075	0.125	0.004
	OPE	<---	CAS	0.612	0.452	0.000
2	CAS	<---	PEU	0.071	0.163	0.000
	OPE	<---	PEU	0.075	0.125	0.004
	OPE	<---	CAS	0.611	0.451	0.000

For the model with OCH (model 1), the influence of CAS on OPE is the greatest with the coefficient of 0.612, implying that the companies adopting CAS outperform the ones without these systems. Next, organizational characteristics strongly lead managers to accept CAS with the weight of 0.223. On the other hand, environmental uncertainty is a weaker predictor for the adoption of CAS and the organizational performance, and the slightest effect is of the association between environmental uncertainty and the acceptance of CAS. The findings are consistent with the prior findings that the organizations, which are large-sized and highly complex-structured, operate in highly uncertain conditions and are more likely to choose and use CAS for their work than the others. In turn, the adoption of CAS allows a company to outperform the others without using CAS. In addition, uncertain environment challenges companies, but it also enables them to pay more attention to business management, which leads to higher performance.

After removing OCH out of the model, the authors do the analysis on three relations (between PEU and CAS, PEU and OPE, and CAS and OPE). The results are shown in Table 2 (model 2). These associations nearly remain unchanged (in regression coefficients and significance level), compared with those in model 1 which includes OCH. Consequently, the authors can conclude that organizational characteristics do not affect the other relations in the research model.

The authors suppose that companies with different characteristics will have different decisions of CAS usage and thus earn different performances when business environments become highly unpredictable. To verify this argument, the authors categorize their sample into organization groups with dissimilar characteristics and then investigate the relations in the research model for each group. The cluster procedure divides the whole sample into three sub-groups. The majority of group 1 is large-sized, serviced, and reciprocal. Group 2 belongs to the small, manufacturing, and pooled cluster, whereas group 3 consists of companies with small and medium size, manufacturing service, manufacturing service industry, and pooled interdependence.

The results (untabulated) to investigate the casual relationships for the three sub-groups indicate that the adoption of CAS is significantly impacted by the level of uncertain environment, and in turn, this adoption can result in a high performance for all the three company groups, which is consistent with the above findings, regardless of organizational characteristics. Nonetheless, in case of group 3, PEU is found to have no effect on the usage of CAS as well as on organizational performance. This may be because that the number of observations for this group is small and just equals to 54 which is well below the preferable level of 100 (Hair et al., 2010), and so the resulting findings are inexact. Furthermore, organizations of group 3 are both small and pooled but pertain to manufacturing service and service industry, which presents high heterogeneity. This heterogeneity leads group 3 to reacting to environmental change in a dissimilar way to the homogenous groups 1 and 2, and hence, it produces the contrary results.

The mediation of CAS on the relationships between PEU and OPE is tested by employing the mediation test by Baron and Kenny (1986) and the Sobel-Goodman method (Sobel, 1982). The results (untabulated) from the regression for the mediation test demonstrate that the effects of PEU on OPE and on CAS are statistically significant at under 0.001 values. In addition, CAS also has a statistically significant impact on OPE with the control of PEU. Hence, the authors can establish the hypothesis that CAS mediates the associations between PEU and CAS and verify the mediation with the Sobel-Goodman procedure (Sobel, 1982).

Table 3

Indices for Sobel-Goodman Test

Mediation	Relationship	Test statistic	*P*
CAS	PEU & OPE	3.8857	0.000

The Sobel-Goodman method produces the indices in Table 3, which shows that the relation between environmental uncertainty and organizational performance is significantly mediated by the adoption of CAS at the significance level of under 0.001. As a result, hypothesis 5, which suggests the adoption of CAS, creates the mediation on the association between environmental uncertainty and organizational performance is empirically supported.

Conclusions

This paper provides some implications for those responsible for accounting or/and management. The findings reveal that when an organization with complex characteristics operates in a higher uncertain business environment, its managers are more likely to adopt CAS in order to efficiently cope with environmental change, which brings about a high performance. This is consistent with the previous findings that uncertain business environment makes managers need more timely and accurate information which is provided by CAS, so that they can more effectively control and manage their organizations.

The findings are first to provide the evidence on the mediation of the usage of CAS in the relationship between environmental uncertainty and organizational performance. This paper also investigates the relationships across different company groups. The results indicate that the impacts of PEU on the adoption of CAS and organizational performance as well as the effect of CAS on organizational performance remain similar regardless of organizational characteristics except for the statistically insignificant influences of PEU on the adoption of CAS and organizational performance in case of group 3 whose organizational characteristics are not homogeneous. This in-homogeneity can result in the inconsistent outcomes.

The findings from this paper are significant to managers and those involved in accounting or/and management, especially useful for companies in the developing countries including Vietnam. The business environment is considerably changing, because their economy is substantially developing, and as found out in this research, the CAS greatly impacts organizational performance. Therefore, these results can help managers in the developing countries, such as Vietnam construct and apply CAS to their companies in order to gain the highest performance.

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Journal of Modern Accounting and Auditing, ISSN 1548-6583
June 2013, Vol. 9, No. 6, 756-776

Does International Financial Reporting Standards (IFRS) Adoption Matter? The Effects on Financial Transparency and Earnings Management

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This paper aims to examine whether or not the adoption of fair value accounting (FVA) has an effect on the level of information transparency and the degree of earnings management, to identify whether the legal institutions have powers to explain those effects of the adoption of FVA, and to explore the relationship between the effects of the adoption of FVA and several specific characteristics of the banking industry. By investigating the banking sectors of four Asian countries/regions including China, Hong Kong, the Philippines, and Singapore which have adopted International Financial Reporting Standards (IFRS), this paper finds that after the application of FVA, the estimated cost of equity of the sampled banks significantly decreases and the relationship between banks' loan loss provisions (LLP) and earnings before provisions and tax (EBPT) becomes irrelevant. The evidence supports the effects of FVA adoption on the enhancement of accounting quality. In addition, sound legal/extra-legal systems are closely linked to the degree of accounting quality and still have a strong influence on FVA.

Keywords: earnings management, fair value accounting (FVA), information transparency, legal institutions

Introduction

With the globalization of capital markets, multinational enterprises have rapidly grown in recent years. To gain the confidence of international investors and access capital from overseas funds, it is necessary for these enterprises' financial statements to conform to international standards. However, the work involved to meet these standards is obviously costly, and the delays that result from preparing various versions of the statements for international enterprises affect the firms' efficiency. As a result, the harmonization of local with international accounting standards has been duly noted and discussed for many years. Most legislators, regulators, and researchers agree that efforts to standardize financial statements will directly help the firms, shareholders, analysts, accountants, auditors, and so on (Tarca, 2004; Barth, Landsman, & Lang, 2008; Cai, Rahman, & Courtenay, 2008; Wang, 2009).

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Not only for the above considerations but also in order to have relevant and reliable corporate reporting information, the two accounting standards bodies, namely, the International Accounting Standards Board (IASB) and the Financial Accounting Standards Board (FASB), have committed themselves to developing a set of high-quality financial reporting standards based on a "performance-style reporting system" instead of the traditional financial reporting system. As a consequence, following the full adoption of International Financial Reporting Standards (IFRS) in the European Union (EU) since 2005, there are now more than 115 countries, including Australia, New Zealand, Hong Kong, and South Africa requiring that their own businesses accept IFRS as their accounting standards. Other countries, such as Canada, Korea, Brazil, and India, have drawn up schedules and are expected to gradually adopt IFRS by 2012. Currently, among the global top 10 capital markets, only Japan and the United States (US) have not yet made a final decision to adopt IFRS. Both countries are, however, inclined to work on a plan to converge their own existing accounting standards with the IFRS standards. It is predictable that IFRS will soon become the most important and common language in global capital markets.

The fundamental scheme of IFRS is the introduction of fair value accounting (FVA). FVA, also referred to as "mark-to-market", is a financial reporting approach in which companies are required or permitted to measure and report, on an ongoing basis, certain assets and liabilities at estimates of the prices they would receive if they were to sell the assets or would pay if they were to be relieved of the liabilities. Most prior studies point out that the mark-to-market approach may increase the transparency of information (Kass, 2010). Transparency of information refers to the extent to which a company makes its financing status known to the public. When a company implements FVA, it is reasonable to expect that its transparency of information will be enhanced. Owing to the superior transparency of the resulting financial statements, outside investors can understand the capital of the entity better and strengthen their ability to predict the firm's earnings based on its existing resource base. Hope (2003) supported this argument by providing evidence that the error in the analysts' earnings forecasts will be reduced after adopting IFRS. Moreover, as a result of the increased transparency of the financial statements, outsiders may be willing to lower their required benefits, thereby leading to a decline in the entity's cost of equity (Botosan & Plumlee, 2002; Cheng, Collins, & Huang, 2006).

There seems to be no doubt that adopting FVA will improve the transparency of the financial statements. However, one question that needs to be further asked concerns whether or not using FVA will cause the company's earnings to fluctuate significantly and then induce the company to engage in improper earnings management. Jeanjean and Stolowy (2008) showed that after the adoption of IFRS, earnings management increased in France and did not decrease in Australia or in the United Kingdom (UK). In addition, Barth, Landsman, Lang, and Williams (2007) found that the earnings of companies that adopt International Accounting Standards (IAS) are smoother than those of companies that adopt the US Generally Accepted Accounting Principles (GAAP). Therefore, the conclusions regarding the effects of FVA are still inconsistent and worth discussing in more details.

In terms of specific industry characteristics, the banking industry usually has a relatively higher level of information transparency than other sectors. However, banks in practice have special incentives to smooth earnings, relative to the industries in general. First, "A banking system faces a potential liquidity problem and thus is exposed to the risk of widespread bank runs" (Shen & Chih, 2005, p. 2677). To keep depositors from losing confidence, banks have an incentive to prevent their earnings from being negative. Second, uncertainty over the banks stems from their assets, loans, and trading assets in particular, and high leverage compounds the uncertainty over their assets. Banks' assets present bankers with ample opportunities for risk or asset substitution. To hide asset substitution behavior, bank insiders have the incentive to engage in earnings management (Morgan, 2002). Third, banking systems are highly regulated. To avoid violating regulations, bankers are inclined to employ earnings management as management skills (Shen & Chih, 2005).

In considering the possible reasons above, it is not hard to foresee that the adoption of FVA will have an even dramatic impact on the banking industry. In addition to the market capitalization ratios of banks in the capital market being typically large, the main operating profits of the banking industry are sourced from the spread of interest rates between deposits and bank loans and receivables. Once the bank loans and receivables are measured at market value, the provisions for bad debts and reserves will be required to be raised so that the firm's performance will be ultimately impaired. To achieve the purpose of smoothing earnings, bank managers are more likely to engage in earnings manipulation, for example, by adjusting the loan loss provisions (LLP) (Ahmed, Takeda, & Thomas, 1999).

Empirical evidence provided by Beasley-Murray (2003) has proved that if the derivatives that the financial institutions own must be recorded based on the mark-to-market approach, the financial reports will be too complicated, which in turn will damage the way businesses operate. Hung (2009) also showed that when financial institutions hold derivatives as hedge tools, there will exist artificial volatility that cannot reflect the real situation after using FVA without sufficient disclosure. It is obvious that under IFRS, the classification of financial instruments is such that they are measured at fair value, and therefore, the profit of the banking industry that holds a higher proportion of financial assets is more difficult to predict. However, so far, several studies have investigated the impact of IFRS/fair value on industries in general (Hope, Jin, & Kang, 2006; Barth et al., 2008; Jeanjean & Stolowy, 2008), but there is still an insufficiency of data that focus on financial institutions, particularly on the banking industry.

More importantly, while the advantages of fair value measurements are that they increase the consistency and comparability of the market price movements, if the market price does not reflect the true value of economic conditions, it might give rise to the agency problem. That is, under a mature financial environment in which buyers and sellers can trade effectively, it is more accurate to reflect the true value of most financial instruments by using FVA rather than cost-based accounting. However, FVA probably cannot be representative when the markets are less effective. Given that most studies on the effects of FVA adoption have been conducted in western countries (Daske, 2006; Li, 2010; Jeanjean & Stolowy, 2008; Armstrong, Barth, Jagolinzer, & Riedl, 2010), this paper attempts to provide more valuable evidence for the banking sector in four Asian countries which to date have announced their full adoption of FVA: Singapore and Hong Kong from an English legal origin and the Philippines and China from a non-English legal origin.

In general, this paper aims to examine whether or not the adoption of FVA has an effect on the level of information transparency and the degree of earnings management, to identify whether or not legal institutions have the power to explain the effect of adopting FVA, and to explore the relationship between the effect of adopting FVA and several specific characteristics of the banking industry. By investigating four Asian countries which have fully adopted IFRS, this paper mainly finds that after the adoption of FVA, the estimated cost of equity of the sampled banks significantly decreases and the relationship between the banks' LLP and earnings becomes irrelevant. This evidence supports the view that the adoption of FVA enhances accounting quality. In addition, sound legal/extra-legal systems are closely linked to the degree of accounting quality and still have a strong influence on FVA.

Literature Review

FVA on Earnings Management

Based on the above concept, managerial opportunism in FVA has grown in importance in light of recent international accounting convergence. Recent studies have questioned the quality of financial statements prepared under IFRS standards, particularly in the presence of weak enforcement mechanisms and adverse reporting incentives (Ball, Robin, & Wu, 2003; Daske & Gebhardt, 2006).

Barth et al. (2008) investigated whether IAS/IFRS adoption leads to less earnings management. They assessed earnings management based on: (1) the variance of the change in net income; (2) the ratio of the variance of the change in net income to the variance of the change in cash flows; (3) the correlation between accruals and cash flows; and (4) the frequency of small positive net income. With their resulting sample of IAS firms from Datastream and WorldScope comprising 2,212 firms around the world that adopted IAS between 1995 and 2006, their results showed that the application of IAS/IFRS has no systematic effect on the relative difference in accounting quality.

By focusing on the case of Germany, Christensen, Lee, and Walker (2008) tested the relationship between IFRS adoption and earnings management explained by: (1) the variability of changes in earnings; (2) the variability of changes in earnings relative to the variability of changes in cash flows; and (3) the negative correlation between accruals and cash flows. They documented that a decrease in earnings management is connected to the voluntary adoption of IFRS, but that there is no such evidence for the firms that are forced to adopt IFRS. Jeanjean and Stolowy (2008) concentrated on three IFRS first-time adopter countries (422 firms in Australia, 321 firms in France, and 403 firms in the UK). They used a thresholds approach (earnings distributions for discontinuities around thresholds before and after IFRS implementation) and also found that the incidence of earnings management did not decline after the introduction of IFRS but in fact increased in France.

Based on 305 US firms filing with the Securities and Exchange Commission (SEC) from September 2000 to December 2005, Dechow, Myers, and Shakespeare (2009) observed the activities of receivables securitizations with retained interests, because the retained cash flows must be recorded at fair value even though no active market value is likely to exist, thus allowing ample opportunities to manipulate earnings. Their findings show that managers use the discretion obtained from FVA rules to report larger gains and chief executive officer (CEO) pay-sensitivity, for these gains are similar to that for regular earnings components. It means that CEOs are inclined to use the flexibility available in FVA rules to smooth earnings, since they are rewarded for the gains they report.

Barth and Taylor (2009) disagreed on the arguments of Dechow et al. (2009) by identifying that the role of fair value estimates in accounting for asset securitizations is indirect. To defend FVA, they further clarified that fair value like all accounting amounts is easily manipulated. It would be too rough to conclude that the evidence of earnings management is caused by a particular accounting method. Estimating fair value does allow scope for management discretion, but this discretion may be welfare improving. Other measures may possibly be even easier to manipulate, or perhaps managers are always likely to find a way of manipulating accounting numbers. Should we lay the blame on managerial manipulation or the rationale of FVA? The answer still seems to be obvious.

FVA and Corporate Governance

Although the valuation problems of FVA are still being debated, FVA does induce agency problems due to managerial opportunism. A considerable number of prior corporate governance studies have proposed several governance mechanisms to eliminate these agency costs. The generally accepted solutions involve enhancing the effectiveness of monitoring through internal and external governance mechanisms, such as CEO compensation (Anderson & Reeb, 2003; Sharma & Ho, 2002; Barth, Gulbrandsen, & Schonea, 2005), board composition (Rosenstein & Wyatt, 1990; Weisbach, 1988), and other large shareholders (André, Kooli, & L'Her, 2004; Maury & Pajuste, 2005). Recent research has also addressed the importance of legal institutions including legal origin, anti-director rights, legal enforcement, accounting disclosure (La Porta, Lopez-de-Silanes, Shleifer, & Vishny, 1998), and several extralegal schemes (Zingales, 2000; Dyck & Zingales, 2004).

However, these types of agency problems in regard to FVA have some specific features. For instance, previous governance studies emphasize the role of independent directors on the board. However, an independent director without good training or a related financial background would not be able to fully understand the sophisticated valuation of the fair value estimates. In addition, the enforcement of information disclosure for FVA under uncertainty may in turn lead to the possible delivery of misleading messages (noise) that may outweigh the information content. Compared with the large amount of governance literature that deals with the problems of earnings management, to date, the number of academic empirical investigations focusing on the effects of corporate governance on FVA is very small, even though it is a critical and timely issue.

Aboody, Barth, and Kasznik (2006) collected 3,368 firm-year observations related to 887 US firms with stock option-based compensation plans over the period from 1996 to 2001 to investigate whether the managerial discretion reflected in the assumptions varies predictably with the incentives and opportunities for firms to understate Financial Accounting Standards (FAS) 123 expense[1]. They found that firms' option value estimates significantly understate the option values. The understatement increases with higher stock option-based compensation expense, firms that have CEOs with perceived excessive pay, and firms with weaker corporate governance.

In a series of papers documented by Bhat (2008a; 2008b), the association between stock returns and fair value gains and losses (FVGL) has been applied as a measure to investigate the impacts of disclosure and corporate governance on the quality of the fair value estimates. Based on a sample of 180 US commercial banks during the period of 2003-2005, he found that disclosure has a direct positive effect on the FVGL-returns association, but the effect of corporate governance is indirect and comes via the medium of disclosure.

Penman (2007) identified the importance of both the competence and independence of three monitors (auditors, assessors, and corporate boards) in minimizing the biases of fair value estimates for level 3, but he did not provide empirical evidence to prove that. Following the idea, Song, Thomas, and Yi (2010) used quarterly reports of US banking firms in 2008 to discuss the effects of managerial opportunism on FAS 157 fair value hierarchy information. They found that the value relevance of fair values (especially level 3) is less

[1] FAS 123 expense relates to employee compensation in the form of stock options. It is based on estimates of the grant-date values of options granted to employees, which depend on expectations about the future. Similar to FAS 157, while FAS 123 provides guidance relating to factors, firms should consider in making these estimates, substantial scope for managerial discretion remains (Aboody et al., 2006).

evident for firms with weaker corporate governance. In particular, instead of basing their study on a single governance index as in the case of the prior literature, they examined whether the value relevance of level 3 inputs varies across six individual governance mechanisms[2]. They found that different governance mechanisms have different impacts on different valuation levels, but the overall results of individual measures continue to support the effects of governance on fair value estimates.

Nevertheless, this line of research is generally focused on the US, and there has been relatively little work studying the rest of the world. One published paper provided by Tsao, Chen, Chi, and Lo (2009) examined the effect of the extent of using earnings management (derivatives/ discretionary accruals) on firm value, and it was found that ownership structure did have an impact on the choice of earnings management devices. Firms with weaker corporate governance mechanisms are likely to use discretionary accruals rather than derivatives as their earnings management method. Young and Wu (2009) inspected the effects of corporate governance on both the determinants and earnings informativeness pertaining to asset impairments which are required by Statement of Financial Accounting Standards (SFAS) No. 35 in the spirit of FVA. Their findings confirmed that sound governance mechanisms efficiently monitor managers' accounting choices for asset impairment and thereby improve the informativeness of earnings.

FVA and Financial Institutions

It is obvious that financial institutions have their own specific industry characteristics so that they confront different shocks and impacts of IFRS adoption. However, far too little attention has been paid to this industry to date. Healy and Wahlen (1999) focused on the motivation of earnings management and in particular observed that since banking regulations require specific capital adequacy requirements, banks will overstate LLP and understate loan write-offs as long as they meet minimum capital requirements. Therefore, loan loss reserves and write-offs are usually used as proxies for earnings management in the banking industry.

Wang (2009) presented a descriptive article that investigated the impact of adopting IFRS on the banking industry in Taiwan. He proposed three major concerns for financial institutions in response to the IFRS: (1) the valuation of loans and receivables; (2) the fair value measurement and disclosure; and (3) the accounting treatment of intangibles arising from mergers and acquisitions. He argued that the adoption of IAS 39 by the banks will decrease their profitability and increase their financing risk in the short term, but will increase their financial soundness and enhance their risk tolerance over the longer term.

Leventis, Dimitropoulos, and Anandarajan (2011) examined the impact of the application of IFRS on the use of LLP in earnings management. Based on a sample of 91 EU-listed commercial banks covering a period of 10 years (before and after the adoption of IFRS), they found that earnings management via LLP is significantly reduced after the implementation of IFRS. Furthermore, compared with the less risky banks, earnings management behavior is more pronounced for risky banks, but is significantly reduced after the implementation of IFRS. They concluded that the implementation of IFRS in the EU appears to have improved earnings quality by mitigating the tendency of bank managers of listed commercial banks to engage in earnings management using LLP.

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[2] The six mechanisms are: (1) board independence; (2) audit committee's financial expertise; (3) the frequency of annual audit committee meetings; (4) the percentage of shares held by institutional investors; (5) the auditor's office size; and (6) no material control weakness problems under Sections 302 and 404 of the Sarbanes-Oxley Act.

Research Methodology

Sample Selection

The dataset used in our study is limited to the banking industry in four Asian countries: Singapore, Hong Kong, the Philippines, and China. To inspect the differences between pre- and post-FVA application, in this study, the authors select two years before and after the effective year of full adoption of IFRS[3] as the observation window. Since different countries have their own individual effective years of adoption, the data are collected separately from four sample periods for each individual country: (1) Singapore: 2003-2007, excluding the year of adoption (2005)[4]; (2) Hong Kong: 2003-2007, excluding the year of adoption (2005); (3) The Philippines: 2003-2007, excluding the year of adoption (2005); and (4) China: 2005-2009, excluding the year of adoption (2007). Data are extracted from Bankscope and the Thomson One Banker database. In addition, the sample in this research should also meet the following criteria:

(1) To clearly identify the definition of financial institutions, only banks in the four Asian countries are examined in this study;

(2) To ensure the reliability of the data, banks should be active public firms and data should be collected from a database;

(3) Bank-specific figures for measuring financial transparency and earnings management in the period before (two years before) and after (two years after) the IFRS adoption are available in the database;

(4) The other financial numbers, corporate governance indexes, and other desired data may also be collected from the database, financial proxies, or annual reports of each company.

The procedures generate a final sample of 45 listed banks with data to investigate the IFRS effects on information transparency and 49 listed banks with data to examine the differences in the level of earnings management before and after IFRS adoption.

Panel A of Table 1 provides descriptions for the sample of 45 banks (159 observations) for financial transparency measures (estimated costs of equity (ECOE)) by country. Most of the sample are from China (17 banks (53 observations) out of the 45 (159) or 37.78% (33.33%)), followed by Hong Kong (13 banks (51 observations) or 28.88% (32.08%)) and the Philippines (11 banks (42 observations) or 24.44% (26.42%)). The smallest percentage of the sample is from Singapore (four banks (13 observations) or 8.9% (8.17%)), because Singapore's financial sector is dominated by only a few banks. The sample is grouped before IFRS adoption with 71 observations and after IFRS adoption with 88 observations. The distribution of samples before and after IFRS adoption is in good agreement.

Panel B of Table 1 provides a similar report for a sample of 49 banks (186 observations) for earnings management measures (LLP) by country. Most of the sample is also from China (17 banks (59 observations) out of the 49 (186) or 34.69% (31.72%)), but the Philippines has more complete data available (16 banks (64 observations) out of the 47 (186) or 32.65 (34.40%)). The other 16 banks are spread in Hong Kong (12 banks (47 observations)) and Singapore (4 banks (16 observations)). A total of 47.85% (89 out of 186) of the

[3] This paper recognizes that compared with the effective year for the complete adoption of IFRS, a better starting observation point could be the effective year of a single regulation (i.e., IAS 39) where financial institutions were required to measure and record (and not only disclose) financial instruments at fair value in financial statements as well as classify those products by trading purposes. However, to avoid the problems caused by delays, this paper picks the full IFRS adoption year as the base year for the application of FVA.

[4] The data on the year of the adoption (t = 0) are excluded to avoid the significant impacts from the change of accounting method and make the comparison with other years appropriate (Healy et al., 1992; Linn & Swizer, 2001).

observations are classified as pre-IFRS observations and 52.15% (97 out of 186) as post-IFRS observations.

Table 1
Sample Distribution by Country

Panel A: Sample for the ECOE measure						
	Before adoption		After adoption		Total	
	Obs.	Banks	Obs.	Banks	Obs.	Banks
China	19	10	34	17	53	17
Hong Kong	25	13	26	13	51	13
The Philippines	20	10	22	11	42	11
Singapore	7	4	6	3	13	4
Total	71	37	88	44	159	45
Panel B: Sample for the LLP measure						
	Before adoption		After adoption		Total	
	Obs.	Banks	Obs.	Banks	Obs.	Banks
China	25	13	34	17	59	17
Hong Kong	24	12	23	12	47	12
The Philippines	32	16	32	16	64	16
Singapore	8	4	8	4	16	4
Total	89	45	97	49	186	49
China	19	10	34	17	53	17
Hong Kong	25	13	26	13	51	13
The Philippines	20	10	22	11	42	11
Singapore	7	4	6	3	13	4
Total	71	37	88	44	159	45

Dependent Variables

Measure of financial transparency: The ECOE. The main research purpose in this paper is to examine the relationship between the implications of FVA and accounting quality for financial institutions. As in the literature reviewed above, accounting quality could be described as increasing the level of corporate disclosure transparency or decreasing the degree of earnings management. For disclosure transparency, this paper aims to focus on the effects of FVA adoption on financial transparency, and the authors therefore employ the ECOE of firms as a measure and expect that FVA adoption will significantly reduce the ECOE due to the improvement in the level of financial transparency (Botosan & Plumlee, 2002; Daske, 2006; Cheng, Collins, & Huang, 2006; Chen & Hsu, 2007; Li, 2010).

The residual income valuation model based on a series of studies by Ohlson (1995; 2001) has been generally used to obtain ECOE in the recent accounting and finance literature (Botosan & Plumlee, 2002; Easton, Taylor, Shroff, & Sougiannis, 2002). However, Ohlson (2001) has pointed out that the clean-surplus assumption in forecasts of future book values does not hold in practical situations. Therefore, based on the Ohlson and Juettner-Nauroth's (2005) model, Easton (2004) provided a price earnings growth (PEG)[5] model of earnings and earnings growth by isolating the forecasts of the next period's accounting earnings, the forecasts of accounting earnings in the periods ahead, and expected accounting earnings beyond the two-year forecast

[5] The PEG ratio is equal to the price-earnings ratio divided by earnings growth rate. A high PEG implies that the PE ratio is high relative to the expected rate of growth in earnings, implying that the expected rate of return is low, and supporting a sell recommendation.

horizon. Under the assumption that the future long-term change in abnormal growth in accounting earnings is equal to zero, the equation may be expressed as:

$$P_0 = \left[EPS_2 - EPS_1 + r \times DPS_1 \right] / r^2 \tag{1}$$

where P_0 is the current stock price per share; EPS_1 is the forecast of the next-year earnings per share; EPS_2 is the forecast of the next-two-years of earnings per share; DPS_1 is the next-year expected dividend per share; and r is the expected rate of return.

Following Easton (2004), Chen and Hsu (2007) used the modified PEG model as in Equation (2). This model has been supported by several recent studies, such as Richardson and Welker (2001), Feng, Jorgensen, and Yoo (2004), and Li (2010)[6]. The figures for the ECOE in our paper are basically also derived from the following formula:

$$P_t = \left[E_t(EPS_{t+2}) - E_t(EPS_{t+1}) + r_e \times E_t(POUT_{t+1}) \right] / r_e^2 \tag{2}$$

where P_t is the closing price of a company's share traded on the last day of the year; $E_t(EPS_{t+2})$ and $E_t(EPS_{t+1})$ are the medians of the earnings per share estimates for the years $t + 2$ and $t + 1$ in the database three monthly data cycles previously; $E_t(POUT_{t+1})$ represents the dividends expected to be paid by the company during the next 12 months; and r_e is the ECOE. The definition of each item above is denoted by the Thomson Financial Database.

Measures of earnings management: LLP. In light of the discussion on selecting a proxy for discretionary accruals in the McNichols' (2000) paper, three major types of research methods are generally used in the current earnings management literature: (1) aggregate accruals models (Healy, 1985; DeAngelo, 1986; Jones, 1991); (2) specific accruals models (McNichols & Wilson, 1988); and (3) the frequency distribution approach (Bugstahler & Dichev, 1997). Because the research scheme of this study mainly focuses on the banking industry, the second approach derived by McNichols and Wilson (1988) has been adopted to estimate earnings management by modeling a single specific accrual: the provision for bad debts (also referred to as LLP).

By referring to McNichols and Wilson (1988), Ahmed et al. (1999) defined LLP as loan loss provisions divided by average loans outstanding. Laeven and Majnoni (2003) employed LLP over total bank assets as a proxy for LLP. They use the lagged values of total bank assets to avoid potential endogeneity problems. Fonseca and Gonzalez (2008) used LLP normalized by total bank assets at the beginning of the year in order to mitigate potential estimation problems due to heteroskedasticity. Le (2008) defined LLP as the provisions on the profit and loss account of the banking industry, and she selected LLP from the Bankscope database and divided it by total assets to eliminate the influence of the banks' size. Leventis et al. (2011) also defined LLP as the ratio of provisions for loan loss to total loans.

Apart from estimating specific LLP figures to measure the degree of earnings management, another group of scholars has attempted to verify the income smoothing hypothesis by testing the relationship between a bank's earnings and its LLP. This hypothesis is basically based on bank managers having the incentive to keep earnings smooth to maintain the bank's credibility, and they are therefore more likely to increase (reduce) the

[6] The only one difference is that Chen and Hsu (2007) used the medium of the past three years' dividend payout ratio as the measure of the forecasted dividends payout ratio. For data constrained on non-US/Canadian companies, in this study, the authors use dividends expected to be paid by the company during the next 12 months as the proxy for the expected dividends payout ratio.

LLP during the surplus (deficit) years. This positive relationship between LLP and earnings before provisions and tax (EBPT) is adopted to explain the earnings management in the banking industry and is supported by several empirical studies (Beatty, Chamberlain, & Magliolo, 1995; Docking, Hirschey, & Jones, 1997; Lobo & Zhou, 2001; Laeven & Majnoni, 2003; Shrieves & Dahl, 2003; William & Zhu, 2006). By agreeing on the income smoothing hypothesis, this paper attempts to examine the relationship between LLP and EBPT and expects to find a change in the relationship due to the adoption of FVA.

Independent Variables

The independent variables in this paper are primarily grouped into four categories: a variable for IFRS adoption, variables for corporate governance (explicitly focusing on legal institutions), variables for specific characteristics of the banking industry, and variables for firms' general features.

Variable for FVA adoption (FVA). To compare the differences in accounting quality before and after the FVA adoption, this paper sets a dummy variable (FVA) equaling to one if the sample is collected from the year after the effective year of the IFRS's full adoption (denoted as the effective year of FVA adoption), and zero if otherwise.

To test the income smoothing hypothesis, the EBPT of the sample banks is collected from the Thomson Financial Database in this paper as a continuous variable.

Variables for legal institutions. The corporate governance research has in past decades commonly examined the effects of firm-level governance mechanisms on corporate performance. On the strength of a cross-country dataset, this paper establishes the following variables to test the role of legal institutions in the relationship between FVA adoption and accounting quality in the banking sectors of four Asian sample countries.

Legal origin (ORI_E). La Porta et al. (1998) examined 49 countries around the world and assigned each company to four legal families: common law, French civil law, German civil law, and Scandinavian civil law. Stemming from the classification of legal families, an increasing amount of research has sought to compare the differences among legal families. Most empirical studies have proved that companies in countries with English origin and common law legal systems have significantly better performance (Mueller & Yurtoglu, 2000; Fauver, Houston, & Naranjo, 2003; Gugler, Mueller, & Yurtoglu, 2004). However, in considering the lack of information for China in La Porta et al.'s (1998) dataset, this paper adopts the revised statistics in the study of Djankov, La Porta, Lopez-de-Silanes, and Shleifer (2008) and sets up a dummy variable (*ORI_E*) with a value of one if the banks are in countries classified as being of English legal origin, and zero if otherwise. Here, countries defined as being of English legal origin are Singapore and Hong Kong.

Anti-self dealing index (ANTISDI). Except for the legal origin, another widely recognized investor protection metric created in Djankov et al.'s (2008) paper is the anti-self dealing measure which focuses on private enforcement mechanisms. This paper applies *ANTISDI* as a continuous variable that ranges from the lowest score of 0.22 for the Philippines to the highest score of 1.0 for Singapore (0.96 for Hong Kong and 0.76 for China respectively).

Extra-legal systems: Public opinion pressures (NEWS). To discover the function of extra-legal systems, some empirical studies have attempted to propose various estimates (e.g., Coffee (2001) for the violent crime rate and Stulz and Williamson (2003) for religion). However, to date, there have been no controlled studies to prove a strong measure for extra-legal characteristics. Dyck and Zingales (2004) explored six proxies[7] for extra-legal institutions to restrain the possibility of expropriation. Unfortunately, they only provided data for 39 countries (China is not included). Moreover, too many figures are missing in these five proxies, especially for the item of labor protection and the acceptability of cheating on tax. By extending the work of Dyck and Zingales (2004), Djankov et al. (2008) agreed with the monitoring function of public opinion pressure through the media and provided an index of newspaper circulation per capita for their sample countries to capture the effects of the open media. This paper includes the number (in logarithmic form) of newspapers circulated per capita in the sample bank's domestic country in our regression as a continuous variable (*NEWS*), as suggested in Djankov et al. (2008). The statistics from the highest to the lowest are 5.61 for Singapore, 5.38 for Hong Kong, 4.19 for the Philippines, and 4.08 for China.

Variables for specific characteristics of the banking industry. To investigate the association between FVA adoption and accounting quality with an emphasis on the banking industry, the following important features of banks are further examined: impaired loans (*IMPL*), total loans (*TL*), and the capital ratio (*CAPR*).

IMPL. Ahmed et al. (1999) documented a positive association between LLP and *IMPL*, because non-performing loans imply an increase in default risk. They employ the change in non-performing loans divided by average loans outstanding as the measure for *IMPL*. Hasan and Wall (2004) calculated the ratio of non-performing loans to total assets as the measure for *IMPL*. Le (2008) also identified *IMPL* as the non-performing loans divided by the banks' total assets. By referring to Hasan and Wall (2004) and Le (2008), this paper also calculates the ratio of non-performing loans over total bank assets as the *IMPL* variable. Non-performing loans represent the amount of loans that the bank foresees difficulty in collecting.

TL. Hasan and Wall (2004) pointed out that *TL* may be thought of as a way to capture general reserves. The interpretation of the coefficient of *TL* is that it can estimate the proportion that good loans may lose. They utilized the ratio of total loans to total assets as *TL*. Le (2008) employed *TL* as the degree of credit risk to which banks are exposed. The higher the *TL*, the higher the LLP will be. She employed the total loans divided by the total assets of banks as an alternative to *TL*. Consequently, this paper defines the ratio of total loans to total assets as the proxy for *TL*.

CAPR. Ahmed et al. (1999) analyzed the data from 113 banks and concluded that a negative relationship exists between LLP and bank capital. In addition, the connection between LLP and capital is more significantly negative with above average loan growth. They defined *CAPR* as the ratio of actual regulatory capital before loan loss reserves to the minimum required regulatory capital. Shen (2004) indicated that the banks with a higher capital ratio will decrease the degree of earnings management, since the banks do not need to bother changing the capital ratio. They use actual regulatory capital divided by risk-weighted assets as the *CAPR*. Le (2008) stated that: (1) for the earnings management purpose, managers will decrease the LLP to increase earnings and thus lower the capital ratio; and (2) for the capital ratio purpose, managers will increase the LLP to increase loan loss reserves and the capital ratio. She employed the ratio of the total capital of banks over total assets as the *CAPR*. Similar to the treatment in Le (2008), the *CAPR* variable in this paper is described as the ratio of the total capital of banks to total assets.

Variables for general firm features. To clearly identify the special effects of FVA adoption on financial transparency or earnings management in the banking industry, it is necessary to control the other variables

[7] Dyck and Zingales (2004) presented statistics for six extra-legal institutions including competition law, news circulation/population, serious crime rate, labor protection measures, tax compliance, and acceptability of cheating on taxes.

which have been well known as firm characteristics having an impact on firm performance (Fama & French, 1992; Linn & Switzer, 2001; Leventis et al., 2011; Shehzad, de Haan, & Scholtens, 2010). Therefore, the following financial statistics are considered as control variables in this study: firm size (*SIZE*), firm's risk (*BETA*), and leverage (*LEV*).

SIZE. Fama and French (1992) found that size can powerfully explain the cross-section of average stock returns. They proposed a negative relationship between size and average returns. The size effect means that small companies can earn more profits than large companies; therefore, small firms confront more risks. K. C. Chen, Z. Chen, and Wei (2003) used market capitalization as the proxy for firm size and then provided a negative correlation between the cost of equity and firm size in Asia's emerging markets. Moreover, Chen and Hsu (2007) showed that investors will trust large corporations more and will provide a lower cost of equity because of less credit risks they have. Consistent with the definition of firm size in the prior literature (Fama & French, 1992; Chen et al., 2003; Chen & Hsu, 2007), this paper employs the natural logarithm of market capitalization of sample banks as the *SIZE* variable. The market capitalization is calculated by the market price at the end of the fiscal year multiplied by the outstanding shares of banks.

BETA. As the capital asset pricing model (CAPM) has suggested, when systematic risk measured by market beta increases, the cost of equity should increase accordingly. Empirical research including Chen et al. (2003) and Chen and Hsu (2007) generally reports that there exists a positive relationship between a firm's market beta and its cost of equity. Fama and French (1992) employed the slope in the regression of a security's return on the market's return as *BETA*. Chen et al. (2003) used the market beta estimated by Datastream. Chen and Hsu (2007) defined *BETA* as systemic risk. The *BETA* variable in this paper is defined as the banks' market risk which shows the relationship between the volatility of the stock and the volatility of the market. The index acquired from the Thomson one banker database is based on 23-25 consecutive month-end price percentage changes and their relationship with a local market index.

LEV. Firms with higher leverage tend to have more variable earnings and higher credit risk, and thus investors will require a higher cost of equity to compensate for the higher risk (Hope, 2003; Cheng et al., 2006). Referring to Hope (2003) and Chen and Hsu (2007), this paper computes the *LEV* variable as the book value of total liabilities divided by the book value of total assets.

The detailed definitions of dependent and independent variables are described in Table 2.

Table 2

Variable Definitions

Variable	Definition
	Dependent variables
ECOE	The estimated costs of equity of sample banks
LLP	The loan loss provision of sample banks
	Independent variables
FVA	One if the sample is collected from the year after the effective year of IFRS full adoption, zero if otherwise
EBPT	The earnings before provision and tax of sample banks
ORI_E	One if the sample banks are from countries classified as English legal origin, zero if otherwise (Djankov et al., 2008)
ANTISDI	Anti-self dealing index of sample banks' country (Djankov et al., 2008)
NEWS	Index of newspaper circulation per capital of sample banks' country (Djankov et al., 2008)
IMPL	The ratio of non-performing loans to total assets
TL	The ratio of total loans to total assets

(Table 2 continued)

Variable	Definition
CAPR	The ratio of total capital of sample banks to total assets
SIZE	The natural logarithm of market capitalization of sample banks
BETA	The market risk of sample banks
LEV	The book value of total liabilities divided by the book value of total assets

Empirical Results

Analysis of Information Transparency

Table 3 displays the descriptive statistics of the ECOE for the entire observation period and a breakdown for the four countries (China, Hong Kong, the Philippines, and Singapore). There are 159 observations for the full sample with 53 observations in China, 51 observations in Hong Kong, 42 observations in the Philippines, and 13 observations in Singapore. The mean (median) of the ECOE in the Philippines is 161% (136%), the highest of the four countries. On the contrary, Singapore has the lowest mean (median) of the ECOE, which is 15% (14%). Compared with around an 11% expected rate of return on equity capital for the US sample in Easton (2004) and a 9.5% ex-ante cost of equity capital for Taiwan companies in the study of Chen and Hsu (2007), the ECOE derived from the PEG model for China, Hong Kong, and the Philippines in our dataset is relatively high, but the number for Singapore is comparable to that in the previous studies.

Table 3

ECOE

		Entire period	Before adoption	After adoption	Univariate test
China	Count	53	19	34	
	Mean	47%	58%	42%	-3.442***
	Median	45%	55%	39%	1.502**
Hong Kong	Count	51	25	26	
	Mean	37%	45%	30%	-2.221**
	Median	36%	42%	30%	2.016***
The Philippines	Count	42	20	22	
	Mean	161%	214%	113%	-4.692***
	Median	136%	183%	105%	1.868***
Singapore	Count	13	7	6	
	Mean	15%	16%	13%	-1.65
	Median	14%	17%	13%	1.541**
Total	Count	159	71	88	
	Mean	71%	93%	54%	-3.303***
	Median	44%	50%	39%	1.759***

Notes. Sample of 159 observations by 45 banks in four Asian countries (China, Hong Kong, the Philippines, and Singapore) two years before and after FVA adoption. The ECOE is derived from $P_t = [E_t(EPS_{t+2}) - E_t(EPS_{t+1}) + r_e \times E_t(EPS_{t+1}) \times E_t(POUT_{t+1})]/r_e$, where P_t is the close price of a company's share traded at the last day of the year t; $E_t(EPS_{t+2})$ and $E_t(EPS_{t+1})$ are the medians of earnings per share estimate for the years $t + 2$ and $t + 1$ in the database three monthly data cycles ago; $E_t(POUT_{t+1})$ represents the dividends expected to be paid by the company during the next 12 months; and r_e is the ECOE. Univariate t-test (KS-test) for the mean (median) measure of ECOE between the observations before and after FVA adoption. *** and ** denote significance at the levels of 1% and 5%.

Table 3 also presents statistics and univariate analysis of ECOE for the period before and after FVA adoption for the total sample and the four Asian countries individually. The mean (medium) of the ECOE for the total sample is 93% (50%) before FVA adoption and 54% (39%) after FVA adoption. In addition, the mean (median) measure for the four countries ranges from 16% (17%) to 214% (183%) before FVA adoption and from 13% (13%) to 113% (105%) after FVA adoption. All the univariate tests show that the ECOE significantly decreases after FVA adoption for our sample banks (except the mean measure for Singapore), which indicates that there is a considerable improvement in information transparency as a result of adopting FVA.

Table 4 reports the empirical evidence for the influence of the FVA application on information transparency by conducting several regression models on the ECOE. First, to clearly identify the effects of FVA adoption, the authors test the IFRS dummy variable for three general firm control variables in regression model 1.1. The results demonstrate that the ECOE significantly decreases after the FVA application. That means that FVA adoption does have an effect on the improvement of information transparency of firms and thus reduces the ECOE requested by outsiders. In addition, the larger the market capitalization of sample banks, the lower the ECOE required by investors (-0.00038% rounded off to -0.000 in Table 4).

Table 4

Multiple Regression Results of the ECOE

	Model 1.1	Model 1.2	Model 1.3	Model 1.4	Model 1.5
Intercept	1.577^{***}	1.369^{***}	1.546^{***}	2.731^{***}	3.460^{***}
FVA	-0.360^{***}	-0.340^{***}	-0.409^{***}	-0.391^{***}	-0.405^{***}
ORI			-0.661^{***}		
ANTISDI				-1.750^{***}	
NEWS					-0.472^{***}
IMPL		0.000	0.000	0.000	0.000
TL		-0.000	-0.000	-0.000	-0.000
CAPR		0.018	0.024	-0.001	0.024
SIZE	-0.000^{***}	-0.000^{***}	-0.000^{**}	-0.000^{**}	-0.000^{***}
BETA	-0.433	-0.448	-0.362	-0.430	-0.362
LEV	-0.170	-0.140	-0.191	-0.122	-0.170
Adj. R^2 (%)	11.9	11.0	31.6	64.4	28.9
F-statistic	6.321^{***}	3.785^{***}	10.126^{***}	36.744^{***}	9.029^{***}

Notes. Sample of 159 observations by 45 banks in four Asian countries (China, Hong Kong, the Philippines, and Singapore) two years before and after FVA adoption. The ECOE is derived from $P_t = [E_t(EPS_{t+2}) - E_t(EPS_{t+1}) + r_e \times E_t(EPS_{t+1}) \times E_t(POUT_{t+1})]/r_e$, where P_t is the close price of a company's share traded at the last day of the year t; $E_t(EPS_{t+2})$ and $E_t(EPS_{t+1})$ are the medians of earnings per share estimate for the years $t + 2$ and $t + 1$ in the database three monthly data cycles ago; $E_t(POUT_{t+1})$ represents the dividends expected to be paid by the company during the next 12 months; and r_e is the ECOE. See Table 2 for the definitions of independent variables. Two-tailed Pearson test. *** and ** denote significance at the levels of 1% and 5%.

Second, considering that some particular features of the banking industry might have impacts on the ECOE, the authors further add three explanatory variables regarding the specific bank characteristics to regression model 1.2. The results confirm the strong FVA adoption effects on the information transparency. However, those specific bank characteristics (*IMPL*, *TL*, and *CAPR*) neither have an influence on the FVA adoption effects nor have strong relationships with the banks' ECOE. For firm variables, only the size effect still works.

Third, the authors explore whether or not the adoption of FVA still has an impact on the ECOE after controlling the legal variables through models 1.3-1.5. Since three legal variables (*ORI*, *ANTISDI*, and *NEWS*) have positive and strong correlations, the authors put the variables into our regression models separately. The figures provide empirical evidence that given any legal or extralegal environment, the adoption of FVA still has a significant positive influence in terms of enhancing the information transparency. Moreover, the results in models 1.3-1.5 powerfully suggest that the lower the ECOE is asked for those banks from countries with an English legal origin, the stronger the *ANTISDI* and the higher the *NEWS*.

From Table 5, the authors explain the FVA adoption effects and investigate whether or not the adoption effects change after controlling for those legal, bank, and firm variables. In Table 5, the authors intend to further identify which variables have their own effects on improving information transparency based on the FVA adoption event. Therefore, the authors rematch their sample banks and obtain 37 observations that remain with the data of ECOE two years before and after the FVA adoption. Then the means of ECOE for both periods are calculated and defined as *ECOEpre* and *ECOEpost*. The difference between *ECOEpre* and *ECOEpost* is measured as the dependent variable, which is the incremental cost of equity ($\Delta ECOE = REpost - REpre$). $\Delta ECOE$ is expected to be negative for the decline in the cost of equity. Since *ECOEpre* may have an important influence on the difference, the authors include *ECOEpre* in their regression as a control variable.

Table 5

Multiple Regression Results of the Incremental ECOE (△ECOE)

	Model 1.6	Model 1.7	Model 1.8
Intercept	0.081	0.331*	0.354
ORI_E	-0.082**		
ANTISDI		-0.261**	
NEWS			-0.065**
IMPL	0.000	0.000	0.000
TL	0.000	0.000	0.000
CAPR	0.002	0.001	0.002
SIZE	0.000	0.000	0.000
BETA	-0.028	-0.063	-0.031
LEV	0.128	0.101	0.130
REpre	-0.583***	-0.634***	-0.583***
Adj. R^2 (%)	97.2	97.6	97.3
F-statistic	137.179***	159.779***	140.097***

Notes. Sample of 37 banks in four Asian countries (China, Hong Kong, the Philippines, and Singapore) two years before and after FVA adoption. The ECOE is derived from $P_t = [E_t(EPS_{t+2}) - E_t(EPS_{t+1}) + r_e \times E_t(EPS_{t+1}) \times E_t(POUT_{t+1})]/r_e$, where P_t is the close price of a company's share traded at the last day of the year t; $E_t(EPS_{t+2})$ and $E_t(EPS_{t+1})$ are the medians of earnings per share estimate for the years $t + 2$ and $t + 1$ in the database three monthly data cycles ago; $E_t(POUT_{t+1})$ represents the dividends expected to be paid by the company during the next 12 months; and r_e is the ECOE. The means of ECOE for both periods are calculated and defined as *ECOEpre* and *ECOEpost*. The difference between *ECOEpre* and *ECOEpost* is measured as the dependent variable, which is the incremental costs of equity ($\Delta ECOE = REpost - REpre$). See Table 2 for the definitions of independent variables. Two-tailed test. ***, **, and * denote significance at the levels of 1%, 5%, and 10%.

The results for model 1.6 indicate that when sample banks are from countries with an English legal origin, the ECOE significantly decreases after the FVA adoption. Model 1.7 displays statistical significance in that the higher the score for the anti-self dealing index of banks, the larger the decline in the ECOE. Model 1.8 also shows that the ECOE significantly falls by 6.5% for a 1-point increase in *NEWS*. Such experimental evidence interestingly points out that FVA adoption still has an effect on the improvement in the accounting quality of the banks in the countries with good legal protection, and the stronger the legal or extra-legal mechanisms, the better the FVA adoption effects. However, we find that only legal variables have explanatory power for the change in the estimated cost of equity due to the application of fair value accounting. All variables for specific firm and bank characteristics have no impact in terms of enhancing the information transparency through the adoption of IFRS in our research samples.

Analysis of Earnings Management

Table 6 presents summary statistics of LLP for the entire sample and a breakdown for the four countries (China, Hong Kong, the Philippines, and Singapore). There are 186 observations in the full sample with 59 observations in China, 47 observations in Hong Kong, 64 observations in the Philippines, and 16 observations in Singapore. The mean and median of the LLP are 0.43% and 0.26% respectively. The mean of the LLP in the Philippines is 0.55%, the highest of the four countries. On the contrary, Singapore has the lowest mean (median) of the LLP, which is 0.13% (0.09%).

Table 6

LLP

		Entire period	Before adoption	After adoption	Univariate test
China	Count	59	25	34	
	Mean	0.35%	0.35%	0.34%	-0.051
	Median	0.30%	0.33%	0.27%	0.531
Hong Kong	Count	47	24	23	
	Mean	0.46%	0.74%	0.18%	-1.459
	Median	0.15%	0.20%	0.09%	1.248*
The Philippines	Count	64	32	32	
	Mean	0.55%	0.46%	0.64%	1.094
	Median	0.38%	0.36%	0.39%	0.500
Singapore	Count	16	8	8	
	Mean	0.13%	0.26%	0.01%	-2.747**
	Median	0.09%	0.22%	0.03%	1.500**
Total	Count	186	89	97	
	Mean	0.43%	0.49%	0.37%	-0.952
	Median	0.26%	0.30%	0.24%	1.024

Notes. Sample of 186 observations by 49 banks in four Asian countries (China, Hong Kong, the Philippines, and Singapore) two years before and after FVA adoption. The LLP is obtained from Thomson Financial Database. Univariate *t*-test (KS-test) for the mean (median) measure of ECOE between the observations before and after FVA adoption. ** and * denote significance at the levels of 5% and 10%.

Table 6 also provides the descriptive statistics and univariate analysis of LLP for the period before and after the adoption of FVA for the total sample and the four Asian countries. The mean (medium) measure of the LLP for the overall sample is 0.49% (0.30%) before the FVA adoption and 0.37% (0.24%) after the FVA adoption. In addition, the mean measure of LLP for Singapore (0.22%) is the lowest one, but Hong Kong (0.20%) has the lowest level for the median measure of LLP before adoption. After adoption, the mean (median) measures for the four countries rank from the lowest 0.01% (0.03%) for Singapore to the highest 0.64% (0.39%)

for the Philippines. Univariate tests show that the banks in Singapore and Hong Kong significantly reduce their provisions for bad debts after FVA adoption.

Table 7
Multiple Regression Results of the Relationship Between LLP and EBPT

	Model 2.1	Model 2.2	Model 2.3	Model 2.4	Model 2.5	Model 2.6
Intercept	-0.002***	-0.010***	-0.010***	-0.009**	-0.008**	0.000
EBPT	0.391***	0.420***	0.421***	0.430***	0.425***	0.429***
*EBPT*FVA*	-0.060	-0.057	-0.053	-0.062*	-0.063*	-0.061*
ORI				-0.003***		
ANTISDI					-0.004**	
NEWS						-0.002***
IMPL			0.000	0.000	0.000	0.000
TL			-0.000	-0.000	-0.000	-0.000
CAPR			-0.000	-0.000	-0.000	-0.000
SIZE		-0.000	-0.000	-0.000	-0.000	-0.000
BETA		0.002	0.002	0.002	0.003*	0.002
LEV		0.006	0.006	0.005	0.006	0.005
Adj. R^2 (%)	56.7	57.6	57.2	59.6	59.0	59.5
F-statistic	122.248***	51.206***	31.897***	31.276***	30.615***	31.158***

Notes. Sample of 186 observations by 49 banks in four Asian countries (China, Hong Kong, the Philippines, and Singapore) two years before and after FVA adoption. The LLP is obtained from Thomson Financial database. See Table 2 for the definitions of independent variables. Two-tailed test. ***, **, and * denote significance at the levels of 1%, 5%, and 10%.

Following the income smoothing hypothesis (Beatty et al., 1995; Docking et al., 1997; Laeven & Majnoni, 2003; Shrieves & Dahl, 2003; William & Zhu, 2006; Le, 2008), Table 7 reports the experimental results for the LLP measures to investigate the possibility of earnings management on the part of sample banks due to the FVA adoption by testing the relationship between the LLP and the EBPT. Firstly, from models 2.1-2.3, the authors find a consistently significantly positive relationship between LLP and EBPT regardless of whether control variables are added or not, which supports the hypothesis of earnings management.

Secondly, to investigate the IFRS adoption effects on the relationship between LLP and the banks' EBPT, the authors add in a measure which is the EBPT multiplied by the dummy FVA. As a result, the strong positive link between EBPT and LLP becomes blurred after the FVA adoption (*EBPT*FVA*). This finding proves that the FVA adoption does have an effect in terms of reducing the likelihood of the banks' earning management and thus benefits the accounting quality.

Thirdly, the authors explore whether or not the FVA adoption effects on the relationship between LLP and EBPT are still sustained after controlling the legal variables through models 2.4-2.6. The results show that the overall LLP still significantly increases as a result of the increase in EBPT regardless of what kind of legal protection environment the sample banks there face. However, after controlling those legal/extra-legal variables, the authors find that the positive relationship between LLP and EBPT not only disappears, but even becomes slightly negative after the FVA adoption.

In addition, models 2.4-2.6 provide experimental data to show that the sampled banks, due to their good legal and extra-legal systems in terms of their legal origin, private enforcement, and pressure of public opinion, are inclined to have lower levels of LLP. The higher market risk (*BETA*) is related to the greater LLP. Unfortunately, the authors can still neither find evidence regarding the relationship between bank characteristics and LLP nor evidence regarding the effects of those characteristics of the relationship between LLP and EBPT in relation to the income smoothing hypothesis.

Conclusions

This paper aims to examine the effect of the adoption of FVA on the level of information transparency and the possibility of earnings management. First of all, the results confirm that the ECOE extensively declines after the adoption of FVA, which reflects the enhancement of information transparency.

Moreover, this paper has shown that a significant positive association between EBPT and LLP does exist, but the EBPT after the adoption of FVA (*EBPT*FVA*) loses its link with the LLP. The facts confirm the income smoothing hypothesis and prove that the likelihood of banks' earnings management becomes smaller after the adoption of FVA.

Finally, the results of this paper show that legal/extra-legal institutions (legal origin, the anti-self dealing index, and news circulation) can explain the degree of information transparency that appears in the decrease in the ECOE after IFRS adoption. In addition, the evidence indicates that after controlling those legal/extra-legal institutions, our sample banks are liable to appropriate smaller LLP when EBPT increases. Multiple regression analysis also reveals that banks from countries with an English legal origin, with higher scores for the anti-self dealing index, and with larger percentage shares of newspaper circulation significantly provide smaller LLP. However, this paper cannot find evidence of the influence of specific banking characteristics on the progress of accounting quality due to the adoption of FVA.

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Journal of Modern Accounting and Auditing, ISSN 1548-6583
June 2013, Vol. 9, No. 6, 777-789

Asymmetry in Value Relevance of Environmental Performance (EP) Information: Contingency Effects of Size and Industry

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Contemporary research documents a positive but weak price premium from environmental performance (EP). The specific circumstances of pricing EP of large and small companies and in polluting and clean industries have not, however, been investigated. This study predicts that financial markets price EP beyond financial fundamentals differently, depending on company size and the environmental risk of the industry and provides evidence relying on a set of the Sweden Stock Market 300 (SIX 300) companies listed on the Stockholm Stock Exchange (OMX Stockholm). Applying a value relevance model, the average results are in line with previous findings that EP adds value beyond the book value of equity and earnings. The asymmetry in EP is, however, driven by company size and the environmental risk of the industry. This study suggests that large companies in low-risk industries obtain strong price premiums from being environmental industry leaders. In contrast, small companies and also companies in high-risk industries do not necessarily accrue the same market benefits.

Keywords: environmental performance (EP), market premium, industry risk, size, moderated regression analysis (MRA)

Introduction

Within the academic literature, there has been a stream of research that demonstrates a universal relation between corporate environmental performance (EP) and the financial performance of companies, employing a variety of theoretical frames and methodologies (Orlitzky, Schmidt, & Rynes, 2003; Margolis, Elfenbein, & Walsh, 2007). The evidence on that “it pays to be green” has, however, been weak at best. This paper hypothesizes that financial markets price EP differently across large and small companies and that the industry context moderates the relation. Ultimately, these specific contingencies create an information asymmetry in financial markets and provide an explanation for the mixed universal relations found in previous research.

Three sets of theories support the phenomenon of the asymmetry. First, the theory of market under-reaction (Beaver, 2002; Hong, Lim, & Stein, 2000; Lang & Lundholm, 1996) predicts that information

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about large companies gets out more quickly to investors to lower costs and that financial analysts follow large companies more closely than they monitor small companies. Second, the socio-political theory (Cormier & Magnan, 2003; Patten, 2002) posits that large companies and companies in high-impact, environmentally sensitive industries are more transparent about their environmental strategies and spend more on environmental management due to relatively high political, regulatory, and stakeholder pressures and more frequent environmental incidents[1]. Finally, the resource-based theory (Clarkson, Richardson, & Vasvari, 2011; Hart, 1995) proposes that not all companies have resources to benefit from proactive environmental management[2]. Large companies with greater financial resources and management capabilities relative to small companies can enhance their financial performance, while small companies lack resources and capabilities to realise economies of scale. Voluntary environmental decisions of companies in environmentally regulated industries are costly at the margin, while there is more room for voluntary initiatives in low-risk industries to a lower cost. Taken together, these alternative theories predict that EP can be priced differently in financial markets depending on company size and industry risk.

Drawing upon these theories, the paper investigates how differences in the stringency of environmental policy and corresponding environmental risk of the industry and company size drive the asymmetry of pricing EP on the Stockholm Stock Exchange (OMX Stockholm) during the period of 2005-2008. Because of a coherent, stable business cycle in the period of 2005-2008, the results are not affected by time-specific events and significant changes in the company's environment. EP estimates are used to measure the outcome of environmental management at a company level. Data are collected from the Global Engagement Services (GES) Risk Rating database which is derived from multiple sources and is not dependent on corporate self-reporting.

The authors find evidence that the relation between market premium and EP is positive and stronger for large companies in industries with low environmental risk than for large companies in medium-risk industries. In contrast, there is a strong, negative relation for large companies in high-risk industries with tighter environmental policies. Consequently, financial markets impose risk premiums when pricing EP in polluting and more regulated industries or ignore such effects at best. The findings are consistent with the resource-based theory that proactive environmental management beyond compliance is costly for companies in high-risk industries. An excess compliance can be interpreted as an over-investment by the market. Moreover, the relation does not hold for small companies. The finding suggests that market under-reaction and financial constrains drive the results for small companies. The conclusions are strengthened by the fact that financial analysts follow more closely large than small companies and also companies in high-risk industries. Overall, this paper contributes to earlier research by providing theoretical arguments and empirical evidence that EP is priced differently in financial markets.

The remainder of the paper is organized as follows. The next section presents the prior research and hypothesis. The following sections discuss data analysis and results. The concluding discussion summarizes the findings and implications of the study.

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[1] High environmental risk industries have a direct and significant environmental impact. Examples are pulp and paper, chemicals, oil and gas, metals and mining, and utilities (Clarkson, Li, Richardson, & Vasvari, 2008; Niskala & Pretes, 1995). High environmental risk industries are often used interchangeably with "environmentally sensitive industries", "polluting industries", "high-impact industries", "environmentally regulated industries", and "high-concern industries".

[2] Proactive environmental management or corporate eco-efficiency is typically understood as improvements in routines and operations of a company in order to reduce its environmental impact and gain economic benefits.

Related Research and Hypothesis Development

In a traditional financial market setting, scholars suggest that environmental management or corporate eco-efficiency is embedded in the company's internal processes to improve operating efficiency and profitability. The extra-financial value of environmental management should result in a lower risk and a higher discounted market value (MV) for the company. The studies by Sinkin, Wright, and Burnett (2008), Clarkson et al. (2011), and Guenster, Derwall, Bauer, and Koedijk (2011) find that measures of EP (whether eco-efficiency or improvements in pollution propensity) relate positively to operating performance and MV. Based on the studies, the authors get the impression that EP is rewarded in financial markets.

On the other hand, prior research on the determinants of EP and disclosures suggests that company size and industry type play a role in a company's decision to voluntarily disclose environment-related information and to invest in environmental management. In particular, Brammer and Pavelin (2006a; 2006b), Clarkson et al. (2008), Tagesson, Blank, Broberg, and Collin (2009), Semenova (2010), and Cormier and Magnan (2003) found that in industries with severe environmental policy, companies disclose more environmental information and strive to be leaders in environmental management. Further, Artiach, Lee, Nelson, and Walker (2010), Tagesson et al. (2009), Brammer and Pavelin (2006b), and Elsayed (2006) found that the effect of company size is a significant determinant of environmental disclosures and EP. Consequently, industry context and company size can be considered as important contingent factors for EP. This is consistent with the prediction of socio-political school and the resource-based theory.

Past research has not demonstrated how the strength or magnitude, and direction of the relation between EP and market premium can vary at different levels of the industry risk (polluting versus clean) and company size (large versus small). For example, Brammer and Pavelin (2006a) found that EP has a heterogeneous and mixed reputational effect on financial performance across industries. Based on the same approach of testing interaction terms between industry dummy variables and EP scores, Elsayed and Paton (2005) found no industry differences in the impact of EP on MV.

Small companies are under-researched in this type of studies because of their relatively low level of transparency and consequent lack of available data. The majority of research investigates large companies and includes company size as a proxy for the company's overall disclosure level and corporate transparency with investors and other stakeholders (Margolis et al., 2007; Lang & Lundholm, 1996). In a survey by Aragon-Correa, Hurtado-Torres, Sharma, and Garcia-Morales (2008), the perception is that small companies show the same positive relations between EP and operating performance. However, environmental practices of small companies are seldom noticed in the financial market research. Such an investigation has a potential to provide result for an important set of small companies and deepens our understanding of factors that influence how EP is priced in financial markets.

The departure for a hypothesis in this paper is that large companies in polluting industries with high environmental risk encounter a higher stakeholder pressure and consequently demonstrate a higher EP than companies operating in industries with low environmental risk. The resource-based theory predicts that small companies on average do not voluntarily invest in environmental management to the same extent as large companies do. When large companies in regulated industries push their EP beyond average compliance, environmental management becomes costly and financial markets interpret such investments as over-investments with a potential to destroy short-term shareholder value. Environmental leaders in high-risk industries, such as chemicals and pulp and paper, are predicted to trade at a discount. In low-risk industries with limited environmental regulation and less stakeholder intervention, EP of the average company is relatively low. Under these industry conditions, environmental leaders can improve their EP to a lower cost with low risk for over-compliance. In industries with low direct environmental risk, such as banks and insurance, environmental leaders tend to trade at a premium. These arguments lead to the following hypothesis (in null form):

H_0: The relation between EP and MV is not contingent on the environmental risk of the industry and company size.

Research Design

Research Model

The Ohlson's (1995) price-level model provides a framework that identifies how MV relates to accounting and non-accounting EP information and can be expressed as follows:

$$MV_{i,t} = \beta_0 + \beta_1 BV_{i,t} + \beta_2 NI_{i,t} + \beta_3 EP_{i,t} + u_i + e_{i,t} \tag{1}$$

where $MV_{i,t}$ is a one-quarter lagged equity market value that gives financial markets plenty of time to internalise performance expectations. The opening book value of equity is $BV_{i,t}$. The net income of the company is $NI_{i,t}$. Environmental performance is $EP_{i,t}$. All accounting and market-based variables are scaled by a one-quarter lagged total assets $TA_{i,t}$.

The study accounts for potential endogeneity of EP by using panel data approach and controlling for the influence of omitted, constant company-specific and time-specific factors. The term u_i captures random variables related to unobserved company-specific effects. The price association regression includes clustered standard errors as suggested by Petersen (2009).

In order to test the hypothesis H_0 of how the effect of EP on MV varies across different industries and company categories, this paper makes use of moderated regression analysis (MRA) (Aiken & West, 1991). In applying MRA, Equation (1) is modified by including proxies for size and industry risk and interactions among EP, industry risk, and company size:

$$\begin{aligned} MV_{i,t} = {} & \beta_0 + \beta_1 BV_{i,t} + \beta_2 NI_{i,t} + \beta_3 EP_{i,t} + \beta_4 IR_{i,t} + \beta_5 DSIZE_{i,t} + \beta_6 EP*IR_{i,t} \\ & + \beta_7 EP*DSIZE_{i,t} + \beta_8 IR*DSIZE_{i,t} + \beta_9 EP*IR*DSIZE_{i,t} + u_i + e_{i,t} \end{aligned} \tag{2}$$

where $IR_{i,t}$ denotes the moderator variable of environmental industry risk. IR is a continuous variable which measures the environmental risk of the industry in which a company operates. The moderating variable of company size is a dummy, $DSIZE_{i,t}$, which indicates whether a company belongs to the group of large-sized or small-sized companies (as reflected in the Sweden Stock Market 300 (SIX 300) Index[3]). The multiplicative term $EP*IR*DSIZE_{i,t}$ encompasses the three-way interaction effect and represents the dependency of $EP_{i,t}$ on $IR_{i,t}$ and $DSIZE_{i,t}$. The slope β_9 aims to measure the interaction effect.

Data and Sample

The empirical models are tested by using environmental data from the GES Risk Rating database. EP is evaluated based on a wide number of criteria, including eco- and energy-efficiency of operations, use of

[3] The SIX 300 index represents the market performance of the 300 large, medium, and small stocks on OMX Stockholm. Market capitalization is more used by investors to determine a company's size as opposed to sales or total assets measures.

recycled materials, and the development of products with environmental benefits. The study also considers general environmental risk that reflects the environmental risk of the company's industry. Pollution-intensive sectors, for example, metals and mining, pulp and paper, get relatively higher scores of environmental industry risk. GES environmental rating data show high convergent validity with other third-party assessments of EP and risk in the United States (US) universe (Semenova, 2010). MV, common shareholders' equity, net income, and the book value of assets are retrieved from the Thomson Datastream database.

The sample consists of 224 SIX 300 companies listed on OMX Stockholm, which was rated from 2005 to 2008. Table 1 shows industry and market capitalization of the companies in the sample.

Table 1

Distribution of Companies Across Industries and Market Capitalizations

Panel A: Industry classified companies based on the global industry classification standard	
Industry	Frequency (%)
Diversified financials	11.5
IT consulting & services	11.0
Commercial services & supplies	7.9
Machinery	7.0
Biotechnology	6.6
Real estate	6.2
Communications equipment	3.1
Electrical equipment	3.1
Health care equipment & supplies	3.1
Paper & forest products	3.1
Specialty retail	3.1
Building products	2.6
Banks	2.2
Electronic equipment & instruments	2.2
Media	2.2
Software	2.2
Construction & engineering	1.8
Household durables	1.8
Trading companies & distributors	1.8
Industrial conglomerates	1.3
Marine	1.3
Metals & mining	1.3
Pharmaceuticals	1.3
Textiles, apparel, & luxury goods	1.3
Others (less than 1%)	11.0
Total	100
Panel B: Industry-risk classified companies based on the GES risk rating	
Industry risk	Frequency (%)
High (rated 5, 6)	23.5
Medium (rated 2, 3, 4)	31.7
Low (rated 0, 1)	44.8
Total	100
Panel C: Market capitalization classified companies based on the SIX 300 stock market index	
Capitalization	Frequency (%)
Large	54.7
Small	45.3
Total	100

Table 2 presents means, standard deviations, and simple correlations for main variables. Further, the mean statistics are given for the sub-samples of companies that are defined by using categorical variables, such as market capitalization and industry risk.

Table 2
Descriptive Statistics and Correlation Coefficients of Key Variables

Variable	*EP*	*IR*	*MV*	*BV*	*NI*	*TA*
Panel A: Descriptive statistics of full sample of 224 companies						
Mean	1.50	2.43	17,957,342.34	8,191,218.60	374,788.69	70,061,550.74
Median	1.00	2.00	1,660,192.00	624,700.00	20,900.00	1,488,950.00
Std. deviation	1.71	2.07	56,874,160.24	28,218,368.28	1,818,525.43	424,541,778.84
Skewness	0.81	0.28	6.42	7.35	10.63	8.91
Kurtosis	-0.51	-1.36	52.10	73.35	172.40	93.58
Minimum	0	0	23,664	11,200	-7,821,000	22,284
Maximum	6	6	649,418,200	403,858,900	35,393,010	6,361,424,000
Panel B: Mean statistics of sub-samples divided by company size and industry risk						
Large-sized high industry risk	3.29	5.38	16.59	15.54	12.58	16.53
Large-sized low industry risk	1.13	0.42	15.73	14.69	11.82	15.82
Small-sized high industry risk	1.29	5.24	13.23	12.35	9.07	13.17
Small-sized low industry risk	0.40	0.44	12.88	12.39	8.95	13.16
Panel C**:** Person correlations of full sample of 224 companies						
EP	1.00					
IR	0.46 (0.00)	1.00				
MV	0.55 (0.00)	0.18 (0.00)	1.00			
BV	0.52 (0.00)	0.11 (0.00)	0.90 (0.00)	1.00		
NI	0.50 (0.00)	0.17 (0.00)	0.90 (0.00)	0.89 (0.00)	1.00	

Notes. 896 company-year observations. Panel A reports the descriptive cross-sectional statistics of the sample. The sample consists of 224 companies included in the stock market index SIX 300 for the Stockholm Stock Exchange. The research period of environmental observations is between November 2005 and June 2008. Four annual environmental industry risk and EP ratings are used. The research period of financial observations is between the third quarter of 2005 and the third quarter of 2008. Panel B reports mean statistics of main variables when companies are divided into four groups based on company size and industry risk. Non-normality associated with financial variables is alleviated by taking logarithm (as in Guenster et al., 2011). Panel C provides Pearson correlation coefficients among variables in the model using the sample of 224 companies (*P* values in parentheses, two-tailed). Non-normality associated with financial variables is alleviated by taking logarithm (as in Guenster et al., 2011).

Results

Univariate Test

Univariate tests provide an illustration of whether company size (large versus small) and industry risk (polluting versus clean) relate to company's environmental, financial, and transparency characteristics. To do so, Table 3 provides comparisons of characteristics of companies by breaking the final sample by company size and industry risk. This leads to the two sub-samples of the 488 large-sized company-year and 404 small-sized company-year observations (Panel A) and the two sub-samples of the 200 high industry risk company-year and 416 low industry risk observations (Panel B). The two-tailed *t*-test is used to compare differences in the mean of the following characteristics: EP, transparency, MV, net income, shareholders equity, and total assets.

Table 3

Univariate Test

	EP	Analysts following	Frequency of forecast revisions	Environmental policy	Environmental reporting	*MV*	*BV*	*NI*	*TA*
Panel A: Size differences									
Large-sized: Mean	2.11	0.69	12.67	2.76	1.38	15.90	14.87	11.92	15.88
Small-sized: Mean	0.64	0.36	4.30	1.25	0.62	13.08	12.33	9.10	13.00
Mean diff.	1.46	0.33	8.37	1.51	0.76	2.82	2.54	2.82	2.88
t-stat.	12.66***	10.49***	9.19***	11.52***	15.51***	29.09***	24.12***	21.63***	24.64***
Panel B: Industry risk differences									
High risk: Mean	2.73	0.68	13.95	3.72	1.60	15.44	14.41	11.63	15.34
Low risk: Mean	0.82	0.45	6.78	1.31	0.72	14.35	13.48	10.54	14.42
Mean diff.	1.91	0.23	7.17	2.41	0.88	1.09	0.92	1.09	0.92
t-stat.	13.68***	5.43***	5.86***	16.29***	14.52***	6.20***	5.36***	5.41***	4.74***

Notes. Panel A reports the mean statistics for the high and low company size sub-samples including 488 and 404 company-year observations correspondently and the independent samples' *t*-test, assuming equal variances in the two sub-samples. Non-normality associated with financial variables is alleviated by taking logarithm. Significance at the levels of 1%, 5%, and 10% is indicated by ***, **, and * respectively (two-tailed tests). Panel B reports the mean statistics for the high and low industry risk sub-samples including 200 and 416 company-year observations correspondently and the independent samples' *t*-test, assuming equal variances in the two sub-samples. Non-normality associated with financial variables is alleviated by taking logarithm. Significance at the level of 1% is indicated by *** (two-tailed tests).

In order to measure visibility and transparency, this paper introduces an additional analysis showing that analyst coverage associates positively with disclosure levels. Based on prior research (Lang & Lundholm, 1993), two measures of analyst coverage are used in this study. The authors utilize a binary variable that indicates if analysts follow a company and a variable of frequency of forecast revisions defined as the number of analysts' estimates issued on a company at the end of the year. Data are obtained from the Institutional Brokers' Estimate System (IBES) database of earnings forecasts (2005-2008). The authors also collect GES data on environmental policy that captures the general environmental profile of a company through environmental reporting, strategies, and programmes. The variable is used as a proxy for environmental transparency.

The *t*-tests indicate that large companies differ from small companies on all factors. Companies in high-risk industries also vary from those in low-risk industries. In particular, large and high-risk companies show relatively higher levels of EP, analysts' coverage, environmental reporting, environmental policy, and profitability. A noteworthy result is that financial analysts monitor the performance of companies in high-risk industries more closely than in low-risk industries. Overall, the result supports the arguments of the socio-political theory that external pressures influence the level of EP and disclosures for large companies and companies in high-risk industries.

Taken together, the univariate test suggests that specific characteristics related to size and industry risk explain variations in the levels of EP, corporate transparency, analyst following, and financial performance.

Multivariate Tests on Full Sample

Table 4 provides the results of the regression models based on Equations (1) and (2). In MRA, the relation between MV (outcome variable) and EP (predictor variable) is seen as a function of size and industry risk (moderating variables). The parameters of regressions are computed by using the fixed-effect panel data model which is the appropriate choice for our data based on the results of the Lagrangian multiplier test and the Hausman test (Cameron & Trivedi, 2005). Because the fixed-effect model allows the unobservable random factor, u_i, to be potentially correlated with our main predictors of MV and permits the identification of the marginal effect for time-varying variables, the model does not incorporate control variables.

Table 4

Multivariate Tests

Variable	Linear panel data fixed effects regressions								
	1/VIF	Full sample	1/VIF	Full sample	Large-sized	Small-sized	Large-sized	Large-sized	Large-sized
$BV_{i,t}$	0.93	0.64	0.88	0.63	0.76	0.73	0.77	0.80	0.85
		(2.72)		(2.68)	(2.14)	(2.89)	(2.13)	(2.30)	(2.42)
$NI_{i,t}$	0.99	4.23	0.96	4.50	5.97	3.87	5.49	5.81	6.10
		(2.84)		(3.02)	(2.49)	(2.04)	(2.32)	(2.44)	(2.62)
$EP_{i,t}$	0.94	0.06	0.18	0.04					
		(2.30)		(1.27)					
$EP*DSIZE_{i,t}$			0.21	0.02	0.08	-0.06		0.07	0.05
				(0.45)	(2.37)	(-1.69)		(2.24)	(1.45)
$IR*DSIZE_{i,t}$							0.07	0.04	0.01
							(1.73)	(1.23)	(0.16)
$EP*IR*DSIZE_{i,t}$									-0.04
(H_0)									(-2.58)
Intercept		0.55		0.62	0.42	0.53	0.43	0.58	0.64
		(4.59)		(5.38)	(2.51)	(3.61)	(2.41)	(4.02)	(4.22)
Adj. R^2		0.13		0.13	0.12	0.12	0.17	0.13	0.16
LM (*BP*)		124.07		80.53	16.04	34.13	13.49	17.31	17.87
		($p < 0.01$)		($p < 0.01$)	($p < 0.01$)	($p < 0.01$)	($p < 0.01$)	($p < 0.01$)	($p < 0.01$)
Hausman		77.28		16.68	74.28	22.72	58.63	71.83	70.47
		($p < 0.01$)		($p < 0.01$)	($p < 0.01$)	($p < 0.01$)	($p < 0.01$)	($p < 0.01$)	($p < 0.01$)

Notes. Table 4 reports coefficient estimates from panel regressions of MV on accounting variables and EP interacted with a continuous variable (*IR*; GES general environmental risk of industry rating) and a categorical variable (*DSIZE*; market capitalization based on SIX 300 Index). Company size is defined as either large- or small-sized companies. All financial variables are scaled by lagged total assets. VIF, variance inflation factor, does not indicate problems of multi-collinearity among accounting variables. First, full sample contains 224 SIX 300 companies constituting 896 company-year observations. The second sub-sample contains 122 large-sized companies constituting 488 company-year observations. The third sub-sample contains 101 small-sized companies constituting 404 company-year observations. Table 4 reports fixed-effect (within) ordinary least square (OLS) coefficients with clustered *t*-statistic (in parentheses; as in Petersen, 2009; Cameron & Trivedi, 2005).

To start with, the third column of Table 4 reports the results of the tests for the main effects of EP on MV. EP is significantly positively related to MV (β_3 = 0.06, *t*-value = 2.30). Thus, the average results of this study are in line with previous findings that EP adds value beyond financial fundamentals, such as the book value of equity and earnings.

The fifth column of Table 4 provides the results of the tests for the size effect by including the interaction between a continuous variable, EP, and a categorical variable, *DSIZE*. As reported, there is no evidence that large companies have higher market premium relative to small companies (the coefficient on *EP*DSIZE* is insignificant). However, high collinearity between *EP* and *EP*DSIZE* (i.e., a low proportion of EP and *EP*DSIZE* variables' variance is independent) has biased this result.

Next, the test for size interaction effect is run by splitting the sample into the two sub-samples based on a categorical variable, *DSIZE*. The fixed-effect estimates of EP are significantly positive for large companies (β_7 = 0.08, *t*-value = 2.37) and significantly negative for small companies (β_7 = -0.06, *t*-value = -1.69).

Consistent with the theory of market under-reaction, the magnitude of parameters of accounting-based variables is observed to be lower for small companies. Thus, the relation is positive for large-sized companies, but negative for small-sized companies.

Compared with conflicting arguments of earlier studies that there is a positive relation between proactive environmental strategies and operating performance (Aragon-Correa et al., 2008; Cambra-Fierro, Hart, & Polo-Redonto, 2008) of small companies or that most anomalies are confined to small companies (Fama & French, 2008), the outcome of this paper is that financial markets are unable to price EP of small companies due to their low transparency and high financial constrains. The markets are efficient only to price large companies and assign a premium to leading environmental performers. The evidence is consistent with the theory of market under-reaction and the resource-based theory of the firm. The study further examines the industry effect on the relation between EP and MV in a large companies' sample.

The industry effect is studied by the analysis of the three-way interaction term in Equation (2) and constructing conditional-effect plots at different levels of industry risk to be able to interpret the signs of the interactions. In column 10 of Table 4, the estimated interaction term is significantly negative (β_9 = -0.04, *t*-value = -2.58), suggesting that the relation between EP and MV is modified by industry risk and company size.

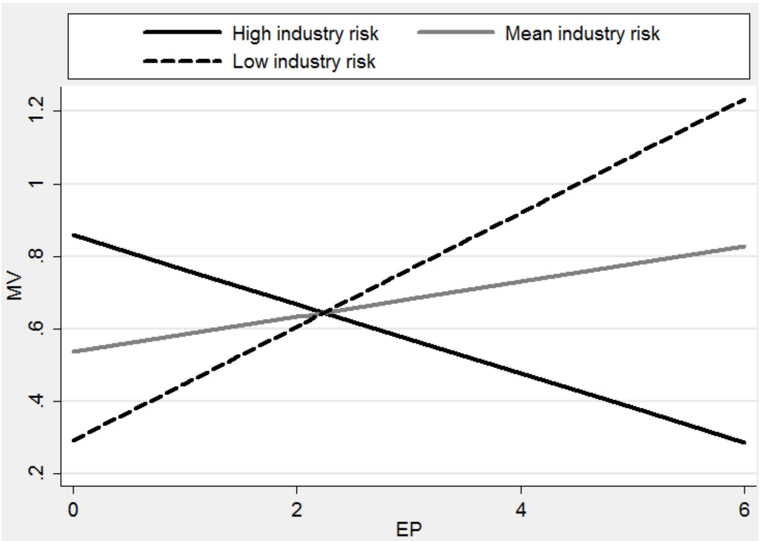

Figure 1. Conditional-effects plots of MV on EP.

$$IR_{HIGH} : MV = -0.10EP + 0.66 \quad (3)$$
$$(-1.30) \quad (3.61)$$

$$IR_{MEDIUM} : MV = 0.05EP + 0.64 \quad (4)$$
$$(1.45) \quad (4.22)$$

$$IR_{LOW} : MV = 0.16EP + 0.62 \quad (5)$$
$$(3.46) \quad (3.36)$$

$$Difference\ IR_{HIGH} - IR_{LOW} : -0.26 \quad (6)$$
$$(-4.76)$$

Figure 1 depicts a set of three simple regression lines of the regression of MV on EP as a function of three values of industry risk, IR_{LOW}, IR_{MEDIUM}, and IR_{HIGH} for the data set. Values of industry risk are chosen to be at the minimum value (IR_{LOW} = -2.58), at the mean value (IR_{MEDIUM} = 0), and at the maximum value (IR_{HIGH} = 3.42). Figure 1 on conditional-effect plots also reveals a mixed pattern of the regression of EP on MV dependent on the level of industry risk. The regression Equations (3)-(6) indicate that the relation between MV and EP is significantly positive and stronger for large companies at low level of industry risk (e.g., banks, diversified financials, and retailing and consumer services sectors) and less strong for large companies at mean level of industry risk. In contrast, there is a strong, negative relation for large companies at a high level of industry risk. A plausible interpretation is that financial markets impose risk premiums when pricing EP of companies in polluting and more regulated industries. Event studies have confirmed (Lundgren & Olsson, 2009) that environmental incidents lead to negative abnormal returns for companies, especially in high-risk industries. A higher EP seems to be linked to substantial investments made in order to reduce company-specific risks and costs with no return to shareholders.

Multivariate Tests on Large Companies

An additional test on the moderating effects of size and industry risk on the relation between market premium and EP is conducted in a sample of large companies to provide a formal test for the conditional-effect plots in Figure 1. In the sub-sample, company size (*Size*) is proxied by a continuous variable, *TA*, and industry risk, *DIR*, is a categorical variable that reflects three categories of industry risk, DIR_{High}, DIR_{Medium}, and DIR_{Low}. The change in specification is labelled by an extra initial "D" for a moderating variable of *DIR* and by removing an initial "D" for a moderating variable of *Size*.

Table 5

Multivariate Tests on Large Companies

Variable	Linear panel data fixed-effect regressions						
$BV_{i,t}$	0.76 (2.14)	0.64 (2.03)	0.81 (2.27)	0.85 (2.48)	0.77 (2.17)	0.59 (1.95)	0.68 (2.25)
$NI_{i,t}$	5.97 (2.49)	4.03 (1.83)	5.87 (2.58)	5.77 (2.44)	5.95 (2.48)	4.80 (2.26)	4.76 (2.15)
$EP_{i,t}$	0.08 (2.37)	0.04 (1.30)	0.13 (3.48)	-0.02 (-0.35)	0.09 (2.01)	0.09 (2.62)	-0.02 (-0.52)
$SIZE_{i,t}$		127.51 (5.07)				100.13 (3.91)	194.86 (5.44)
$EP*SIZE_{i,t}$		6.77 (2.21)				6.52 (2.15)	-1.20 (-0.26)
$EP*DIR_{Highi,t}$			-0.27 (-2.99)			-0.21 (-3.02)	
$EP*DIR_{Lowi,t}$				0.18 (2.66)			0.14 (2.39)
$EP*DIR_{Mediumi,t}$					-0.03 (-0.44)		
$Size*DIR$						161.57 (2.00)	-111.45 (-2.36)
$EP*DIR_{High}*Size_{i,t}$ (H_0)						-6.87 (-0.67)	
$EP*DIR_{Low}*Size_{i,t}$ (H_0)							10.46 (1.78)
Intercept	0.42 (2.51)	0.72 (2.21)	0.66 (4.30)	0.63 (4.28)	0.59 (4.06)	0.89 (6.15)	0.77 (6.09)
Adj. R^2	0.12	0.14	0.12	0.12	0.12	0.10	0.09

Notes. Table 5 reports coefficient estimates of panel regressions of MV on accounting variables and EP interacted with a categorical industry risk variable (*DIR*; general environmental risk of industry rating) and a continuous company size variable (*Size*; *TA*). Industry risk is defined as high, DIR_{High}, medium, DIR_{Medium}, or low, DIR_{Low}. All financial variables are scaled by *TA*. VIF does not indicate problems of multi-collinearity among variables. Sub-sample contains 122 large-sized companies constituting 488 company-year observations. Table 5 reports fixed-effect (within) OLS coefficients with clustered *t*-statistic (in parentheses).

In Table 5, the estimated coefficient of $EP*DIR_{High}$ is significantly negative while the coefficient of $EP*DIR_{Low}$ is significantly positive. The result is consistent with the MRA tests and also made economically meaningful by this additional test. EP is associated with an increase in market MV of 0.18 in low-risk industries and a decrease in MV of 0.27 in high-risk industries. Further, Table 5 indicates that low-industry risk companies have higher market premiums, driven by size as a function of transparency. The interaction term $EP*DIR_{Low}*Size$ is significantly positive and higher than the interaction term $EP*DIR_{Low}$. There is no indication that market premiums in regulated industries are driven by *Size* (improved transparency).

Multivariate Tests on Operating Profit

The study also illustrates the test of industry risk on the relation between EP and operating profit that is operationalized by return on assets (ROA) ratio (not reported for brevity). Although no formal hypothesis was stated, the argument for the main hypothesis was that EP would be costly for the leading companies. The interaction term between industry risk and EP is significantly negative (β_9 = -0.001, *t*-value = -1.31). The difference in the relation comes from a significantly negative regression of ROA on EP at IR_{HIGH} and a significantly positive regression of ROA on EP at IR_{LOW}. The findings are consistent with the resource-based theory of the firm that in low-risk industries, there is more room for voluntary environmental improvements at a lower cost.

Conclusions

This study extends previous research on the direct linear relation between EP and MV by introducing confounding effects of company size and industry. Based on the Ohlson's (1995) model, the authors found that market prices respond to EP differently depending on the environmental risk of the industry and company size.

The paper demonstrates that large companies in polluting industries with high environmental risk encounter a higher stakeholder pressure and consequently show on average a higher EP than companies operating in industries with low environmental risk. Small companies on average do not invest in environmental management to the same extent as large companies do. A key finding of the paper is that when large companies in regulated industries push their EP beyond average compliance, environmental management becomes costly and the financial markets interpret such investments as over-investments with a potential to destroy shareholder value. Environmental leaders in high-risk industries, such as chemicals and pulp and paper, trade at a discount. In low-risk industries with limited environmental regulation and less stakeholder intervention, EP of the average company is relatively low. Under these industry conditions, environmental leaders can improve their EP at a lower cost with low risk for over-compliance. In industries with low direct environmental risk, such as banks and insurance, environmental leaders trade at a premium.

The paper has identified two major drivers of asymmetry in MV which extend previous research. Past research often uses industry dummies to control for possible differences in the impact of EP on MV. Such proxies are obviously noisy and reflect in addition numerous company- and market-specific attributes. This is the first paper to introduce the concept of environmental risk of the industry and also to extend the research to small companies. Corporate transparency and analysts' coverage, as proxied by company size, need special attention when we want to understand the relation between EP and financial performance.

The paper has implications for investors, companies, and policy makers. For investors that integrate EP into their investment decisions, it is important to understand that environmental leaders are priced differently in high- and low-impact industries and that the potential for a premium is the highest where there is room for voluntary environmental management at a low cost. Regulators need to understand that a high EP is costly for companies in environmentally regulated high-impact industries. For companies, the research indicates that successful environmental management, which is difficult to observe and link to financial performance, should be communicated through integrated reporting. Such a statement is highly relevant for small companies.

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Journal of Modern Accounting and Auditing, ISSN 1548-6583
June 2013, Vol. 9, No. 6, 790-797

Corporate Governance and Earnings Quality: The Experience of Listed Companies in Iran

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This study examines the relationship among independent boards of directors, board size, managerial share ownership (MSO), and earnings quality. The study of these relationships is controlled by firm size based on a sample of 114 companies listed on the Tehran Stock Exchange (TSE) for the period from 2008 to 2010. The results demonstrate that there was an insignificant positive relationship among independent boards of directors, managerial ownership, and earnings quality. Subsequent analysis shows an insignificant negative relationship between board size and earnings quality. It also provides evidence of the negative relationship between firm size as a control variable and earnings quality. This can be attributed to the fact that large firms are claimed to be politically sensitive and thus have the incentive to lessen variances in changes in their reported earnings.

Keywords: corporate governance, board independence, board size, managerial share ownership (MSO), earnings quality, discretionary accruals (DACC), Iran

Introduction

Based on accounting concept statement No. 1 of the Financial Accounting Standards Board (FASB), users of financial statements utilize earnings for different purposes. Through earnings, they can assess management performance, evaluate future profitability, forecast future profits, and determine the risk of investing in an entity. Hence, Beaver (1998) stated that standard setters are very concerned with how earnings numbers are derived as they are regarded as the most important items in financial reports to investors, analysts, boards, and senior executives (Guan, He, & Yang, 2006).

The main criteria for evaluating securities are corporate profits. But does the information provided by a firm facilitate the ability to predict profitability and how reliable is the information that is presented to investors? An important point highlighted by Guan et al. (2006) is that the flexibility in Generally Accepted Accounting Principles (GAAP) provides managers with the opportunity to manipulate earnings without violating GAAP. The authority of managers in using different principles for revenue recognition, matching costs with revenues, and estimates and forecasts is one of the factors that affect earnings quality. While managers have access to critical information about the company and thus are expected to make decisions that best reflect the actual position of the company, reasons such as earnings retention, bonuses, and others influence directors to act differently. Thus, it is clear that the quality of earnings in companies is affected by the principles and discretion of managers.

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Most firms in Iran are under private ownership and managed by a few, major shareholders that run the company for their own interests (Yeganeh, 2006). From 2005, Iranian authorities have been trying to encourage private and some government-owned companies to list their shares on the Tehran Stock Exchange (TSE) to attract foreign investment and grow the economy. In the process, the Tehran Bursa also takes into account the need to protect the interests of the minority shareholders by the major shareholders of the companies.

A system of corporate governance has been developed aiming at strengthening the position of Iranian companies in attracting foreign investments from the world's capital markets. As a result, in late 2004, the first edition of the Iranian Code of Corporate Governance was published by the TSE Research and Development Centre.

Mashayekhi and Bazaz (2008) investigated the role of corporate governance indices, such as board size, board independence, and board leadership on the performance of firms on the TSE for the period of 2005-2006. They noted that independent directors have a positive effect on firm performance, while the board size is negatively associated with it. In addition, the research by Mashayekhi and Esmaili (2006), on 135 firms on the TSE during the period of 2002-2004 before the implementation of the Iranian Code of Corporate Governance, concluded that there was no significant correlation between board independence and earnings quality, since non-executive directors did not have an effective controlling and monitoring role in the companies. They explained that non-executive directors do not have enough information about critical issues and are not acquainted with the problems affecting the company, thereby hindering efficient and effective control by them. However, to date, there is no published study that explores the effect of board independence and other aspects of corporate governance such as managerial share ownership (MSO) and board size on earnings quality following the implementation of the Iranian Code of Corporate Governance.

Thus, the main objective of this study is to gather empirical evidence on the relationship between the aspects of corporate governance and earnings quality (measured by total accruals) in companies listed on the TSE. Hopefully, the findings of this study will assist concerned parties in taking the necessary precautions when interpreting information from financial statements. In addition, it is proposed that legislators and regulatory bodies review these findings and formulate ways to protect investors.

Following this introduction, this paper is organized as follows: Section 2 covers the literature review and hypotheses development; Section 3 elaborates on the research design for this study; Section 4 provides the results and findings; and finally, Section 5 provides the conclusion and the recommendation for future research.

Literature Review and Hypotheses Development

A series of high-profile accounting scandals and corporate collapses in the United Sates (US) (e.g., Enron, WorldCom), Australia (e.g., HIH, One-Tel), and in other parts of the world point to a clear need for corporate governance reform that focuses particularly on earnings management. This situation has brought pressure on Asian companies to improve their corporate governance codes.

Assigning independent directors to the board (Jaggi, Leung, & Gul, 2009), number of members on the board (Xie, Davidson, & DaDalt, 2003) and ownership by founding managers (Pergola, 2006) seem to be an effective corporate governance mechanism to increase earnings quality. The following sections develop three hypotheses to meet the objectives of the study which are related to board independence, board size, and managerial ownership.

Board of Director Independence and Earnings Quality

The control and supervision of management is the main responsibility that directors have to the shareholders who elect them (Jensen & Meckling, 1976; Machuga & Teitel, 2009). This responsibility is especially true for directors who are independent of internal managing directors particularly on financial issues, because they can easily resist pressure from the company to manipulate earnings and are able to inspect the earnings process better than insiders.

The Sarbanes-Oxley Act (2002) highlighted the necessity for the board to have independent members to improve the earnings quality by minimizing earnings management. Following the 1997 Asian financial crisis, the Korean government introduced a series of corporate amendments which required among others a minimum of 25% of the board to be made up of external directors (Choi, Park, & Yoo, 2007). Jaggi et al. (2009) concluded that the earnings quality is better for Hong Kong companies with a higher proportion of independent directors on the board. This is consistent with prior studies, such as studies of Klein (2002) and Niu (2006) which found a negative relationship between earnings management and the level of board independence in the US and Canada.

Additionally, Mashayekhi and Bazaz (2008) found that the presence of external directors enhanced the performance of firms in TSE-listed companies, because they strengthened impartial monitoring processes.

Based on the above discussion, this study predicts that there is a positive relationship between board independence and earnings quality, as described in the following hypothesis:

H1: There is a significant positive relationship between the proportion of independent outside directors on the board and earnings quality.

Board Size and Earnings Quality

Fama and Jensen (1983) stated that the most important function of a board of directors is to control agency costs resulting from the separation of ownership and control. Others like Chaganti and Mahajan (1985) and Dalton, Daily, Ellstrand, and Johnson (1998) believed that large boards are beneficial for the broader range of experiences (Xie et al., 2003) and the varied expertise (Abdul Rahman & Mohamed Ali, 2006) that they bring to the decision-making process. They suggested that a larger board is more effective in preventing corporate failure. However, a large board size may make it difficult for members to have efficient communication and to achieve a consensus.

The Iranian Code of Corporate Governance stated that the optimum number of board members should be appropriately determined by the whole board to ensure that there are enough members to discharge responsibilities and perform various functions. Goodstein, Gautam, and Boeker (1994) argued that smaller boards of 4-6 members might be more effective, since they can make timely strategic decisions, while larger boards are capable of monitoring the actions of top management (Zahra & Pearce, 1989) and increase the earnings quality (Xie et al., 2003; Peasnell, Pope, & Young, 2001). Therefore, the study predicts that board size has a positive effect on earnings quality, as hypothesized below:

H2: There is a significant positive relationship between board size and earnings quality.

MSO and Earnings Quality

The current corporate financial scandals have raised concerns on whether public firms are being run in the best interests of the shareholders (Pergola & Joseph, 2009). Company managements comprise those having too much authority and who are not subjected to adequate supervision and accountability, especially in firms where ownership is widely dispersed (Jensen & Meckling, 1976; Machuga & Teitel, 2009). Agency conflicts that arise from the separation of ownership and control may not be effectively solved through corporate governance systems.

Another strategy often used to align the interests of directors and managers with shareholders is by encouraging stock ownership. Based on the "convergence-of-interest" theory, when managers on the board have no stock ownership, they are self-oriented and have little authority to overcome corporate controls designed to match their actions for the benefit of stockholders. But when managers have stock holdings, their sense of ownership will grow and their interests will align with that of stockholders. Through this alignment, the quality of decisions and the value of the company will improve (Beasley, 1996; Jensen & Meckling, 1976). In summary, this study predicts that there is a relationship between MSO and earnings quality. Based on the arguments presented above, the hypothesis is as follows:

H3: There is a significant positive relationship between MSO and earnings quality.

Research Design

Of the 197 firms listed on the TSE in 2010, the sample size selected for this study consisted of 142 firms which had data for three consecutive years from 2008 to 2010 (as at March 19, 2010 (corresponding with December 29, 1389)). The study period began from 2008, a few years after the establishment of the code in late 2004 and when most of the companies had implemented it. There are 28 companies which did not have enough available data to be included in the study. Thus, the final sample consisted of 114 companies.

Five operational variables were utilized for the study comprising one dependent variable, three independent variables, and one control variable as described in Table 1.

Table 1

Summary of Variables and Measurement Used

Variable	Type of variables	Measurement scale	Source of data
Earnings quality	Dependent variable	The reverse measure of abnormal accruals using modified Jones' (1991) model proposed by Dechow, Sloan, and Sweeney (1995)	Annual report
Board of director independence	Independent variable	Ratio of independent non-executive directors to total number of directors on the board of directors	Annual report
Managerial ownership	Independent variable	The number of shares (excluding stock options) held by the company's executive directors divided by the number of common shares outstanding	Annual report
Board size	Independent variable	The total number of board members	Annual report
Firm size	Control variable	The log of total assets	Annual report

In this study, the earnings quality is measured by using the discretionary accruals (DACC) model as modified by Jones (1991) and proposed by Dechow et al. (1995). In line with previous studies (Dechow et al., 1995; Guay, Kothari, & Watts, 1996), the modified Jones' (1991) model is the most powerful of the existing models for estimating DACC when the discretion is exercised over revenue. DACC is the difference between total accruals (TACC) and non-discretionary accruals (NDAC). Consistent with Al-Fayoumi, Abuzayed, and Alexander (2010), TACC is defined as the difference between net income before extraordinary items (NI) and cash flow from operating activities (OCF), while based on Abdul Rahman and Mohamed Ali (2006) and Ye, Zhang, and Rezaee (2010), NDAC or normal accruals are estimated during the year in which earnings management is approximated as:

$$NDAC_{i,t} = \alpha_1(1/TA_{i,t-1}) + \alpha_2(\Delta REV_{i,t} - \Delta REC_{i,t} / TA_{i,t-1}) + \alpha_3(PPE_{i,t} / TA_{i,t-1}) \quad (1)$$

For this study, the proxy for the independent non-executive directors is the ratio of independent non-executive directors to the total number of directors on the board of each company (Abdul Rahman & Mohamed Ali, 2006; Haniffa & Hudaib, 2006). The study used the total number of board members (dependent and independent) in examining the board size similar to that employed by Xie et al. (2003), Peasnell et al. (2001), and Abdul Rahman and Mohamed Ali (2006). Using data from the annual reports retrieved from the Tehran Bursa, the managerial equity ownership value is determined based on the number of shares (excluding stock options) held by the company's executive directors who are members of the board of directors divided by the number of common shares outstanding.

Findings

Descriptive Statistics Results

As Table 2 illustrates, the magnitude of the mean for DACC for the whole sample is 0.0663207, not significantly different from zero. As such, the test provides evidence that on average, large Iranian public corporations rarely use accruals for managing their reported earnings.

Table 2 also shows that the mean value for the MSO is 0.31 and the maximum value is 0.63, meaning that managers do not have significant ownership in Iranian companies.

Table 2
Descriptive Statistics (N = 342)

Variable	Mean	Median	Minimum	Maximum	Standard deviation	Skewness	Kurtosis
DACC	0.0663207	0.0078	-0.46	1.91	0.27649	1.81218	9.55
MSO	0.31	0.27	0.15	0.63	0.11	0.57	-0.39
BODIND	0.64	0.67	0.33	1	0.13	-0.12	-0.65
BSIZE	5.06	5.00	5	8	0.24	1.70	8.00
FSIZE	5.92	5.89	5.29	7.15	0.30	0.66	0.54

Notes. DACC is a proxy of earnings quality measured by discretionary accruals; *MSO* is managerial share ownership measured by the percentage of shares held by the company's executive directors divided by the number of common shares outstanding; *BODIND* refers to board of directors' independence measured by ratio of independent non-executive directors to total number of directors on the board of directors; *BSIZE* is board size as measured by total number of board members; and *FSIZE* is firm size that is measured by natural logarithm of total assets.

Multiple Regression

Table 3 indicates an insignificant relationship between board independence and DACC and also between managerial ownership and DACC. Hence, Hypotheses 1 and 3 were not supported. For the first hypothesis, this finding was consistent with that of Abdullah and Mohd Nasir (2004) and Mashayekhi and Esmaili (2006) who also found an insignificant relationship between board independence and DACC. Therefore, the results in this study suggest that the independence of the board has no significant influence on Iranian companies' earnings quality.

A possible explanation is that the board members who are independent are non-executive directors who do not have enough information and are not familiar with company issues and unable to control it efficiently. The findings for the third hypothesis were also consistent with that of Mashayekhi and Esmaili (2006) who concluded that no significant association was found between managerial ownership and earnings quality. Consequently, this study also showed that managerial ownership has no significant influence on the earnings quality of companies. This can be explained that as an Islamic country, all actions including social and business activities in Iran are governed by religious principles. Therefore, companies in Iran which hire managers place a significant emphasis on their adherence to Islamic norms (Mashayekhi & Esmaili, 2006). It means that when choosing high-ranking officers and board members, Iranian companies place substantial emphases on their faith and acceptance of traditional Islamic customs (Mashayekhi & Bazaz, 2008). Consequently, managerial decisions are not guided by or dependent on having ownership in companies.

Table 3

Fixed Effect of Panel Regression

Variable	Model		
	Coefficient	t	P-value
Constant	-1.859	-4.586	0.000
BODIND	-0.120	-1.023	0.307
BSIZE	0.104	1.601	0.110
MSO	-0.144	-1.401	0.162
FSIZE	0.257	5.987	0.000^{**}
R^2		0.122	
Adj. R^2		0.112	
F-statistic		11.752	
N		342	

Notes. Table 3 shows the relationship among board independence, board size, managerial ownership, and *DAC*C controlling for size. ** denotes statistically significant at the level of 1%. R^2 is the regression coefficient determinant. The regression equation is as follows: $DACC_{it} = \beta_0(Constant) + \beta_1 BODIND_{it} + \beta_2 BSIZE_{it} + \beta_3 MSO_{it} + \beta_4 FSIZE_{it} + \varepsilon_{it}$.

Based on Table 3, the second hypothesis which states that board size had a significant positive relationship with earnings quality was also rejected. The analysis showed an insignificant relationship between board size and DACC in Iranian companies, similar to the findings by Nikbakht, Seyyedi, and Alhosaini (2010). Although almost 94% of the sampled firms had five members on their boards, and the Iranian Code of Corporate Governance stipulates that the board should determine its optimum membership to discharge responsibilities and perform various functions properly, there is no significant relationship between board size and earnings quality in Iranian companies.

Consistent with Ball and Foster (1982) and Gu, Lee, and Rosett (2005), the current study found a significant relationship between firm size and DACC. The results indicate that in Iran, large firms increase the probability that managers engage in earnings manipulation resulting in the lower quality of the reported earnings. It can be explained that large firms are claimed to be politically sensitive and thus have incentives to reduce variances in changes in their reported earnings. These incentives arise, because larger firms are highly subjected to public scrutiny by the media, investment analysts, the government, labor unions, competitors, and customers compared with smaller firms (Craig & Walsh, 1989).

Conclusions

This study examined the effect of board independence and board size on earnings quality and the relationship between managerial ownership and earnings quality. The overall results of the study suggest that evidence was only sufficient to support the negative relationship between firm size as a control variable and earnings quality. In line with the study of Craig and Walsh (1989), this study found that firm size was significantly positively associated with DACC, thus revealing a lower earnings quality. This was consistent with the notion of the size effect which inclined firms to report high-quality earnings. Larger firms are more likely to manage earnings to avoid reporting losses than smaller firms. This evidence supported the argument that large firms are more sensitive in terms of politics; therefore, they have the inducements to decrease variances in the reported profits. These incentives are stronger, because they are at the center of attention and inspection from different parties compared with smaller firms (Craig & Walsh, 1989).

A limitation of this study is the relatively small sample size of 114 Iranian companies. Due to this limitation, any generalization of findings to all firms might be biased to the sample chosen. A larger sample size would provide a more comprehensive set of findings and allow for more robust interpretations for this study.

Secondly, the limitations were related to the measurement error of the DACC, as the study is subjected to all the limitations of the modified Jones' (1991) model. Furthermore, this study did not compare the different proxies for measuring DACC in testing the sturdiness of the results. Time constraints made this limitation unavoidable.

Future research should cover a larger sample size and a longer time frame in order to better understand the effects of board independence, board size, and managerial ownership on earnings quality.

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Journal of Modern Accounting and Auditing, ISSN 1548-6583
June 2013, Vol. 9, No. 6, 798-807

Static Model Classification Status: Taking Into Account Emerging External Factors

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Analysis of the problem of predicting bankruptcy shows that foreign and domestic models included only internal factors of enterprises. But the same indicators of internal factors in the rapidly changing external environment can lead to bankruptcy, and not in others. External factors are the most dangerous, because the possible influence on them is minimal and the impact of their implementation can be devastating. This paper focuses on the same factors to assess the impact of the macroeconomic indicators (external factors) on the parameters of static models predicting a local approximation of the crisis at the plant. To accomplish the purpose, a Spark set of 100 companies was compiled, including 50 companies which officially declared bankruptcy in the period of 2000-2009 and 50 stable operating companies with a random sample of the same time period. External factors were extracted from the Joint Economic and Social Data Archive [1]. The author compared two data sets: (1) microeconomic indicators—money to the total liabilities, retained earnings to total assets, net profit to revenue, Earnings Before Interest and Taxes (EBIT) to assets, net income to equity, net profit to total liabilities, current liabilities to total assets, the totality of short-term and long-term loans to total assets, current assets to current liabilities, assets to revenue, equity to total assets, and current assets to revenue; and (2) external factors—index of real gross domestic product (GDP), industrial production index, the index of real cash incomes, an index of real investments, consumer price index, the refinancing rate, unemployment rate, the price of electricity, gas prices, oil price, gas price, dollar to ruble, ruble euro Standard & Poor (S&P) index, the Russian Trading System (RTS) index, and region. The aim of the comparison results paging classes "insolvent" and "non-bankrupt" is achieved using two methods: classification and discrimination. In both methods, computational procedures are realized with the use of algorithms: linear regression, artificial neural network, and genetic algorithm. In the 2-m model, data set includes both internal and external factors. The results showed that the inclusion of only the microeconomic indicators, excluding external factors, impedes models about two times.

Keywords: bankruptcy prediction, external factors, methods of classification and discrimination

The Notion of "Emerging"

Conventional wisdom is that the bankruptcy and the crisis at the plant—the concepts are synonymous, bankruptcy, in fact, is seen as an extreme manifestation of the crisis. In reality, this is not the case—the company is subjected to various types of crises (economic, financial, and managerial) and bankruptcy is just one of them (Eytington, 2007). Worldwide under the financial crisis, bankruptcy is commonly understood as

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[1] Retrieved from http://www. stat.hse.ru.

the inability of the company to fulfill its current obligations. In addition, the company may be experiencing economic crisis (a situation where resources are used inefficiently) and crisis management (ineffective use of human resources, which often means low competence management, and consequently, inadequate management decisions with the environment). Accordingly, different methods of predicting bankruptcy, as it is accepted to name them in domestic practice, in fact, predict various types of crises.

State of the Problem

Types of Models

Attempts to develop models for predicting bankruptcy were initiated in the mid-1930s and continue to this day. In summary, the results of previous studies can be divided into three groups.

Bankruptcy prediction models:

(1) Statistical model (statistical models);

(2) A model of artificial intelligence (AI);

(3) The theoretical model (theoretical models).

Statistical models were obtained through the use of different statistical methods of classification:

(1) This single factor (a one-dimensional analysis);

(2) Multifactor linear discriminant of such (multiple discriminant analysis);

(3) The conditional probability (conditional probability analysis);

(4) Survival (survival analysis).

A model of AI applied in this issue includes:

(1) Decision tree (tree);

(2) Genetic algorithm (genetic algorithm);

(3) Neural networks (neural networks);

(4) The theory of fuzzy sets (rough sets theory);

(5) Method of support vectors (support vector machine).

Among the theoretical models include:

(1) Entropy theory (the theory of entropy);

(2) Ruin theory (theory of ruin player);

(3) Theory of the auditors of the option (option price theory).

Comparison of frequency of use and the accuracy of the predictions showed that 64% of previous studies were associated with statistical models for predicting bankruptcy, 25% with models of AI, and 11% with the development of theoretical models. The prediction showed the superiority of models of AI: 88%, with theoretical models showing 85% and 84% for statistic models forecasting accuracy (see Table 1) (Aziz & Dar, 2004; Zhurov, 2010).

Table 1

Comparison of Accuracy of Forecasting Developed Models

Modeling technique	This study				The average precision in foreign studies (Aziz & Dar, 2004)
	The overall accuracy of the original data set classification	Procedure for comparative validity			
		Error type 1	Error type 2	Overall accuracy	
Single factor analysis	83.10%	21.40%	14.80%	80.70%	81%

(Table 1 continued)

Modeling technique	This study				The average precision in foreign studies (Aziz & Dar, 2004)
	The overall accuracy of the original data set classification	Procedure for comparative validity			
		Error type 1	Error type 2	Overall accuracy	
Multifactor analysis of linear discriminant	85.30%	14.30%	16.20%	84.80%	86%
Analysis of conditional probability	85.30%	14.30%	16.20%	84.80%	87%
Decision tree	95.50%	17.10%	10.00%	86.40%	87%
Genetic algorithm-neural network	95.80%	9.00%	10.00%	90.50%	89%
The theory of fuzzy sets	90.00%	12.90%	11.90%	87.60%	91%
Method of support vectors	89.10%	10.00%	15.20%	87.40%	87%

Notes. Here, under the error of type 1 means the result when the bankrupt enterprise is wrongly classified as an enterprise model— non-bankrupt. Error type 2 is recorded when the non-bankrupt company is classified as bankrupt.

Interim Conclusions From the Analysis of the Problem, the Purpose of the Study, and the Choice of Methodology

Analysis of the problem shows that the Russian (Zaitseva, 1998; Zaichenko & Rogoza, 2010; Kovalev & Privalov, 2001; Hooks & Egorychev, 2001; Kryukov, 2006; Nedosekin, Maximov, & Pavlov, 2003; Prudnikova, 1998; Strekalov & Zaripov, 1997; Fomin, 2003; Furmanov, 2005; Haydarshina, 2009; Chelyshev, 2006; Yurzinova, 2005; Davydov & Belikov, 1999) and foreign (Ezzamel, Brodie, & Mar-Molinero, 1987; Hardle, Moro, & Schifer, 2005; Lennox, 1999; Ohlson, 1980; Taffler, 1983) models take into account only the internal factors of enterprises. From overseas practices of countries with developed market economies, it has been realized that internal factors of risk of bankruptcy, due to the erroneous actions of management, are responsible for up to 80% of cases of economic insolvency of companies. This is due to the relatively stable value of external factors (constants in the construction of models do not appear).

Since Russia external factors are changing rapidly, the models of domestic enterprises may occur. It is clear that the same indicators of internal factors in the rapidly changing external environment can lead to bankruptcy, and not in others.

External factors are the most dangerous, because the possible influence on them is minimal and the impact of their implementation can be devastating.

In accordance with the conclusions of the analysis of the problems in the goal, the paper focuses on the same factors of Russian enterprises to evaluate the impact of macroeconomic indicators (external factors) on the parameters of the static model prediction approach local crisis at the company.

Sample Size

In order to accomplish the objectives of the Spark database has compiled a set of 50 companies officially recognized bankrupt during the period of 2000-2009 and 50 stable enterprises with random sampling of the same time period.

Indicator Sets

Calculations were made with two sets of data: (1) only microeconomic indicators; and (2) in addition, microeconomic indicators were taken into account external factors relevant time-fixing internal factors. A set of internal (microeconomic) enterprises is taken:

(1) Cash to total commitments;

(2) Retained earnings to total assets;

(3) Net profit in the proceeds;

(4) Earnings before interest and taxes (EBIT) to total assets;

(5) Net profit/equity ratio;

(6) Net income to total liabilities;

(7) Current liabilities to total assets;

(8) Set of short- and long-term loans to total assets;

(9) Present value (PV) to assets;

(10) Current assets in short-term obligations;

(11) Assets to revenue;

(12) Shareholders' equity to total assets;

(13) Current assets to revenue.

At 2-ohms dataset to calculate prediction models, pre-crisis state enterprises in addition to the 1st set of external factors are taken into account:

(1) Index of real gross domestic product (GDP);

(2) The index of industrial production;

(3) Index of real cash incomes;

(4) Index of real investment of the fixed assets;

(5) Consumer price index;

(6) Refinancing rate;

(7) The unemployment rate;

(8) Electricity prices by region;

(9) Gas prices by region;

(10) The price of oil;

(11) Price of gas;

(12) Dollar to ruble;

(13) Euro rate to the ruble;

(14) Standard & Poor (S&P) index;

(15) Russian Trading System (RTS) index;

(16) Region.

Calculation Methods

The aim of comparison results paging classes "insolvent" and "non-bankrupt" allows one to apply the two methods: classification and discrimination.

As applying statistical packages is in conflict with the normal law of distribution and multicollinearity in the source data, to solve the problems that had arisen, the author used package-mining company PolyAnalist Megaputer Intelligents.

In both methods, computational procedures are realized with the use of algorithms:

(1) Linear regression;

(2) Artificial neural network;

(3) Genetic algorithm.

In the two latter algorithms, result is presented in the form of higher-order polynomials, which makes it difficult to use them in practice.

Since the objective of the study was not to achieve the highest precision, and assessing the impact of external factors, the following are the results of applying only the linear regression algorithm.

The Results of the Research

Model Discrimination

The results of applying the methodology of discrimination with the algorithm and a set of linear regression only microeconomic indicators are as follows:

Straightly, between class "bankrupt" and class "non-bankrupt", has the form:

If the value of the prediction expression (see below) more than the record belongs to 0.5814 Class 1 (class 1) or not (0).

Prediction expression is:

$$0.5814 < (+0.496044 + 2.93727e - 003 * r3 + 1.94875e - 001 * r7 - 7.53875e - 002 * r8 - 8.44984e - 001 * r11)$$

Legend is given in Table 2.

Table 2

Calculation of Indicators

Cash flow ratios	Calculation	Indicator
Cash flow to total liabilities	DC/commitments	r1
Profitability ratios		
Retained earnings to total assets	Profit/assets	r2
Net profit to net sales	Net profit/sales	r3
EBIT to total asset	EBIT/total assets	r4
Net income to total equity	Return on equity (ROE)	r5
Net income to total liabilities	Profit/commitments	r6
Leverage ratios		
Total current liabilities to total assets	Short-term liabilities/assets	r7
Total debt to total asset	Short-term and long-term debt/total assets	r8
Debt to equity	Debt/equity	r9
Equity to asset	Capital/assets	r10
Liquid asset ratios		
Cash and bank to total assets	DC/assets	r11
Short-term solvency ratios		
Current asset to current liabilities	Current assets/current liabilities	r12
Activity ratios		
Turnover of assets	Assets/revenue	r13
Current asset to sales	Current assets/revenue	r14

The results of model calculations of discrimination using a linear regression algorithm and data sets of micro and macro indicators are as follows:

If the value of the prediction expression (see below) more than the record belongs to 0.6477 Class 0 (class 1) or not (0).

Prediction expression is:

$$0.3406 < (+2.09434e-007*r3+2.56384e-006*r6+1.54082e-005*r7-4.73087e-006*r8+1.17210e-007*r9 -6.54962e-005*r11-3.13720e-006*"\textit{Index of the real income of the fixed assets}"+1.02195e-006*"\textit{Index of real investments}"+1.31177e-005*"\textit{Refinancing rate}"-1.14226e-005*"\textit{Dollar to ruble}" +1.25165e-005*"\textit{Euro to Russian ruble}")$$

Type 1 and type 2 errors are presented in Table 3.

Table 3

Error in the Method of Discrimination

Valid/predicted	Micro		Micro & macro		Undefined
	0	1	0	1	
0	39	8	34	13	0
1	25	25	4	46	0

Statistical significance coefficients for both internal and external factors are illustrated in Table 4.

Table 4

Factors

The name	Micro & macro			Micro		
	The coefficients	Standard deviation	*F*-ratio	The coefficients	Standard deviation	*F*-ratio
r3	2.094e-003	7.824e-004	7.166	2.937e-003	8.967e-004	10.73
r6	2.564e-002	2.509e-002	1.044			
r7	1.541e-001	5.838e-002	6.966	1.949e-001	6.626e-002	8.65
r8	-4.731e-002	3.892e-002	1.477	-7.539e-002	4.617e-002	2.666
r9	1.172e-003	1.135e-003	1.066			
r10	-6.55e-001	4.11e-001	2.539			
r11	-3.137e-002	7.132e-003	19.35	-8.45e-001	4.702e-001	3.229
Index of the real income of the fixed assets	1.022e-002	3.617e-003	7.981			
Index of real investments	1.312e-001	1.899e-002	47.73			
Refinancing rate	-1.142e-001	2.67e-002	18.3			
Dollar to ruble	1.252e-001	2.209e-002	32.11			
Euro to Russian ruble	2.094e-003	7.824e-004	7.166			

Error separation sample classes “bankrupt” and “non-bankrupt” are illustrated in Table 5.

Table 5

Error in the Method of Discrimination

Probability	Micro (%)	Micro & macro (%)
Error classification for class 0	17.02	27.66
Error classification for class 1	50	8
General error classification	34.02	17.53
The probability of a correct classification	65.98	82.47
Efficacy classification	29.79	63.83
P-value	3.775e-011	6.144e-006

The calculation results for discriminatory method set only the variables in the form of internal indicators, and additional view of external factors shows the inclusion in the model of macroeconomic indicators.

Reduced error classifications are as follows:

(1) General error classification two times (with 34.02% to 17.53%);

(2) For class “bankrupt”, it is more than six times (from 50% to 8%);

(3) Increased the probability of a correct classification with 65.98% and 82.47%;

(4) The classification efficiency increased from 29.79% to 63.83%.

The results of applying the algorithms in a discriminatory method of artificial neural network and genetic algorithm are not listed here.

A Classification Model

The results of the classification method for predicting the pre-crisis conditions differ somewhat from the above method of discrimination. So, dividing line is of the form:

If the value of the prediction expression (see below) is greater than the value of the class, then 0.5814 is TRUE (class 1), otherwise, it is set to be FALSE (0).

Prediction expression is:

$$0.5814 < (+0.496044 + 2.93727e - 007 * r3 + 1.94875e - 005 * r7 - 7.53875e - 006 * r8 - 8.44984e - 005 * r11)$$

The results of calculations using the classification in the joint account, both internal and external factors, are given below:

If the value of the prediction expression (see below) is greater than the value of the class, then 0.3406 is TRUE (class 1), otherwise, it is set to be FALSE (0).

Prediction expression is:

$$0.3406 < (+2.09434e - 007 * r3 + 2.56384e - 006 * r6 + 1.54082e - 005 * r7 - 4.73087e - 006 * r8 + 1.17210e - 007 * r9 - 6.54962e - 005 * r11 - 3.13720e - 006 * \text{"}\textit{Index of the real income of the fixed assets}\text{"} + 1.02195e - 006 * \text{"}\textit{Index of real investments}\text{"} + 1.31177e - 005 * \text{"}\textit{Refinancing rate}\text{"} - 1.14226e - 005 * \text{"}\textit{Dollar to ruble}\text{"} + 1.25165e - 005 * \text{"}\textit{Euro to Russian ruble}\text{"})$$

First and second types of error classification are presented in Table 6.

Table 6

Error Classification Methods

Valid/predicted	Micro		Micro & macro		Undefined
	0	1	0	1	
0	39	8	34	13	0
1	25	25	4	46	0

Error separation sample classes “bankrupt” and “non-bankrupt” are illustrated in Table 7.

Table 7

Error Classification

Probability	Micro (%)	Micro & macro (%)
Error classification for class 0	17.02	27.66
Error classification for class 1	50	8
General error classification	34.02	17.53
The probability of a correct classification	65.98	82.47
Efficacy classification	29.79	63.83
P-value	3.775e-011	6.144e-006

The statistical significance of the coefficients in a method of classification is given in Table 8.

Table 8

Factors

The name	Micro & macro			Micro		
	The coefficients	Standard deviation	*F*-ratio	The coefficients	Standard deviation	*F*-ratio
r3	2.094e-003	7.824e-004	7.166	2.937e-003	8.967e-004	10.73
r6	2.564e-002	2.509e-002	1.044			
r7	1.541e-001	5.838e-002	6.966	1.949e-001	6.626e-002	8.65
r8	-4.731e-002	3.892e-002	1.477	-7.539e-002	4.617e-002	2.666
r9	1.172e-003	1.135e-003	1.066			
r11	-6.55e-001	4.11e-001	2.539	-8.45e-001	4.702e-001	3.229
Index of the real income of the fixed assets	-3.137e-002	7.132e-003	19.35			
Index of real investments	1.022e-002	3.617e-003	7.981			
Refinancing rate	1.312e-001	1.899e-002	47.73			
Dollar to ruble	-1.142e-001	2.67e-002	18.3			
Euro to Russian ruble	1.252e-001	2.209e-002	32.11			

Grouping Variables Factor Analysis

In addition, the paper attempts to explain the correlation between the observed variables using factor analysis, the union of the variable, thus revealing the existence of some common causes behind them (or several reasons—the latent variables). Factor analysis allows us not only to obtain information to help us identify the latent variables, but also provides investigators with a way to quantify the value of the latent variable for each observation.

It is obvious that some factors are more important, others are less important for the explanation of individual variables. However, there is a metric by which the author could characterize the weight (importance) of factor for explaining all the variables included in the analysis. As this indicator is used the sum of squares of the weights of all variables on this factor. This figure is computed for display before the rotation factor bears the name of its own value factor (eigenvalue).

The use of factor analysis is not a variable, as mentioned above, and the application of factor analysis to the observations will split the company bankrupt on cluster groups and go to the dynamic problem of performance analysis of each group to produce scenarios of deterioration of their performance prior to the bankruptcy. The last task of the volume is not covered here.

For the variable factor analysis, the author applied statistical package for social science (SPSS).

All the variables explain 90.237% dispersion grouped in nine major components. Of the nine groups in models with microeconomic and macroeconomic indicators are eight components (see Table 9). One group (component 7) with variables r13 and r14 was not included in the model. All groups have an economic interpretation. Mixed teams with micro and macro indicators were observed. It follows that as the number of variables increases, such as micro and macro, it is possible to replace them with a much smaller number of latent variables.

Table 9

Grouping Variables

	Component								
	1	2	3	4	5	6	7	8	9
r1	-0.05932	0.060086	0.150043	0.031665	0.002056	**0.800149**	-0.01982	-0.00042	0.024
r2	0.053418	**0.976152**	-0.08038	-0.11418	0.007719	0.088058	0.039567	0.029417	0
r3 (profitability ratios)	0.045001	**0.922583**	-0.10796	-0.12675	-0.05222	-0.01603	-0.22203	0.045308	0.022
r4	0.037326	**0.97375**	-0.04838	-0.11197	0.012202	0.113744	0.036169	0.021192	0.001
r5	0.052977	**0.976047**	-0.0827	-0.11409	0.008038	0.087283	0.039134	0.029851	0
r6 (profitability ratios)	0.031162	0.114554	0.018302	-0.01002	0.020004	**0.852994**	-0.00461	-0.00656	-0.026
r7 (leverage ratios)	-0.02785	-0.49657	0.017108	**0.84419**	0.004241	-0.09881	-0.00094	-0.01896	0.013
r8 (leverage ratios)	0.009583	-0.09171	-0.00093	**0.967364**	0.015713	-0.05013	-0.01439	-0.00559	-0.015
r9 (leverage ratios)	-0.02981	0.016344	-0.05242	0.012766	0.069732	-0.02977	-0.0017	-0.01118	**0.882**
r10 (leverage ratios)	0.018372	**0.407548**	-0.00666	-0.8707	-0.01888	0.111886	-0.0041	0.011251	0.009
r11 (liquid asset ratios)	-0.03375	0.143006	-0.01905	**0.884868**	-0.03456	0.190747	-0.02513	-0.01111	0.01
r12 (short-term solvency ratios)	0.070785	0.05355	-0.05276	-0.03935	0.032435	**0.910284**	-0.02073	-0.02387	-0.042
r13 (activity ratios)	0.006472	-0.03385	-0.01469	-0.01891	-0.00427	-0.02466	**0.993659**	-0.02967	-0.007
r14 (activity ratios)	0.006588	-0.03283	-0.01481	-0.01906	-0.0044	-0.02468	**0.99365**	-0.02973	-0.007
Index of real GDP	0.606109	-0.04731	**0.757781**	-0.01243	0.178003	0.068431	-0.00475	-0.027	0.065
Index of industrial production	**0.853129**	0.019491	0.431874	0.036616	-0.03374	0.085161	0.050251	0.020669	-0.124
Index of real cash incomes	-0.04297	-0.12682	**0.960432**	-0.01338	0.204864	0.034369	-0.02958	0.024585	0.013
Index of real investment	-0.02432	-0.11575	**0.96937**	-0.02586	0.086893	0.01202	-0.03627	0.086313	-0.043
Consumer price index	**0.46544**	0.066387	-0.68776	-0.08996	0.000684	-0.06071	-0.06734	-0.19372	0.326
Year of bankruptcy	0.386125	-0.05129	**0.586726**	-0.00691	0.435599	0.102673	-0.00641	-0.15158	0.277
Refinancing rate	**-0.7453**	-0.06139	0.036467	-0.06302	-0.58793	-0.08338	-0.07329	-0.01798	0
The unemployment rate	**-0.87798**	-0.02348	0.084412	0.031888	0.153289	0.035506	0.024979	0.016132	-0.062
Electricity prices by region	-0.1065	0.142057	0.155776	0.005108	-0.03281	-0.05263	-0.05748	**0.902237**	0.155
Gas prices by region	0.006519	-0.02361	-0.02395	-0.03881	0.016884	0.01552	-0.00758	**0.909312**	-0.168
The price of oil	**0.972007**	0.039454	-0.01373	-0.05993	-0.10986	-0.02777	-0.03386	-0.05459	0.049
Price of gas	**0.733246**	-0.0392	0.137058	-0.19004	-0.02467	-0.14086	-0.16263	-0.10454	0.273
Dollar to ruble	-0.16861	-0.013	0.152963	0.003293	**0.956804**	0.007508	-0.00535	-0.00807	0.003
Euro rate to ruble	0.073766	-0.02592	0.321251	-0.03026	**0.913458**	0.014001	-0.03005	0.002033	0.089
S&P index	**0.765777**	0.02352	-0.23448	0.068521	0.420985	0.049286	0.081859	0.055446	-0.231
RTS index	**0.927406**	0.093659	-0.06357	0.071641	0.00255	0.091269	0.08901	-0.01857	-0.137

Notes. (1) Extraction method: Principal component analysis; (2) Rotation method: Varimax with Kaiser normalization; (3) Rotation converged in six iterations; (4) Underlined: Background variables included in the model of discrimination; (5) Figures in bold: Background variables dominating the main component; and (6) Columns in grey: Principal components that define the background model prediction of crisis situations in the enterprise.

Conclusions

Thus, in the work on the platform of the package of PolyAnalist Megaputer Intelligents' data-mining models of discrimination and classification, separating the internal financial indicators of enterprises and external macroeconomic indicators for emerging and stable by a linear procedure (linear regression)—both internal and external factors are included in the model, which only worsens the separation efficiency of microeconomic indicators in patterns of discrimination and classification of approximately two times. Bankruptcy prediction methods: linear discrimination and linear classification have identical results.

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Journal of Modern Accounting and Auditing, ISSN 1548-6583
June 2013, Vol. 9, No. 6, 808-813

An Empirical Study of the Senior Corporate Managers' Ability to Innovate

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Senior corporate managers' innovation ability and spirit are very important in the growth process of corporate business development. This paper focuses on the innovation capacities of the senior corporate managers of listed companies in China and the complex relationship between firm performance and the operating environment to study and analyze the management and development of Chinese enterprises. Through relevant theoretical analysis and development of research hypotheses using the A-shares in Shanghai and Shenzhen listed companies announced in 2007 and 2008, the authors design an empirical model. The study found that in Chinese listed companies, the higher the innovation spirit of senior corporate managers, the better their business performances; the stronger the dynamic and complexity of the operating environment, the more the corporate managers' innovation ability will be developed.

Keywords: senior corporate manager, ability to innovate, Chinese enterprises

Introduction

With the development of information technology and the impact of globalization, enterprises which used to limit themselves to compete within a single industry now have gradually changed in order to have a better development. As the business environment has become increasingly complex, in order to maintain survival, enterprises must strive to develop their innovation abilities to cultivate their competitive advantages, they must also be initiative and daring to grasp the opportunities and explore the unknown market; in other words, senior corporate managers should also have better innovation abilities to lead the enterprise to innovate. Facing the constantly changing markets, senior corporate managers should continue to think, discuss, and execute innovative ideas, making them the corporate culture, to create the atmosphere and the working environment of innovation, and to let employees know that even if they fail to innovate, they will eventually succeed if they constantly uphold their innovation spirits (Entrialgo, Fernandez, & Vazquez, 2001).

The Concept and Theoretical Analysis

The Concept of Innovation Ability

Schumpeter (1934) proposed the concept of the ability of senior business executives in his famous

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research, putting innovation as the key element. Innovation ability can be considered as the results of the development of new and unique products and services (Morris, Davis, & Allen, 1994), or as a process of supporting the new target (idea) and constantly testing, innovating, and manufacturing new products, services, and production, as well as the commitments of companies to create and bring in new products, services, and production process and organize systems, such as research and development (R&D) costs, patent rights, maintenance costs, etc. (Morris et al., 1994; Zahra, 1996). In this study, internal innovation ability is defined by how many resources are being devoted to innovation. Thus, in this study, the innovation ability of senior corporate managers is defined as: the commitments of the enterprises to create new products, services, and manufacturing process and organize the innovation activities within the enterprises.

Innovation Ability and Firm Performance

Senior corporate managers' innovation ability and spirit are regarded as a kind of strategic thinking or action, and in marketing activities, market orientation, strategic alliance, organizational learning, and other fields, relevant discussions have been carried out. Thus, we can know the importance of senior corporate managers' innovation spirit in corporate management and business activities (Luo, Zhou, & Liu, 2005). In order to study the impact of senior corporate managers' innovation on enterprises, this study selected "firm performance" as the results brought about by the senior corporate managers' innovation spirits.

The Dynamic of Company's Operating Environment

The innovation spirit of senior corporate management will be affected by the environment factors, including the drawbacks of society, science and technology, and industry level. This study selected "industry" as the environmental factor variable, because the enterprise's ultimate goal is to take the leading position and make profits. Thus, it is obvious that industrial operating environment is closely linked to the enterprise.

The Research Hypothesis

We can see that with the development of information which spreads fast all over the world, the customer's demand is more and more changeable, and technological changes have greatly shortened the life cycle of products. In order to conform to this trend, the enterprise must be daring to face the unknown opportunities and undertake the potential risks, besides, they must constantly innovate to speed up the development of the key skills (key capabilities), new products, and new services to surpass its industry competitors. Through senior corporate managers' innovation ability and spirit, the enterprise must incessantly monitor and react to the market change, constantly to create, find, and employ the opportunities (Diamantopoulos, Schlegelmilch, & Palihawadana, 2011), and capitalize these opportunities, thus obtaining economic benefits (Hennebichler, 2007; Jones, 1991). In addition, R&D costs used to be considered as the main performance of the innovation ability by scholars (Zahra, 1996). If enterprises put in more funds for research activities, it usually can result in more innovative products, which in turn produces more economic benefits. In preliminary ability strategy, advertising cost or business, administration, and general cost can also be seen as the acting indicator (Morris et al., 1994), if the company invests more in advertising promotion and publicity activities. The enterprises should improve product sales or higher services quality to attract more customers to help improve the firm performance.

Therefore, this study puts forward the following hypothesis:

H1: The higher the innovation spirit of the senior corporate managers, the better the firm performance.

From industrial changes, we can see that when an industry is in an unstable situation, namely, the environment cannot be accurately predicted or changes fast, the enterprise should innovate more and explore and develop the market. In addition, as the industry environment changes quickly, there will be more unknown market opportunities. Thus, enterprises must actively expand the market in order to maintain its competitive position in the same industry. When the industry environment is complicated, the industry competition concentration (concentration) will not be so high, that is, the market will tend to perfect competition (perfect competition), namely, there will be many competitors in the same industry, the competition in the industry at this time will be more diverse, and the enterprises will have incentives to constantly innovate their products and compete for market shares with their competitors on their own initiatives. In this way, senior corporate managers must highly develop their innovation abilities in order to adapt to the industrial competition environment.

Therefore, the authors establish the following hypothesis:

H2: The stronger the dynamic and complexity of the operating environment, the more the corporate managers' innovation ability will be developed.

Study Design

In the empirical research hypothesis, first, we should ensure the accuracy and scientificity of the data source, and then in designing the empirical model, we must consider how to determine, define, and design variables.

Sample Source

The data used in this study mainly come from the "Chinese listed company financial report China Stock Market Accounting Research (CSMAR) database", "Chinese listed company governance structure research database", and "China's stock market trading CSMAR database" developed by the Tai'an Company, another part of the data comes from the China Securities Regulatory Commission (CSRC) announced on the official website of the listed company data, using 2007-2008 data of Shanghai and Shenzhen Stock Market.

Innovation Ability and the Performance of the Design Variables

Concerning the measurement of the design variable of the senior corporate managers' innovation ability, this study adopts the widely-used research method of Zahra (1996), that is, enterprise management's innovation ability is the R&D costs/net sales, where R&D costs represent the engagement in undertaking innovation activities, indicating that the higher the R&D costs, the higher the innovation ability (Zahra, 1996). The authors select 2006-2008, a total of three years, as the sample period. In measurement of the firm performance, this study adopts enterprises' "profit-making ability", which is commonly used in domestic and foreign research, as the measurement of firm performance, namely, taking return on assets (ROA) and return on investment (ROI) as the indicators of the firm performance (Shavitt, Swan, Lowery, & Wänke, 1994; Petty, Cacioppo, & David, 1983).

The Dynamic of Business Environment and Complexity of Design Variables

In previous sections, the authors discussed that enterprises will bear corresponding risks when pursuing higher pay and high growth opportunities. In addition, the dynamic and complexity of the operating environment are also strong, and the operating environment is closely related to business growth. In the empirical research, Tobin's Q is commonly used to measure the company's growth and represent the dynamic complexity of the operating environment. Tobin's Q ratio is the market value divided by the asset replacement cost, reflecting two distinct value estimations of the enterprise (Luo et al., 2005; Petty & Cacioppo, 1986).

Its computation formula is as follows:

$$Q\ ratio = \frac{Company's\ market\ value}{Asset\ replacement\ cost}$$

Control Variable

Control variable is a variable that has nothing to do with the specific research objectives. In addition to the independent variables and dependent variables that need to be studied and measured, control variable will affect the research results, thus needs to be considered. According to the researches of corporate management from home and abroad, factors that have an impact on enterprise competitiveness, senior corporate management, and firm performance include firm size, debt ratio, etc.. This research also puts the firm size and debt ratio as control variables.

The Empirical Test Model

According to the above theoretical analysis, the authors establish the econometrics regression model to test empirically the research hypotheses.

The empirical model of hypothesis 1 is as follows:

$$Firm\ performance = \beta_0 + \beta_1 Innovation\ ability + \beta_2 Debt\ ratio + \beta_3 Firm\ size + \varepsilon$$

The empirical model of hypothesis 2 is as follows:

$$Innovation\ ability = \beta_0 + \beta_1 Tobin's\ Q + \beta_2 Debt\ ratio + \beta_3 Firm\ size + \varepsilon$$

The Results Analysis

The Descriptive Statistics of Environmental Dynamic and Complexity

This study first analyzes the sample through descriptive statistic analysis. The overall sample mean is 7.2659, the maximum is 13.3989, and the minimum is 2.0763, which not only shows that the whole sample has relatively high growth opportunities, but also indicates that the dynamic and complexity of the business environment are strong. Compared with foreign research results, namely, through the Tobin's Q research results, we can see that the stronger the business growth of enterprises, the stronger the dynamic and complexity of the business environment.

Testing Process of Hypothesis 1

We can see that the correlation coefficient is more significant, but through the test of collinearity between the independent variables, the maximum of Variance Inflation Factor (VIF) is 1.221, and the rest is in the acceptable range. Thus, there is no serious collinearity problem on the whole. The first hypothesis of this study explores the relationship between the innovation spirit of senior business executives and corporate performance. The empirical results (see Table 1) are supported. The test results (see Table 1) show that senior corporate managers' innovation abilities, developed in the course of corporate development, could truly help improve the firm performance and achieve significant business growth. Thus, it is believed that senior corporate managers' innovation spirits and abilities will surely have a positive and significant impact on firm performance. Thus, hypothesis 1 is verified.

Testing Process of Hypothesis 2

The test results are shown in Table 2. The same can also be found: The correlation coefficient is more significant, but through the collinearity test, it is found that between the independent variables, the maximum of VIF is 2.204, and the rest is in the acceptable range. Thus, there is no serious collinearity problem on the whole. In the analysis of empirical test results, senior corporate managers' innovation abilities are positively correlated with Tobin's Q, showing that the higher the value of the innovation spirits of senior corporate managers, the higher the Tobin's Q value of their enterprises. The results show that when enterprises are in pursuit of higher returns and high growth opportunities, they will also have to bear the corresponding risks, that is, dynamic and complex nature of the operating environment will be strong. With strong growth opportunities, senior corporate managers are also required to have a higher degree of innovative ability and spirit, in order to adapt to the industry's competitive environment. Therefore, the research hypothesis 2 has been verified.

Table 1

Testing Results of Empirical Model of Hypothesis 1

All the samples (N = 69)				
Variable	Regression coefficient	t-value	p-value	VIF
ROA	0.03756	4.2381	0.000	1.221
R&D spending/net sales	0.0249^{***}	5.363	0.000	1.003
Net sales	0.0004^{**}	1.212	0.006	0.378
Company size	0.0232^{***}	0.0094	0.005	0.443
Adjusted R^2	0.635			
Durbin-Watson	5.126			
Model F (p-value)	172.55 (0.000)			

Note. ** and *** indicate significance at the levels of 5% and 1%.

Table 2

Testing Results of Empirical Model of Hypothesis 2

All the samples (N = 69)				
Variable	Regression coefficient	t-value	p-value	VIF
R&D spending/net sales	0.0337^{***}	3.372	0.000	2.024
Tobin's Q	0.0451^{***}	2.238	0.000	0.892
Net sales	0.0013^{**}	1.347	0.001	0.775
Company size	0.0552^{***}	0.0129	0.000	0.338
Adjusted R^2	0.545			
Durbin-Watson	4.446			
Model F (p-value)	103.89 (0.000)			

Note. ** and *** indicate significance at the levels of 5% and 1%.

Conclusions

This aim of this study is to combine the hot issue of international business management with the ability of business managers to understand the business situation of enterprises.

As can be seen from the results of empirical research, the proposed two hypotheses have been verified. Therefore, it can be assumed that the enterprises face the uncertainty of the business risk. Corporate managers should be able to take the business risk of the spirit to face the unknown opportunities in the market and always innovate to accelerate the development of enterprises. Increase of the innovation ability leads the company to produce more innovative products, thus generating more economic benefits and improving the firm performance.

Similarly, in Chinese enterprises, the dynamic of operating environment is very strong, which also requires opening up the market with a positive and pre-reaction capability to promote enterprise to provide innovative products and services. It also indicates that the higher the dynamic and the complexity of operating environment, the more the senior corporate managers should cultivate their innovative spirits, because when the dynamic and complexity of operating environment are higher, there will be more opportunities and room for innovation. The innovation spirits of senior corporate managers must also promote the corporate growth; only in this way could the abilities of senior corporate managers be truly manifested.

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Journal of Modern Accounting and Auditing, ISSN 1548-6583
June 2013, Vol. 9, No. 6, 814-822

Loan Loss Provisioning Practices

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The purpose of this paper is to come up with factors in loan loss provisioning practices on commercial banks that reflect on collectability of defaulted loans. The need for this research is due to failures in the loan loss provisioning practices which resulted in loan loss provisions (LLP) not reflecting on collectability of the defaulted loans. As a consequence, the banks do not capture their loss expectations and do not continuously reassess their loss expectations as the conditions affecting their borrowers may change. Henceforth, in their financial reporting, the banks do not represent relevantly and faithfully their true underlying credit risks conditions. When the banks do not represent relevantly and faithfully their true underlying risk conditions, they contradict the objectives of useful financial reporting. The results showed that among explanatory variables, bad debt recoveries as a factor in loan loss provisioning practices that reflect on collectability of defaulted loans was rejected. Bad debt recoveries was a biased variable and inconsistent estimator. In context of perceived credit risks as the basis to make credit judgments, an estimate of bad debt recoveries had not fulfilled the criteria. On the other hand, non-performing loans (NPL) as a factor in loan loss provisioning practices was not rejected.

Keywords: loan loss provisioning practices, commercial banks, non-performing loans (NPL), estimated bad debt recoveries, defaulted loans

Introduction

In giving out loans to borrowers, there is a chance that banks may not be able to collect back the loans as the borrowers may default in repayment. In this case, the banks may not be able to recover part or full amount of the loans. Therefore, the banks would make appropriate provisions for losses on the defaulted loans when it is likely that they would not be able to collect part or all amounts due: principal and interest. Loan loss provisions (LLP) is defined according to Podder and Al Mamun (2004) as "a method that banks use to recognize a reduction in the realizable value of their loans" (p. 731).

The guidance for loans in default status, its classification, and the required provisions are often set by a supervisory body on banks and financial institutions in each country. In Malaysia, it is set by its central bank, Bank Negara Malaysia (BNM). For financial years beginning on and after January 1, 2010, it has issued new

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guidelines which set out minimum requirements on the classification of impaired loans and provisioning for loans impairment. The guidelines are enforced on all its commercial banks.

Classification of Loans/Financing as Impaired

In the new guidelines from BNM issued and effective from January 1, 2010, a loan is classified as impaired where the principal or interest/profit or both are past due for more than 90 days or three months, when LLP is set at 20%. Table 1 shows non-performing loans (NPL) on commercial banks in Malaysia from 1997 to December 2012.

Table 1

NPL on Commercial Banks in Malaysia From 1997 to December 2012

	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012
Total NPL (million)	14,159	44,916	40,877	42,241	53,136	49,890	46,544	48,367	48,444	48,983	40,763	34,285	28,188	29,163	26,706	22,611
NPL/total loans (%)	3.2	10.3	8.8	8.3	10.5	9.3	8.3	7.0	5.6	4.8	3.2	2.2	1.8	2.3	1.8	1.4

Note. Source: BNM, Monthly Statistical Bulletin, various issues with latest one in January 2013 (beginning 2010, loans are reported based on Financial Reporting Standard (FRS) 139. The adoption of FRS 139 requirement is based on the financial year of the individual banks).

The purpose of this paper is to come up with factors in loan loss provisioning practices of NPL that reflect on collectability of the defaulted loans. This research reflects on the lessons learned from the Asian financial crisis in 1997 and the global financial crisis in 2008. Since loan loss provisioning practices now have shifted to focus on addressing previous practices that have exacerbated financial system's pro-cyclicality by being lower when loans are expanding and higher during periods of loans contraction; and as such, a need for a forward-looking provisioning practice under the expected loss (EL) approach (which has replaced the incurred loss (IL) approach that is event-driven). The goal is that it would facilitate the banks to capture the loss expectations for their defaulted loans, and be in a position to continuously reassess changes in their loss expectations as the conditions affecting their borrowers' change. The ultimate aim for the banks, in their financial statements, would represent "relevantly and faithfully" (McConnell, 2011, p. 2) their true underlying credit risks conditions.

Literature Review

In reviewing of literatures on LLP, two classification models are discovered that formed the basis of themes or schools of thought:

(1) Perception is the basis for credit risks assessment analysis;

(2) LLP in achieving certain purposes, such as, for earnings smoothing management, signaling tool; and due to time lag between loan losses and credit growth.

Perception is the Basis for Credit Risk Assessment Analysis

Dermine and Carvalho (2006) reviewed the methodologies in calculating LLP and found evidence that it is a key credit risk input in calculating bank's profitability, capital adequacy, and solvency, and a key ingredient in "mark-to-market accounting" (p. 1). The mark-to-market accounting indicates the existence of active markets with determinable market prices, according to both authors. Dermine and Carvalho (2006) developed two methodologies in calculating equitable amount in provisioning for loan losses, at and after default dates.

The authors apply two methodologies on private real data of NPL from the biggest privately-owned bank in Portugal, Banco Comercial Portugues (BCP). The data contain a total of 374 defaulted loans, most of which are loans to small- and medium-sized companies and the analysis covers from June 1995 to December 2000. From their studies, the authors raise two measurement issues pertaining to credit risk and LLP: (1) a criterion that defines the time of default as it is an event of significant importance in loan loss provisioning practices, because according to Dermine and Calvalho (2006), "Likelihood of being repaid diminishes as time elapses after the default date" (p. 3). Furthermore, according to the authors, different classifications would lead to different results; and (2) the method that measures recovery from the defaulted loans.

In loan loss provisioning practices, as in credit risk assessment analysis, subjective judgment plays an important role in assessing how much of the defaulted loans are expected to be recovered. According to Jin, Yu, and Mi (2012), the banks' expert subjective judgment is used in circumstances of the absence of data, such as, when the data require for "credit rating and defaulting data" (p. 386). In another research, Matousek and Stewart (2009) in their studies on ratings of international banks discovered that banks use expert information in addition to financial ratios in assigning the final ratings to the banks. This is especially the case when a bank's financial position suddenly deteriorates, such as, a sudden surge in "non-performing loans" (p. 149).

LLP in Achieving Certain Purposes Such as for Earnings Smoothing Management, Signaling Tool; and Due to Time Lag Between Loan Losses and Credit Growth

Dermine and Carvalho (2006) referred to earlier findings of Diamond (1984) who reviewed finance literatures on LLP on the basis of several banks' data, where the author grouped issues on LLP into four classes. They are:

> Extent of earnings and capital smoothing, the impact of reported provisions on a bank's stock returns, the systemic impact on the banking industry of disclosure on loan provisions by one bank, and the time lag between credit growth and loan losses. (p. 4)

In another study, Anandarajan, Hasan, and McCarthy (2005) in their research on LLP among Australian banks divided the subject on LLP based on its different usages. They documented three usages "for earnings management, capital management, and (as a tool for) signaling" (p. 7).

In this paper, literatures on LLP are categorized into three categories; they are the various purposes of LLP; for earning and capital smoothing, for signaling tool, and due to time lag between loan losses and credit growth.

Research Methodology

In this paper, traditional or classical methodology of econometrics is employed that uses observational data on bank-specific and macroeconomic factor peculiar to Malaysia. The bank-specific data are secondary data (LLP, NPL, bad debt recoveries, interest income, net profit, and loans and advances) of nine locally-incorporated and three largest, in terms of assets, foreign-owned commercial banks. There are nine locally-incorporated commercial banks in the analysis:

(1) Maybank (Malaysia) Berhad;

(2) Commerce International Merchant Bank (CIMB) (Malaysia) Berhad;

(3) Public Bank (Malaysia) Berhad;

(4) Rashid Hussein Bank (RHB) (Malaysia) Berhad;

(5) AmBank (Malaysia) Berhad;

(6) Hong Leong Bank (Malaysia) Berhad;

(7) Edaran Otomobil Nasional (EON) Bank (Malaysia) Berhad;

(8) Affin Bank (Malaysia) Berhad;

(9) Alliance Bank (Malaysia) Berhad.

EON Bank, on May 9, 2011, became part of Hong Leong Bank following acquisition cost of RM5.06 billion of 100% stake.

Three largest foreign-owned commercial banks in Malaysia are:

(1) Hong Kong and Shang Hai Banking Corporation (HSBC) Bank (Malaysia) Berhad;

(2) Standard Chartered Bank (Malaysia) Berhad;

(3) Citibank (Malaysia) Berhad.

The data are an example of a longitudinal panel data where data are elements of both, cross-sectional (i.e., 12 different banks) and time series (i.e., observations on the values that a variable takes at a different time from 1997 to 2011). The total number of observations in the data is 180 panel data observations, i.e., observations for 15 years for each of the 12 banks.

Theoretical Framework

The dependent or regress and variable is "LLP", and the independent or regressor or predictor variables are "NPL", "bad debt recoveries", "interest income", "net profit", "loan and advances", and "gross domestic product (GDP)". The independent variables, for several reasons, are theorized to provide information in loan loss provisioning practices of the banks. The independent variables are chosen based on previous studies on the subject.

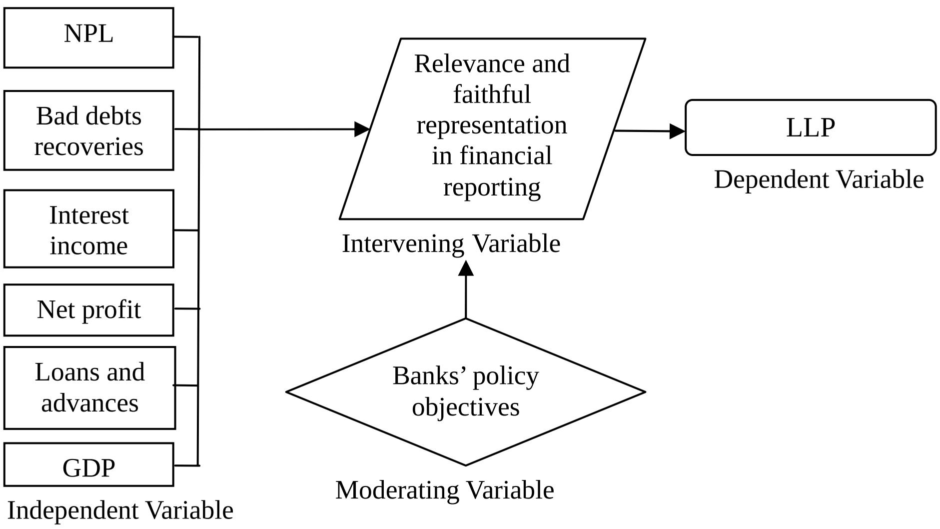

Figure 1. Theoretical framework.

Bad Debt Recoveries

An estimate of "recoveries of bad debts" is one of the independent variables in view of an estimate of "recoveries" used in the calculation of LLP "n" months in arrears. In calculation to determine any estimated losses in loan portfolios would be affected by an expectation of how much "recoveries" are expected. For example, an expectation of recoveries of 80%, three months and less than six months after the days in arrears, would require LLP to be set at 20%. This is an amount to be set as LLP. It is an amount that is estimated not to be recovered. In studies of Podder and Al Mamun (2004), the authors use data on recovery status from settlement of suits in proving that making too many provisions has no relation to bad debt recoveries.

Dermine and Carvalho (2006) also used "past cumulative recovery rate" (p. 14) as one of the explanatory variables in their econometric model in their studies on LLP practices among Portuguese commercial banks.

NPL

Another independent variable is "NPL". In banking crisis, when an economy experienced distressed debt cycles, Rottke and Gentgen (2008) documented evidence of existence of NPL that is present in balance sheet of banks. In another study, Lin and Mei (2006) found evidence that a large number of NPL is the main cause of bank failure. Boudriga, Boulila, and Jelloudi (2009) in analysis of banks in several countries documented that bank failures are mainly attributed to NPL. Therefore, a causal relationship is assumed to exist between NPL and LLP.

Ismail, Shaharudin, and Samudhram (2005) in their studies on Malaysian banks' earnings manipulation practice through LLP constructed their econometric model that included "change in total non-performing loans (NPL) for bank *i* in the year *t*" (p. 44) as one of the independent variables.

Boudriga et al. (2009) regarded LLP as a controlling mechanism over the estimated losses. In their study, the authors refer to earlier findings of Hasan and Wall (2004), "higher levels of NPLs are associated with high rates of provisioning" (p. 289). However, based on their own findings, the authors find evidence of negative relationships between NPL and LLP. Their results indicate that countries with higher levels of NPL exhibited lower LLP and "countries with low rates of NPLs adopted better provisioning policy (higher loan loss provisions)" (Boudriga et al., 2009, p. 298).

Interest Income and Net Profit

One of the purposes of LLP is in studies of Zoubi and Al-Khazali (2007) who found evidence, among others, to smooth earnings. The earnings performance for banks is measured by variables: interest income and net profit. Ho and Zhu (2004) in their studies on performance measurement of Taiwan's commercial banks referred to earlier findings of Ho (2001) who included interest income and Seiford and Zhu (1999) who included net profits as output variables in their measurements of bank earnings.

Ahmed, Takeda, and Thomas (1999) documented earnings smoothing behavior through examination on relationships between LLP and earnings before taxes as an exercise to underestimate LLP during low-year-earning and overestimate LLP in high-year-earning. In this way, banks move earnings among periods to smooth their income over periods of time. The banks have inclinations to achieve several objectives by doing this, and their willingness to provide for loan losses is regarded as a strong belief in their future performance. Therefore, a causal relationship between interest income and net profit on LLP is theorized to exist.

Also, banks' profitability as measured by interest income and net profit may determine the risk-taking behavior of their managers. Where "banks with high profitability are less pressured to revenue creation and thus less constrained to engage in risky credit offerings" (Boudriga et al., 2009, p. 289), which could result in high NPL. Therefore, it is theorized that bank profitability, as measured by interest income and net profit, is negatively associated with NPL.

Loans and Advances and GDP

Balla and McKenna (2009) documented cyclicality of LLP where "during periods of economic expansion, provisions fall (as a percentage of loans and advances), and conversely, they rise during downturns" (p. 393).

In a related study, Dermine and Carvalho (2006) included among others "the size of loan (and advances), GDP growth" (p. 14) as explanatory variables in their econometric model in their studies on loan loss provisioning practices among Portuguese commercial banks. As such, both variables of loans and advances and GDP are theorized to provide explanation of LLP.

Moderating Variable—Banks' Policy Objectives

The moderating variable that has a contingent effect on the independent variable-dependent variable relationship is individual banks' policy objectives pertaining to NPL, bad debts recoveries, interest income, net profit, loans and advances, and GDP. Each of the individual banks' policy objectives pertaining to these variables could moderate the relationships between these variables and the banks' loan loss provisioning practices. For example, although in the existing provisioning schedule, the regulators stipulate that a loan would be classified as impaired when the principal or interest/profit or both are past due for more than 90 days or three months; however, some banks could adopt a more conservative approach as they could classify a loan as impaired even when the principal or interest/profit or both are past due after 30 days or one month.

In other examples, some banks could adopt a more effective credit assessment, monitoring, and recovery processes than other banks, which could thus result in lower levels of NPL and higher levels of bad debt recoveries. Still, in some other cases, some banks, due to their policy objectives, could contribute more to their profits from retail banking than from wholesale banking, whilst others could benefit more from wholesale banking than from retail banking. All these banks' policy objectives could impact different levels of interest income and net profit among the various banks. The argument that individual banks' policy objectives could moderate the relationships between the independent variables and loan loss provisioning practices is supported by Packer and Zhu (2012) in their studies on loan loss provisioning practices among Asian banks. The authors documented that explanatory variables have substantial differences across banks "typically due to additional requirements imposed by supervisor/regulators, and/or linked to bank-specific performance cycles, which is typically driven by individual banks' incentives" (p. 7).

Intervening Variable—Relevance and Faithful Representation in Financial Reporting

The intervening variable that surfaces at the time independent variables start operating to influence the dependent variable and surfaces as a function of independent variables is relevance and faithful representation in financial reporting. This variable has a temporal quality or time dimension.

Today, information contents provided in financial reports of banks have been improved to include information in addition to what is found in a traditional set of financial statements. The financial reports today have become more focused on informational needs of the existing and potential investors, lenders, and creditors as highlighted by McConnell (2011) of International Financial Reporting Standards (IFRS). The standards listed two qualitative characteristics of financial information: fundamental and enhancing.

In calculations of LLP, the reporting needs today are that the amounts of LLP have to be relevant and faithfully represented. Any recovery expected from loan loss provisioning practices must have predictive value of how much of the defaulted loans are expected to be recovered and confirmatory value that it would provide feedback to banks about their previous estimated amounts of recoveries. Furthermore, reporting needs today have been improved in that the amounts of LLP would not be overstated, understated, emphasized, or de-emphasized; and free from errors. The amounts of LLP need not to be perfectly accurate but suffice to be adequate.

The regression model is as follows:

$$LLP_{it} = \beta_0 + \beta_1 NPL_{it} + \beta_2 RC_{it} + \beta_3 II_{it} + \beta_4 NP_{it} + \beta_5 LA_{it} + \beta_6 GDP_{it} + e_{it} \quad (1)$$

where:

LLP = Loan loss provisions, a dependent variable;

i = 1, 2, 3,... 12 (i.e., "i" = identity for 12 banks);

t = 1, 2, 3,… 15 (i.e., "t" = time for 15 years, i.e., from 1997 to 2011);

β_0 = Intercept that is the mean or average value of Y (i.e., LLP) when NPL, bad debt recoveries, interest income, net profit, loans and advances, and GDP are equal to zero;

β_1 = Partial regression coefficient that measures the mean value of LLP per unit change in NPL holding the values of bad debt recoveries, interest income, net profit, loans and advances, and GDP constant;

NPL = Non-performing loan;

β_2 = Partial regression coefficient that measures the mean value of LLP per unit change in bad debt recoveries holding the values of NPL, interest income, net profit, loans and advances, and GDP constant;

RC = Bad debt recoveries;

β_3 = Partial regression coefficient that measures the mean value of LLP per unit change in interest income holding the values of NPL, bad debt recoveries, net profit, loans and advances, and GDP constant;

II = Interest income;

β_4 = Partial regression coefficient that measures the mean value of LLP per unit change in net profit holding the values of NPL, bad debt recoveries, interest income, loans and advances, and GDP constant;

NP = Net profit;

β_5 = Partial regression coefficient that measures the mean value of LLP per unit change in loans and advances holding the values of NPL, bad debt recoveries, interest income, net profit, and GDP constant;

LA = Loans and advances;

β_6 = Partial regression coefficient that measures the mean value of LLP per unit change in GDP holding the values of NPL, recoveries, interest income, net profit, and loans and advances constant;

GDP = Gross domestic product where GDP = 1, if the GDP for the year is higher than that of the previous year; GDP = 0, if otherwise;

e_{it} = Random error.

Findings

Fixed Effect Model

In using a fixed effect model, it allows for heterogeneity features among the banks. All 180 observations are pooled where each of the 12 banks has a different intercept. Although each of the banks has a different intercept, each bank's intercept does not vary over time. The intercept is time-invariant. Henceforth, this model is termed "fixed effect".

A revised regression model is as follows:

$$LLP_{it} = \beta_{0i} + \beta_1 NPL_{it} + \beta_2 RC_{it} + \beta_3 II_{it} + \beta_4 NP_{it} + \beta_5 LA_{it} + \beta_6 GDP_{it} + e_{it} \quad (2)$$

where subscript i on intercept term would suggest that intercepts of 12 banks may not be the same because of special features that are unique of banks in sample, such as different policy objectives, managerial philosophy, managerial style, or loan appetite.

Table 2

Fixed Effect Results

Variable	Coefficient	Std. error	*t*-statistic	*P*-value
Constant	47.55942	35.71204	1.332	0.1850
NPL	0.175779	0.028696	6.126	0.0000
RC	-0.251943	0.067513	-3.732	0.0000
II	0.203114	0.048521	4.186	0.0000
NP	-0.273155	0.061160	-4.466	0.0000
LA	0.037588	0.017759	2.117	0.0360
GDP	-26.06822	26.27798	-0.992	0.3230
Effects specification: Cross-section fixed (dummy variables)				
R-squared	0.623424	Mean dependent var.		4,122,342
Adjusted *R*-squared	0.612224	S.D. dependent var.		232.1267
S.E. of regression	1,561.364	*F*-statistic		26.52512
Sum squared resid.	4,837,847	Prob. (*F*-statistic)		0.000000

Notes. Dependent variable: LLP; Method: Pooled least squares (fixed effect); Included observations: 180; Cross-sections included: 12; Total pool (balanced) observations: 2,160.

In above results, average of the fixed effect for all 12 banks is 47.55942. This is the average of fixed effect for all the 12 banks. As seen from Table 2, NPL is positively related to LLP; it is statistically significant and with a strong relationship with a *t*-statistic of 6.126.

LLP has a negative relationship with bad debt recoveries (*RC*), and it is statistically significant ($p = 0.000$). For these variables, the interpretation is for every $1,000 increase in NPL, it is estimated about $0.175779 increase in LLP, and for every $1,000 increase in bad debt recoveries (*RC*), it is estimated about $0.251943 decrease in LLP. The R^2 of 0.623424 indicating 62.3424% variance of LLP is explained by NPL, bad debt recoveries, interest income, net profit, loan and advances, and GDP.

Conclusions

The results showed that among explanatory variables, bad debt recoveries as a factor to determine LLP that reflects on the collectability of the defaulted loans is rejected. The reason is that the variable is a biased and inconsistent estimator. In the context of perception as the basis in credit risk assessment analysis, the first classification model discussed in literature review, an estimate of recoveries, has not fulfilled the criteria. This is in agreement with Podder and Al Mamun (2004) who discovered that collection of bad loans has no relation to LLP.

On the other hand, NPL as a factor to determine LLP that reflects on the collectability of the defaulted loans is not rejected. The results showed that the variable is not a biased estimator. This is in agreement with the findings of Rottke and Gentgen (2008), Lin and Mei (2006), and Ismail et al. (2005) who documented causal relationships between NPL and LLP. The results implied that NPL provides an assessment analysis of perception of credit risk in determining the amounts of LLP.

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Journal of Modern Accounting and Auditing, ISSN 1548-6583
June 2013, Vol. 9, No. 6, 823-843

Bangladesh Economic Development Model (BED Model)*

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Bangladesh economy has experienced some stable growths with regard to major macroeconomic indicators, significant progress in social development indicators, rural infrastructure, investment in industrial agricultural sector, and poverty alleviation since the 1990s. Bangladesh has made major strides in its human development index (HDI), population growth rate achieved to 1.3%, gross domestic product (GDP) over the last five years achieved more than 5% growth consecutively; as a result, it mooted the Brazil, Russia, India, China (BRIC) successors, otherwise known as the Next-11. The success has come through the miracle activities of micro finance (MF: Grameen Bank and non-governmental organizations (NGOs)), remittance from migrant worker (RMW), and export of readymade garment (ERMG) products. These three (MF, RMW, and ERMG) as the "prime powers" or engines have been achieving to "bottom up" of social economic development. This paper reviews aspects of economic development in Bangladesh, analyzes three prime powers, and tries to find out a development pattern, vis-à-vis construct Bangladesh economic development model or BED model. Finally, this paper examines Bangladesh's development experience in light of the BED model. It has recognized MF model for poverty alleviation in the worldwide.

Keywords: micro finance (MF), Grameen Bank, non-governmental organizations (NGOs), remittance from migrant workers (RMW), export of readymade garment (ERMG), self-employment, micro enterprises, prime power

Introduction

Micro finance (MF), Remittance from migrant workers (RMW), and export of readymade garment (ERMG) have been contributing to economic growth and social development in Bangladesh. According to the Bangladesh Bureau of Statistics [BBS] (2011), the per capita income of gross national product (GNP) becomes US$750 (Taka 47,281) in 2010 (Government of Bangladesh [GOB], 2011) which was only US$120 in 1972. And at the same time, poverty line was (US$1 a day) more than 70% of the total population (Hussain, 2010) and reduced to 31.5% in 2010. The economic growth rate has been continuing more than 5% since 2000. This progress of poverty alleviation and economic growth of Bangladesh pushes forward to the Brazil, Russia, India, China (BRIC) successors, otherwise known as the Next-11. According to Union Bank of Switzerland, Bangladesh will be the 12th largest industrial country in 2050 (*The Daily Star*, 2008). Optimistic prognoses suggest that with the appropriate economic and related social policies and institutional reforms, it may become

* **Acknowledgments:** This is the revised version of a paper entitled *An Analysis on Bangladesh Economic Development (BED-Model)* in Japanese presented at *the 87th Conference of the Japan Economic Policy Association (JEPA)*, Nishi Nihon Branch (West Japan) on April 16, 2011, at Kyushu Sangyo University, Japan. The author's deepest gratitude goes to Professor Sato Hideki, Kyushu Sangyo University, Japan, and participants in the conference for their highly thoughtful comments, discussions, and suggestions on the topic.

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a middle-income country (GNP of US$875) by 2016.

However, since the independence in 1971, Bangladesh has experienced economic development more than 40 years, showing that the country had made significant economic and social gains since the 1990s; its poverty alleviation, human development achievements were remarkable in reaching a number of the millennium development goals (MDGs) especially of reducing poverty by half by 2015 from the benchmark level of 1990. These achievements came though three prime powers, like MF, RMW, and ERMG. This study has enquired these three prime powers (MF, RMW, and ERMG) and analysis of economic development pattern. On the basis of research over the last 25 years, the author has undertaken poverty alleviation and MF in different articles (Chowdhury, 2003; 2004; 2005a; 2005b; 2006) on Bangladesh. This paper has examined data from government organizations, research papers, and documents focusing on MF, poverty alleviation, flow of remittance from international migrant workers, and earning foreign currency through ERMG. The national data have disaggregated by three broad sectors, namely, primary, secondary, and tertiary. Empirical studies have been conducted in research papers, surveys of research, international reports, the Asian Development Bank (ADB), Japan International Cooperation Agency (JICA), the World Bank (WB), the United Nations (UN), and the internet.

This paper is organized as follows. Section 2 offers the study of Bangladesh economic development (BED) pattern for the discussion of this paper. Section 3 offers an analysis of BED model. Section 4 discusses the social economic development in Bangladesh from international perspective. Section 5 presents the empirical analysis and the conclusion.

The Study of BED Pattern

For more than half a century, there have been heated debates on the sources of economic growth of the developing economies (Lewis, 1954; Solow, 1956; Chenery & Strout, 1966; Denison, 1967; Myrdal, 1968; Harris & Todaro, 1970; Schultz, 1980; Fields, 1980; Romer, 1986; Lucas, 1988; Barro, 1991; Easterly & Levine, 2001). The perceived sources of economic growth have ranged from surplus labor to physical capital investment and technological change, foreign aid, foreign direct investment (FDI), investment in human capital, and increasing returns from investment in new ideas and research and development. Other researchers such as Sen (1990) and Kaufmann, Kray, and Mastruzzi (2007) have also focused on the impact of institutional factors, such as the role of political freedom, political instability, voice, and accountability on economic growth and development.

Over the last two decades, world bodies, like the WB, the UN, the ADB, and many national and international research institutions, have drawn attention on poverty alleviation, MF, and other problems on Bangladesh. A large number of researches have constructed theories and models on poverty alleviation, MF, Grameen Bank, and environment, whereby there has not much research on macroeconomic development, economic development model, or theory on Bangladesh. The purpose of this paper is to find out the real situation on poverty alleviation, industrialization, and economic growth in Bangladesh.

Bangladesh has faced many challenges since 1971, and it has been undergoing the revolution activities of MF, RMW, and ERMG. It has been generally agreed that encouraging the MF is an effective way of alleviating poverty and fostering economic growth, despite conflicting evidence obtained in several studies. This debate has prompted the author to investigate the roles of MF, RMW, and ERMG in poverty alleviation and economic growth in Bangladesh. Here, it has been understood that the development process is triggered by the poverty reduction, growth of informal sector, and transfer of surplus labor in the rural traditional sector to the urban modern sector in which some significant economic activities have already begun. Looking back historically at the country's economic development and poverty alleviation, Bangladesh's efforts through certain stages of development can be explained as depicted in Figure 1.

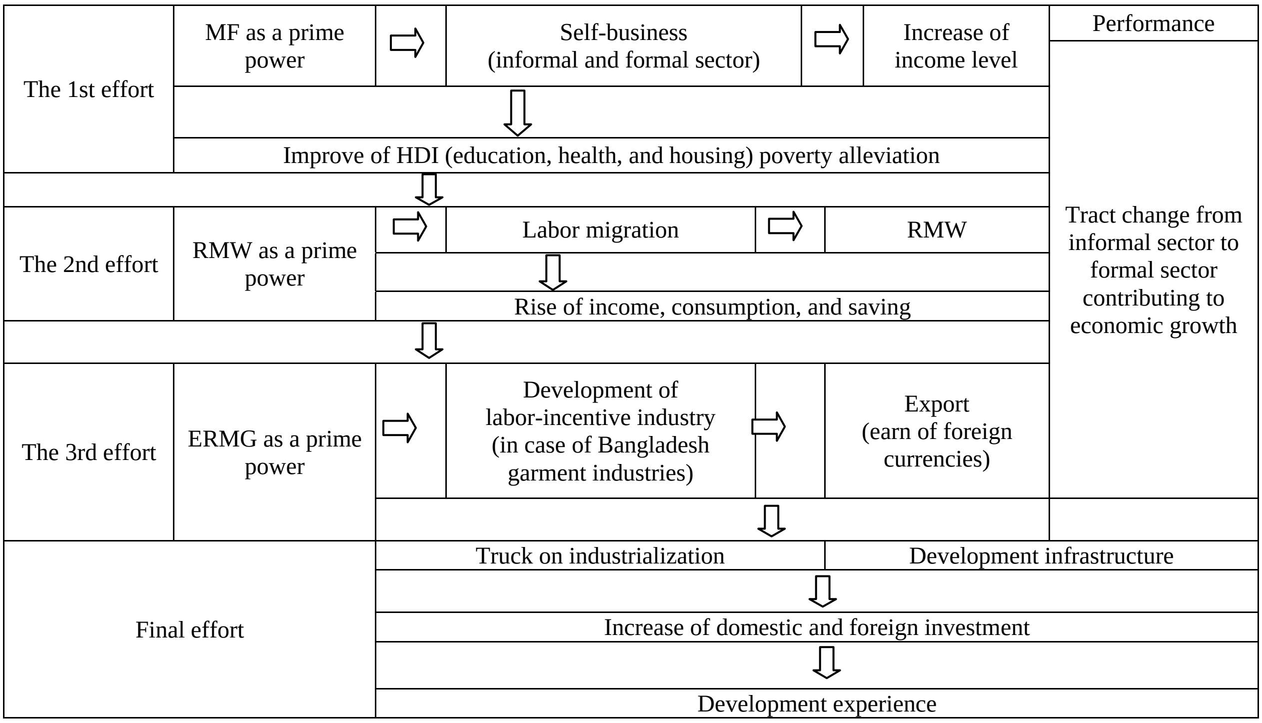

Figure 1. Development pattern of BED pattern. Source: Compiled by the author.

To explore the MF-RMW-ERMG growth poverty nexus, one could take a reduced form of analysis and/or a structural form of analysis. It has been generally accepted that there are three key events and two causal linkages among them: ERMG affects growth and RMW impacts poverty (that is, in two logical steps), as illustrated in Figure 1. And two opposing views, positive and negative, prevail about the impact of ERMG on poverty via growth. The positive view argues that ERMG favorably affects (fosters) Bangladeshi growth and incomes for workers, thereby contributing to poverty alleviation, whereas the negative view holds that RMW aggravates poverty—whether or not it stimulates or stunts the developing countries' growth, because globalization (via international businesses) entails inequality in favor of the rich and against the poor.

However, the development pattern of micro and macro linkages is shown in Figure 1. In this pattern, it does not consider the linkage of micro enterprises and small- and medium-sized enterprises (SMEs). Also, it is very difficult to find reliable statistics of the value-added process. One will simply think that linkage has only been impacted by consumer behavior caused by inflation or deflation. In this context, since value-added activity of micro enterprises is almost independent from productive activities by SMEs and large enterprises, they could maintain a stable condition until they have been influenced by the change of consumer behavior that has been caused by inflation or deflation that comes from the government's mis-control of the monetary supply. Also, the micro world could remain sustainable, because it has been independent from exports and imports which are quietly affected by the fluctuation of the international market (Kameyama website).

The basic behavior pattern of the micro enterprise sector is almost the same as in the independent model. The micro enterprise world is growing despite interruptions that come from changes in exports/imports, investment, and currency trades. However, interruptions do not just affect growth internally. Growth of the macro world has also been interrupted by changes in the virtual world, coming from investment and risk hedge mechanisms. The macro world does not receive so much impact from the micro enterprise sector except the change of consumer behavior, but it is not such a big impact (Kameyama website).

The First Effort: MF[1]

MF has been used as a tool for alleviating global poverty for about 40 years. Billions of dollars have been loaned and the stories of success are impressive. As of December 31, 2009, there were 1,395 micro finance institutes (MFIs) globally with an estimated borrower base of 86 million with a total outstanding portfolio of over $44 billion as reported by the MFIs to the Microfinance Information Exchange or “MIX Market”, excluding MFIs that do not report to MIX Market (three MIX Markets “Microfinance at a Glance—2008”). If they did report, the total size of the global MF industry is estimated to be roughly 200 million borrowers (four Monitor-Inclusive Markets—Stretching the Fabric of MFI Networks, December 2009). There have been many studies over the years by many diligent researchers in academics, non-profit organizations, and MFIs (Snodgrass & Sebstad, 2002; Morduch, 2000; Coleman, 2005; Hoque, 2004; Sebstad & Chen, 1996; Simanowitz & Walter, 2002; Cheston & Reed, 1999; Brau & Waller, 2005; Aghion & Morduch, 2005).

The first effort MF is important to poverty alleviation through “MF programs” or “micro credit programs” which have brought about desirable impacts at the rural level in terms of income, employment, and production, especially in the non-agricultural or informal sector. “Self-employment” of the poor pioneered is an innovation now being replicated worldwide as a tool for poverty alleviation. MF may not have done directly an economic growth miracle so far, but its contribution is significant to “bottom up” approach. In this effort, poor people will have better chances to show the real power of MF in changing their income, lives engaged in business activities or micro-enterprises have increased family income, reducing poverty and ultimate goal to accelerate economy growth. Accessing small amounts of credit is an opportunity to set up one’s own small business or micro enterprise. Micro enterprises provide income and employment for significant proportions of workers in rural and urban areas by producing basic goods and services for rapidly growing populations. In response to this need for financial support to poor, innovative and successful approaches have been applied in the developing countries and regions in the development of MF and its related institutions. An excellent example of this was the development of group-lending schemes for landless rural poor people, emphasizing long-term development and sustainability. In order to successfully replicate group-based lending for poverty alleviation, the poor may need organizational help and other inputs to improve their income and productivity. The term of group lending means that five women form a group which is collectively responsible for all individual loan; seven to 10 groups form a center[2]. This scheme led to the development by Prof. Mohammad Yunus, founder of the Grameen Bank in Bangladesh which served more than 8 million borrowers in 2010 (more than 90% of them were women) and as a model of poverty alleviation for other countries[3]. It has been mentioned before that MF refers to the provision of financial support to the poor, including the self-employed.

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[1] This section has been analyzed based on studies of Chowdhury (2001; 2003; 2004; 2006), Islam (2004), and Osmani, Mahmud, Sen, Dagdeviren, and Seth (2003).

[2] Grameen Bank was designed to supervise between 50 and 70 center buildings located within a 2.6 mile radius of the branch building. Members receive loans at the branch office and repay the loans at the center buildings.

[3] Retrieved from Grameen Bank website (http://www.grameen-info.org/).

The MFIs offer both group-based and individual loans to micro entrepreneurs. Therefore, the MF-operated NGOs funded with own resources like deposits of borrower members, service charges on loans, and other income. In addition, external donor grants, bank loans, and Palli Karma Shahayak Foundation (PKSF, partner organization of NGOs in Bangladesh) support MF-operated NGOs. The government of Bangladesh has increasingly been drawn to targeted development, following the examples set by the Grameen Bank and other NGOs. An expanding form of poverty alleviation activity by government is the establishment of a conduit for channeling credit funds. According to Microcredit Regulatory Authority [MRA] (2010) Bangladesh, there have been 503 micro institutes operated in Bangladesh serving 30.16 million clients and active borrowers to increased 24.48 million borrowers in 2010 (GOB, 2011). The outstanding loan portfolio for these programs totaled over US$2.2 billion. This large MF sector reaches 37% of Bangladeshi households, which is among the highest coverage in the world (WB, 2005). The largest NGOs (Bangladesh Rural Advancement Committee (BRAC), Proshika, and Association for Social Advancement (ASA)) and Grameen Bank account for the large bulk of total microcredit lending. Table 1 shows the recent performance of government organizations and NGOs' dominant MF lenders.

Table 1

Trends of MF in Bangladesh (Unit: 100 Million Taka)

Organization of MF	1998 accumulated	2000	2005	2010 accumulated
MFIs (NGOs)	535.44	301.99	781.53	12,331.5
Grameen Bank	1,009.0	160.07	459.05	4,983.1
PKSF	46.82	11.80	36.60	831.0
BRDB	111.64	24.89	68.37	343.3
Banks*	442.14	69.69	93.47	264.6
Government organizations	160.63	65.88	98.56	1,211.4
Total (100 million Taka)	1,306.76	634.32	1,440.56	19,964.9
US$ million	2,875.16	1,175.76	2,346.57	28,859.35

Notes. * Excluding private banks, PKSF, Bangladesh Rural Development Board (BRDB). Source: Compiled from GOB (2011, pp. 184-192).

Bangladesh, achieving to reduction of poverty and at the same time ensuring that the fruits of economic growth are equitably shared by a large number of population lie in the development and utilization of her human resources. The long-term trends in poverty show notable progress since its independence. According to BBS (2010), nationwide household income and expenditure surveys, the proportion of population living below the poverty line was as high as 71% in 1973/1974, which dropped to 31.5% in 2010 as found by the latest survey. This gives a long-term poverty reduction rate of 1.65% per year. While this rate is considerably lower than rates observed in high-performing economies of East and Southeast Asia, it was a commendable achievement, after decades of slow economic growth and rising poverty levels (Osmani et al., 2003).

Bangladesh's governmental and international monitoring groups have found that the incidence of income poverty declined during the 1990s and the new millennium**.** Changes in the human poverty index also show a significant decline in poverty, especially during the same period. Since 1990, the incidence of poverty in Bangladesh has been measured in five-year cycles on the basis of the nationally representative household income and expenditure survey. Poverty (poverty incidence), which stood at 72% of 75 million people in 1970, fell to 59% in 1980 and further to 49.8% in 1990, 40% in 2005, and finally, the most recent survey in 2010 found that the incidence of poverty in the country fell to 31.5% and the population doubled 150 million in 2010 (see Table 2). The average annual rate of poverty reduction needed to reach the MDG target by 2015 is 1.23%, while the actual rate achieved up from 2000 to 2005 was 3.9% (Government of Bangladesh [GOB], 2009). Professor Yunus believes that 5% of Grameen Bank's clients overcome poverty each year (*The Economist*, 2009).

Table 2
Trent of Poverty Alleviation in Bangladesh

Year	Incidence of poverty	Change in poverty	GDP growth (% per year)
1986-1991	51.7 (1985/1986)[a]	+1.18	2.46
1991-1996	58.8 (1991/1992)	-1.43	4.50
1996-2001	53.1 (1995/1996)	-0.83	5.29
2000	49.8	-1.0	4.8
2005	40.0	-1.3	5.9
2010	31.5	-1.5	6.1

Notes. [a] Using the "cost of basic needs" method. Source: Rahman and Nabuil Islam (2003); BBS (2011).

However, it was becoming clear that the original Grameen concept, microcredit provided to establish or expand income-generating projects, was transmuting into the much wider concept of MF, meaning the supply of a whole range of financial services to the poor, including microcredit, micro-insurance, micro-savings, and so on (Hulme, 2008). In particular, as Dichter (2007) has stressed, it was becoming quite clear that most microcredit is actually used not so much for income-generating projects, but mainly to facilitate consumption spending. While consumption smoothing is a useful survival technique, this transformation represents a quite dramatic break with the original Grameen Bank innovation. Notwithstanding, support for MF as poverty reduction and "bottom-up" development policy has remained virtually unchanged. However, the role of MF in poverty alleviation and economic growth has emerged as an important field not only for policy makers but also for academic research.

The Second Effort: RMW

For many developing countries, however, remittances represent a major part of international capital flows, surpassing FDI, export revenues, and foreign aid (Giuliano & Ruiz-Arranz, 2005). A recent WB (2006) study suggested that recorded remittances have grown faster than FDI or official development assistance (ODA).

Like many others, developing country's international migrant workers and remittances have contributed to employment, economic growth, poverty alleviation, and social development in Bangladesh. Bangladesh is a labor-abundant country, and the total civilian labor force of the country has been estimated at 57.1 million, of which 40.2 million are male and 16.9 million are female (BBS, 2011). It has sent over an estimated 7.7 million migrant workers to worldwide since the mid-1970s, representing near 5% of the total population and 10% of the labor force. Most of these workers temporarily migrate to Europe, America, Middle East, and Southeast Asia. The flow of remittances has $11.65 billion in fiscal years of 2010-2011[4], exceeding four times higher than the total aid and nine times the FDI received by the country (Siddiqui, 2009). Globally, Bangladesh is the 6th largest remittance-recipient country in 2010, and ranked the 19th position in terms of its share of remittances to GDP in 2009 (Ratha, Mohapatra, & Silwal, 2010).

[4] Retrieved from Bangladesh Bank website (http://www.bangladesh-bank.org/).

Bangladesh is one of the leading remittance-recipient countries in South Asia region. The flow of remittances has become one of the largest foreign exchange earners for the country. Remittance income increased from low US$24 million in 1976, which shows a dramatic increase of 400% from US$9,689.3 million to over US$11.65 billion in fiscal years of 2010-2011 and accounts for 13.68% GDP of the country. Due to world economic crisis, the migrant workers from Bangladesh have fallen from 21% to 17.85% in 2009 and 2010 respectively. Remittances are also associated with increased household investments in education, entrepreneurship, and health—all of which have a high social return in most circumstances. Remittances have emerged as a key driver of economic growth and poverty reduction in Bangladesh[5].

In the past, the bulk of the migrants consisted of professional and skilled, semi-skilled, and unskilled labor migration (see Table 3). In the study of Siddiqui (2009), it is found that there are 875,055 people who migrated in 2008, of which, 32% were skilled, 16% were semi-skilled, and 52% were unskilled. Migration has decreased by over 17% to 383,150 in 2010 from 465,351 in the previous years[6]. In terms of skill composition of the short-term migrant workers, professional workers comprised doctors, engineers, teachers, and nurses; semi-skilled workers comprised tailors and masons; and unskilled migrants are employed in construction, manufacturing, and services such as domestic workers. The huge increase in outward migration as indicated above makes Bangladesh one of the major remittance-recipient countries in the world.

Table 3

Trent of Remittances and Migrant Workers in Bangladesh

Year	1975	1980	1985	1990	1995	2000	2005	2006	2007	2008	2009	2010
Total labor force (million)	21.9	25.9	30.9	51.2	56.0	56.0	65.5	66.6	68.0	69.4	69.4	70.7
Migrant labor (000)	6.08	38.45	78.42	110.0	181.0	213	291	564	981	576	475	390
(1) Professional (000)	0.57	1.98	2.56	6.00	6.35	10.66	1.94	0.9	0.67	1.86	1.42	0.38
(2) Skilled (000)	1.77	12.20	28.22	35.61	59.90	99.60	113.65	115.46	165.33	281.45	134.26	90.62
(3) Semi-skilled (000)	0.54	2.34	7.82	20.79	32.05	26.45	24.54	33.96	183.67	132.82	8,458.41	20.01
(4) Unskilled (000)	3.20	13.53	39.07	41.40	89.22	85.95	112.55	231.15	482.92	458.91	255.07	475.27
Remittance ($ million)	23.71	379	555	763	1,217	1,882	4,802	5,979	7915	7,891	10,717	11,650.0
Share of remittance GDP (%)	0.03	2.95	3.55	3.62	5.78	3.73	7.75	8.73	10.05	9.99	10.85	10.95
Literacy rate (%)	27.0	29.0	30.2	35.0	45.3	48.4	52.1	53.6	55.8	56.1	56.1	56.1

Note. Source: Compiled from GOB (1990; 2005; 2011).

Employment generation is the most feasible poverty reduction strategy which requires investment in labor force to make them skilled and self-employed to increase their returns of labor. One needs to keep in mind that efficient labor force is the wealth of nations, not money and metal alone. Major outflow of Bangladeshi labor has generated significant financial flows to the country in the form of remittance. However, due to increase in the flow of unskilled and semi-skilled labor, remittance is increasing at a much lower rate than the labor flow. Remittance has been crucial for Bangladesh's economy. It constitutes almost one-third of the foreign exchange earnings. In the period of 1998-1999, remittance has contributed 22% in financing imports. Studies have shown that it has a strong and positive impact on GDP and also on consumption and investment. However, most of the

[5] Retrieved from Bangladesh Bank website (http://www.bangladesh-bank.org/).
[6] Retrieved from BMET website (http://www.bmet.org.bd).

empirical evidence explained the contribution of remittances on both the economy and the household level. Table 4 shows that there is no big difference as shown in 2001-2005 survey, but 2009 survey shows a big difference from other surveys. However, utilization pattern of remittances in Bangladesh explores that 20.45% to 81% of remittances are used for food and cloths, more than 11% for agricultural land purchase, 7% to 15% for home construction and repair, above 10% for repayment of loan (for migration), 9% or less than 9% for social ceremonies, 7% for sending family members abroad, and finally, only more that 4% are used for investment in business and more than 3% for savings (see Table 4).

Table 4

Economic Activities of Remittance Sent From Abroad Survey in Different Years (Unit: Taka)

Avenue	Share of economic activities of migrant workers (%)			
	Siddiqui and Chowdhury (2001)	IOM (2002)	IOM (2005)	IOM (2009)*
Food, clothes, and medicine	20.45	34.4	20-36	81
Agricultural land purchase	11.24	11.5	3-40	5.1
Home constriction/repair	15.02	11.2	2-30	7.3
Release of mortgaged land	10.55	16.7	10-19	42.6
Social ceremonies	9.07	3.7	0-10	2.9
Child education	2.75	2.1	0-5	29.8
Savings/fixed deposit	3.07	3.1	3-7	7.1
Others	7.19	3.5	0-7	1.3
Investment in business	4.76	5.4	0-5	1.5
Insurance	3.22	3.5	0-4	34.2

Notes. Study C* survey was conducted by IOM in 2009; 10,565 households were interviewed throughout the country. Percentages add to more than 100% due to multiple answers provided by respondents. Source: Siddiqui and Chowdhury (2001); International Organization for Migration [IOM]/United Nations Development Program [UNDP] (2002); IOM (2005; 2009).

However, remittance can have significant positive impacts on household well-being and economic growth through improved income opportunities, knowledge transfers, and increased integration in the global economy (WB, 2006). Studies have shown that it has a positive impact on GDP and also on consumption and investment in Bangladesh. This paper explores the impact of migrant workers, remittances on poverty alleviation in Bangladesh. The analysis presented in this paper further indicates that these remittances may have significant effects on other macroeconomic variables as well. In this second effort, some researchers have found the cycle: Some migrants return to Bangladesh for retirement or set up a business or work, making use of knowledge acquired abroad (Buchenau, 2008).

The Third Effort: Industrial Development and ERMG

Ready-made garments (RMG) have contributed the highest share of foreign exchange earnings. Table 5 shows the importance of RMG exports in respect to foreign exchange earnings of the country. In the economy of Bangladesh, the RMG industries stand at the forefront of industrial development with labor-intensive production of goods for the local market. It provides jobs, serves domestic demand for clothing and other textile products, offers a productive investment outlet for local capital, and brings multiple benefits to the nation and society. The industry brings together millers, traders, bankers, merchants, etc..

Economic growth has also been accompanied by a shift in the relative importance of different sectors in the Bangladeshi economy. The services sector now accounts for more than 50% of GDP, while the share of agriculture has declined from 25% to 19% between 2000 and 2005. Industry accounted for 26% of GDP in 2005 with the RMG sector being the main source of manufacturing growth (WB, 2008). These shifts are no doubt important parts of the explanation for the pattern of human resources across urban and rural areas, which contributed to different sectors in creating employment and reducing poverty.

Although Bangladesh is taking steps to diversify its export base, the RMG sector still generates more than 78% of export earnings. Export of RMG earned US$17,914.5 million or 78.97% of the total export earnings of Bangladesh (see Table 5). This relative share of apparel exports has steadily increased for several years, indicating that in both absolute and relative terms, the industry has dominated the modern economy of Bangladesh for some time now. In addition, the positive sociological, demographic, political, and economic impact of employing 3.6 million in the manufacturing sector is huge. A major part of the labor force specially women operative in RMG industry (Munir & Salim, 2000). With the growth in netting, the ratio of female workers increased to more than 80%, most of whom were daughters from poor firms, and they entered RMG factories obtaining some advance payments and lived in an urban area. The sector is seen as critical to the government's poverty reduction and gender equality goals because of its predominantly female workforce, drawn mainly from rural areas.

Table 5

Production, Export, and Progress of RMG Industry in Bangladesh

Year	Factory	Employee (in million)	Production (in million doz.)	Export (in million $)	Total export (in million $)	Share of export (%)	Share of GDP (%)
1985	594	0.19	2.8	131.48	819.21	16.05	5.25
1990	834	0.40	19.6	866.82	1,717.55	50.47	8.16
1995	2,353	1.29	48.82	2,547.13	3,882.42	65.61	9.53
2000	3,480	1.80	71.48	4,860.12	6,467.30	75.15	12.83
2005	4,220	2.20	108.82	7,900.80	10,526.16	75.06	17.00
2010	5,150	3.60	475.00	17,914.5	22,924.40	78.97	17.86

Note. Source: GOB (1990; 2005; 2011).

In the third effort, the industrial development takes place in a way that they must produce final products or consumer goods to fulfill the needs of the domestic market, which in turn comes out as an import substitution, ultimately producing goods available for export. This could be regarded as export-oriented industrialization. Import-substitution policies are reflected in the adoption of import restriction on final products, imposing tariffs and quotas (tariffs and quotas usually apply only to final consumer goods, capital goods, and raw material, and other imported inputs are usually not subjected to tariffs or quotas) and sometimes at levels which make imports prohibitive. This leaves the domestic market open for domestic producers. The foreign exchange implements a pricing policy to encourage domestic production of substitutes for imported goods. In addition, government offers a series of financial incentives in order to encourage local and foreign enterprises to set up domestic production facilities. These may take the form of tax holiday period, the provision of finance at low interest rate, facilities of industrial estates, i.e., export-processing zone (EPZ), and utilities at concession rates. In this stage, the domestic market usually turns into a market for domestic industrial goods. As production is put on a larger scale for mass production, an urgent need arises for foreign exchange earnings to import raw materials, machinery, equipment, and spare parts.

In the context of BED strategy, government has emphasized the liberal economic policy, import substitution, export orientation of garment industry, labor-intensive outcomes which are the early stages of economic development in the country. The industrial sectors in Bangladesh, which were set up earlier under the policy of import substitution, used to produce substandard goods and supplies to domestic markets. The industries have also long been shielded by years of tariff and non-tariff protection. The reason thereof is certainly not the dearth of any entrepreneurship in this country. There are signs that private sector enterprises, especially small-scaled enterprises, have already adopted an import substitution and export-oriented strategy as way of industrialization. The success of' the RMG and some other export-oriented ventures would alone bear out the entrepreneurial qualities of the new generation of businesses. These features of the garments industry have consistent with the strategy of labor-intensive, import-substituted, and export-oriented industrialization in Bangladesh.

The forward and backward linkage industries and services, such as textiles, accessories, transportation, and packaging, have also been large beneficiaries. Forward linkages will be undertaken though rationalization and improvement in the incentives’ policy structure. It is expected that value-added substantial gains will accrue in the RMG industry through export-oriented industrialization. In addition, the export-led growth strategy aims at employment generation, poverty alleviation, and closing the trade deficit (Chowdhury, 2001). The public exchequer has also gained and foreign investors have been exposed to Bangladesh as a result of this success. However, the biggest gainer must be the private entrepreneur in Bangladesh who now has a role model to follow. The spirit of entrepreneurship is thriving in Bangladesh. The proof for this view is the success of the apparel export sector.

The RMG industries have created job opportunities, save foreign currencies by making substitutions for imports, earn foreign exchange through exports, and reduce dependence on foreign economic assistance. In general, RMG has introduced greater opportunities for women workers. Because of this exposure, women workers have also been contributing to socio-cultural systems and socialization processes in the country. The ultimate goal of the development of RMG industry in substitution for import as well as export oriented has, more typically, marked the take-off period for Bangladesh.

Analysis of BED Model

Bangladesh’s macroeconomic and social development achievements have been impressive over the last two decades. The sustained macroeconomic stability, health and education indicators have improved, gender parity has achieved in primary and secondary education, and the incidence of poverty has steadily declined.

The MF has patronized to poor in informal and formal sector to engage with enterprises by whether they are existing or start-up economic activities, by their level of business development (if it is unstable, stable, or growing), and by their area of business activity focus on production, commercial, or service. The above analysis shows that the level of business development is important when identifying the different types of micro enterprise to which an MFI wishes to provide financial support and invest its own capital or RMW. There have been different levels of business development of micro enterprises and RMW which have been benefited from access to financial support.

Mechanism of BED Model

There has been a general recognition of the important role of MF which gives a better chance to alleviate poverty in Bangladesh. During the last few years, Bangladesh economy has experienced some ups and downs with regard to major macroeconomic indicators. In respond to this MF, RMW and ERMG demonstrated robust growth (see Table 6). However, the aim of the BED model to analyze the potential contribution of the MF, RMW, and ERMG has been to alleviate poverty and accelerate economic growth.

Table 6

The Contribution of Prime Power to GDP Growth in Bangladesh in 2010

Prime power	Million $	Share of GDP (%)
MF	25,942.53*	21.90
RMW	11,650.0	10.95
ERMG	17,914.50	17.86

Notes. * Cumulative total data in 2009. Yearly GDP share of MF is less than 2%. Source: Compiled from GOB (2011).

In this study, the author has assumed that socioeconomic development is the underlying mechanism for poverty alleviation. In the past 30 years, Bangladesh has experienced socioeconomic changes and moderate economic growth. It has integrated the effect of Bangladesh's socioeconomic factors on the projection of its MF, RMW, and ERMG. Overall speaking, rural female labor force participation is related to socioeconomic development and serves as an important factor in employment generation and contributes to reduce poverty.

MF progress in Bangladesh has required significant and complementary innovations in social and economic structures. Creating a micro enterprise and social framework favorable to economic growth is often the greatest challenge facing the nation. Yet, Bangladesh has frequently advised to adopt models of economic institutions that can only succeed if advanced social institutions exist.

Figure 2 shows that MF is the extension of small loans to poor entrepreneurs and ultimate result to create employment, production, and trade, and it contributes to import substitution and export-oriented industrialization. It turns out to be an effective and popular measure in the ongoing struggle against poverty, enabling those without access to lending institutions to borrow at bank rates and start small businesses.

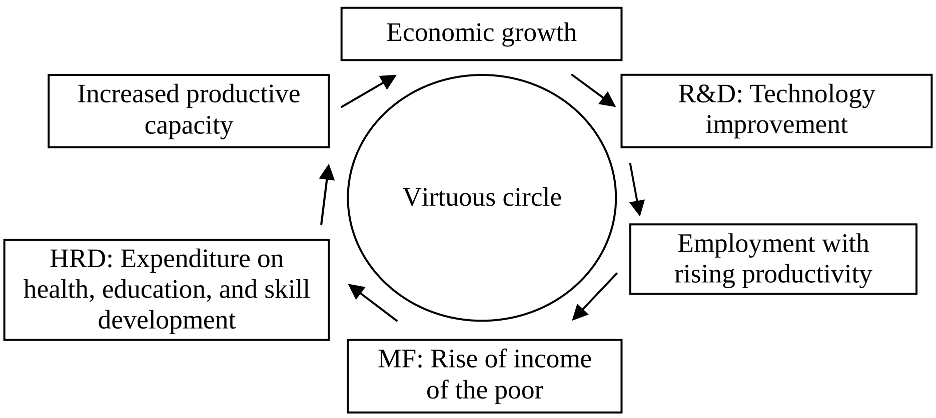

Figure 2. Virtuous circle of links among employment, poverty reduction, and economic growth.
Source. Compiled by the author from Islam (2004).

The economic growth process in Bangladesh can be made to pass through the same states in the distorted order when the process is distorted with MF, RMW, and ERMG. The BED model refers to the relationship between income and poverty reduction as an economy develops, where economic development is defined and measured by increasing income per capita. According to this model, as incomes increase, poverty decreases, i.e., human resource quality also increases, but only up to a point whereupon additional increases in income lead to entrepreneurships, i.e., improvements in enterprises and production quality.

The Contribution of BED Model[7]

The study has found the impact between economic development and BED pattern. As noted by an official associated with labor migration, remittances have been causing a silent economic revolution in Bangladesh (Bruyn & Kuddus, 2005). However, the broader impacts of RMW in the economy have not been fully assessed. The study has examined the impact of MF, RMW, and ERMG on the economic growth of Bangladesh (see Table 7). The study has used annual data of a large group of developing researches.

As mentioned before, the economic growth rate has shown that the per capita income has stood at US$750 dollars in 2010; at the same time, the GDP growth rate is more than 6% (see Table 7). Despite a slight slowdown in economic growth, due to global economic crisis and high pressure on the import bills due to price hikes of crude oil and other essential commodities in international market in 2008, Bangladesh's foreign trade remains at a satisfactory level. With a steady pace of development, the country has secured its place among the mid-income countries within a short period of time (Chowdhury, 2007).

Table 7

Trend of Macroeconomic in Bangladesh

Year	1975	1980	1985	1990	1995	2000	2005	2010
Population (million)	71	87	97.8	104	119	124	137.8	147.7
Population growth rate	2.45	2.31	2.26	2.14	1.81	1.41	1.49	1.3
Nominal GDP (100 million $)	71.82	128.36	155.91	210.37	407.04	503.97	618.97	1,184.16
Real GDP growth rate (%)	5.7	3.4	4.4	3.4	5.3	5.97	6.63	6.1
Per capita income GDP ($)	203	277	330	277	330	388	429.33	751
Per capita income GDP (%)	1.3	1.4	2.1	1.5	2.6	4.6	4.2	5.1
Inflation (%)	16.0	13.4	10.1	8.9	6.7	1.94	7.17	8.8
National savings GDP (%)	3.0	4.4	5.8	19.7	20.0	22.4	26.6	28.4
Investment GDP (%)	5.5	14.4	12.7	16.9	20.0	23.1	25.0	24.7
Foreign currency reserve (100 million $)	NA	1.21	4.76	8.8	30.3	16.0	28.55	109.12
Export (100 million $)	3.80	7.10	8.18	17.21	38.86	100.1	105.26	162.04
Import (100 million $)	9.76	25.33	23.65	36.00	68.77	69.29	147.59	213.88
Foreign investment (100 million $)	0.0	0.05	0.02	0.02	1.64	1.48	6.50	9.13

Notes. NA: Data are unavailable; Study period: July 1-June 30 (fiscal year). Source: Compiled from GOB (1990; 2005; 2011).

The poverty alleviation has contributed rural economies through informal sector, as a result, the economic growth also increased, and agricultural sector (crops, fisheries, forest, and livestock) growth played an important part, generating incomes in rural areas where Bangladesh's rural poor predominantly reside. Improvements in income, food security made an important contribution to fall in poverty line and to the progress made in combating incidence of poverty in rural areas. Higher output of informal and agricultural sectors has contributed to rural development, incomes and employment increased, and the perennial food shortage problem has largely been solved.

[7] There are enough researches on poverty reduction in Bangladesh. Here the main purpose is to analyze poverty reduction and economic growth, which had happened in Bangladesh case. Therefore, it only examines poverty reduction trend.

However, the MF depends not only on the alleviation of poverty of its clients but also on the long-term sustainability of benefits that have accrued to borrowers. The members of Grameen credit households are either landless men or women; one of the prime concerns of targeted Grameen credit is to raise their sustainable income, increased consumption level as well as savings, assets, and net worth. Under Keynesian principles, the net impact of the transfer depends on the portion that would be spent on consumption in Bangladesh. Even in the short run, MF and RMW have contributed to the growth of output in the economy by augmenting aggregate demand if the remittance-receiving households spend most of these transfers on consumption. RMW and ERMG indeed have played a significant role in the economic development of Bangladesh. Here, the achievements of social development and economic performance are explained as follows.

Self-employment. Some research found that some successful micro enterprises have simultaneously enlarged to small or medium scale enterprises by their own capability. However, it has made a very positive contribution to the rural economy by creating new employment opportunities leading to higher income to producers and linked formal sector. According to some research, no reliable data have brought in dynamism and new hope for diversifying occupational activities beyond agriculture and enabled achievement of sustainable livelihood system in rural areas. As a result in reviving and revitalizing rural informal sector for sustainable development at the grass root level and thereby reduction of rural poverty in the long run.

With increasing labor force participation among women of rural areas in Bangladesh, a greater number of women depend on micro enterprises in the informal sector for survival. Hence, micro enterprise development is increasingly being seen as an essential ingredient in the promotion of broad-based growth in improving the well-being of the poor and women by providing significant income and employment-generating opportunities and by encouraging indigenous investment. Consequently, there have been increasing policies which focus on the need to strengthen entrepreneurship and the contribution of micro enterprises to attain economic growth with equity, as well as in addressing gender and poverty reduction issues.

Savings and investment. High savings and investment rates are important in view of their strong and positive association with the GDP growth rate as suggested by endogenous growth theory (Romer, 1986; Lucas, 1988). The savings and growth rates become endogenous. However, since the labor requirement may not be binding in the context of many developing countries who often have “unlimited supplies of labor” (Lewis, 1954), the one-factor model would be appropriate, so that growth would be proportional to the savings rate, prompting Lewis (1954) to argue that:

> The central problem in the theory of economic development is to understand the process by which a community which was previously saving and investing 4 or 5 percent of its national income or less converts itself into an economy where voluntary saving is running at about 12 to 15 percent of national income or more. This is the central problem, because the central fact of development is rapid capital accumulation (including knowledge and skills with capital). We cannot explain any “industrial” revolution until we can explain why saving increased relatively to national income. (p. 155)

Savings-deferred consumption plays a critical role in economic development, because it is the basis of accumulating investment capital. The investment rates as a share of GDP improved steadily from 15% in 1981 to 20% in 1995, to 23.1% in 2000, and further increased to 28.4% in 2010 (see Table 7). The preceding year caused a decline in public investment, while private investment rose modestly.

MFI and Grameen Bank have improved access to and efficient provision of savings, credit, and insurance facilities, which, in particular, can enable the poor to smooth their consumption, manage their risks better, build their assets gradually, develop micro enterprises, enhance income capacity, and enjoy an improved quality of life vis-à-vis Grameen Bank has started social business with multinational enterprises, which is a path of new capitalism (Yunus, 2010). MF services can also contribute to the improvement of resource allocation, the promotion of markets, and the adoption of better technology. Without permanent access to institutional MF, most poor households continue to rely on meager self-finance or internal sources of MF, which limits their abilities to actively participate in and benefit from the development opportunities (Harvie, 2003).

Savings is an integral part of the Grameen program. It is designed to address production and other risks as well as market imperfections. If savings is a function of income, a balance of US$135 million savings by Grameen borrowers is definitely an indication of their increased income and capacity building[8].

Improvement of HDI and empowerment[9]. Even under pressure, Bangladesh meets key MDGs for country of more than 160 million people among only a few countries in the world. Bangladesh ranked the 128th among 177 countries in the HDI based on life expectancy, educational attainment, and income indicators of the UNDP (2009) (as cited in *The Daily Star*, 2008). The areas in which Bangladesh has made significant progresses include increase in life expectancy at birth from 45 years to 65 years between 1970 and 2005, decrease in infant's mortality rate, improvement in adult's literacy rate, and access to safer water for 74% of the population (GOB, 2007).

Economic growth. Bangladesh has provided MF to the poor serving a dual purpose. First, as borrowed capital has been invested in a small enterprise, it often results in a significant short-term increase in household expenditure and welfare (Pitt & Khandker, 1998). The second goal of micro enterprises' credit programs is to spur economic growth in the informal sector through fostering increased capitalization of businesses, employment creation, and long-term income growth. Even if the BED pattern of prime power has spent on consumption or real estate, there are still multiplier effects and increases in demand for goods stimulated by these activities, once again showing the economic growth (see Figure 3).

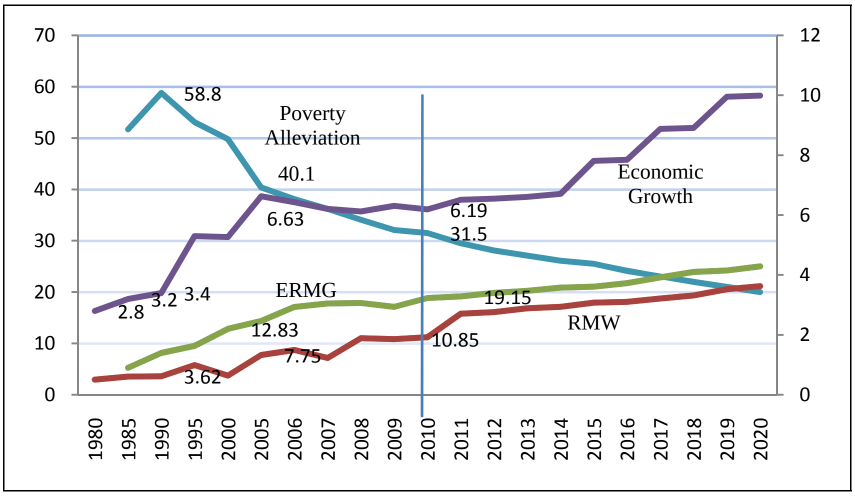

Figure 3. Performance of BED pattern. Source: Compiled from GOB (2000; 2005; 2011).

Progress and expansion of informal sector and linkage with formal sector. There are various types of direct and indirect linkages between the informal and formal sectors, with the level and scope of these linkages

8 Retrieved from Grameen Bank website (http://www.grameen-info.org/).

9 This section has been rewritten and up to date from Chowdhury (2005), *Education for the Empowerment of Women in Bangladesh.*

varying from one activity to another. The promotion and strengthening of linkages, especially complementary ones, between the two sectors can accelerate the development of the informal sector along with that of the formal sector. The formal sector could help the informal sector by providing it with inputs, marketing its products, supplying it with work through sub-contraction, and providing credit and technical assistance in order to improve the quality of the sector's goods and overall productivity. In Japan, by the mid-1980s, the productivity differences between small and large firms had narrowed sharply through their integration. The integration compelled the upgrading of the efficiency and quality standards in small firms, and wage differences between small and large firms were reduced. While technical assistance would help informal sector enterprises to integrate with the formal sector, the latter may also need assistance in extending its institutional reach to the informal sector (UNESC, 2006).

In the relationship between the two sectors, the formal sector is usually considered as the exploiter of the informal sector because of its dominant position in the market. The formal sector unilaterally sets the prices of the inputs and outputs and, in the process, appropriates a substantial part of the surplus generated in informal units. One way of dealing with the problem of exploitation could be to provide informal units with information on market conditions and prices. Another could be to organize informal producers into business associations in order to strengthen their bargaining power. At the same time, policy measures to make the formal sector more competitive would reduce its exploitative power, since a more competitive formal sector would seek to improve its links with the informal sector in order to maximize its profits by having the informal sector perform work at a lower cost.

It may not be possible to formalize all informal producers and workers. Therefore, the ultimate objective should be to gradually reduce the share and size of the informal sector so that the formal sector grows and the incomes and standards of living and working conditions of the population in general improve.

Importance of micro, small, and medium-sized enterprises (MSMEs). The importance of development of SMEs as well known in East Asian experience, the innovative microcredit program of micro enterprises is a relatively new concept. The MSMEs contributed to disadvantages stemming from remoteness, lack of education and health care, insecure and unproductive jobs, and high fertility. The poor need legally secure entitlements to assets and technology, access to markets, opportunities to participate in decentralized resource management, and access to microcredit. Such policies and plans not only promote the economic growth but also help alleviate poverty. Microcredit has the possibility to generate a multiplier effect on the economy of Bangladesh. Founding a solid base for small-scaled industries has contributed to the large-scaled industries as a forward linkage, importation of industrial technology. Moreover, it has supported agro machinery, fertilizer, chemical, etc. as well as other industries. Such an inter-sectoral development has increased the income as well as purchasing power of the whole nation, and recycle of wealth will take place in the long run, which will lead to a complete take-off of the economy.

A micro entrepreneur usually owns a micro enterprise. As mentioned before, there is no specific definition of micro enterprise, cottage industries also include with it. The micro enterprise is engaged in agriculture-related activities, such as poultry, livestock, dairy, rice/oil mills, agriculture equipment making, and trading in inputs such as seeds and fertilizers, non-farm enterprises such as petty trading, small businesses in transport, timber, bakery, medicine/pharmacy, and enterprises' manufacturing bricks, ring slabs. Among them, the most profitable enterprises with a potential for growth are shop keeping and petty trading.

According to one estimate, small and cottage industries employ more than 80% of the total industrial workforce (GOB, 2003) The MSMEs have contributed Taka 741 billion equivalent of 20%-25% to the GDP in 2003. A national private sector survey of enterprises in Bangladesh mentioned that there are approximately six million MSMEs which include enterprises with up to 100 workers. About 31 million people or 40% of the population aged 15 years old or older are employed in MSMEs in both urban and rural areas, while over three-quarters of MSMEs are located in rural areas (Chowdhury & Kazuhiro, 2006). In addition, the survey shows that in rural areas, nine million people (13% of adult population) already work in non-agricultural small and micro enterprises (*The Daily Star*, 2003).

Empowerment of women. The key role of micro enterprises in employment generation has been recognized. They are also important in the training of labor and in the diffusion of technologies as well as managerial skills. Greater emphasis on developing microcredit could also yield significant dividends in terms of improving the spatial distribution of enterprises, shifting the current trend towards urban areas and handful of major industrial areas.

However, micro enterprise gives a better chance to empowerment of women in Bangladesh. It may not have done fast, but its contribution is significant. When the economy growth will high rate, the poor people will have a better chance to show the real power of micro enterprise in changing their lives. The micro enterprise has also found that women themselves have been benefited by channeling cash in the family which improves their position and bargaining edge in the household, which are often linked to empowering outcomes.

Social Economic Development in Bangladesh From International Perspective

A comparison of the experience of the East Asian countries which have been more successful than their South Asian counterparts in terms of growth and poverty reduction shows that the former, in general, performed better in terms of human capital as well (Islam, 2004). Investment in human capital, both in terms of education and skill training, therefore, needs to be an important ingredient in a country’s strategy for pro-poor growth (Islam, 2004).

Having recognized the importance of economic growth, it is essential to point out the importance of a structural shift of employment towards higher productivity of non-farm sectors. In countries with an abundance of labor, such a structural shift should involve growth of the relatively labor-intensive sectors and sub-sectors, e.g., labor-intensive manufactures and other non-farm activities (in both urban and rural areas). The country for the challenge has not just one of moving to a higher growth path (Bhattacharya & Deb, 2006), but also towards achieving a shift in their employment structures towards informal to formal and higher productivity of non-agricultural sectors. But given the low base of modern manufacturing sector, rural non-farm activities need to be looked at as possible sources of higher productivity employment. In spite of that, during the past 25 years, a number of Asian countries have achieved remarkable progresses, transformed themselves, and passed through a couple of development stages from largely agrarian, underdeveloped economies into dynamic industrial and export-oriented industry. The economies of South Korea, Thailand, and Malaysia each reached upper-middle income status within a span of about 25 years, achieving remarkable improvements in the standards of living and quality of life for their citizens. Malaysia undertook giant economic development “Vision 2020” in the year of 1990 to fully develop Malaysia like other developed nations in the world by the year 2020. It is very surprising that within only a very short period of time, this country has been able to develop its economy very rapidly. The Malaysian government is confident that it will be able to develop the country fully in all aspects by the year 2020.

Rapid growth and structural change have reduced poverty in East Asian economies. Income inequality has been low in Korea and Taiwan, but has risen in recent years with economic liberalization. In the Southeast Asian economies of Thailand, Malaysia, and Indonesia, poverty rate has declined, while income inequality trends have varied, rising most clearly in Thailand. The East and Southeast Asian Pacific region has achieved rapid industrialization and gained massive foreign investments since the mid-1980s. Therefore, FDI has played a substantial role in providing capital and technology necessary for industrialization and in contributing to the high economic growth rate in the Asian Pacific region[10]. In the 1970s, Japanese FDI led the high economic growth of the East Asian regions, which became newly industrialized economies (NIEs), with Japan as the pulling or leading goose, and then, the NIEs and Japan both led Southeast Asian or ASEAN countries, the later geese (Chowdhury, 2003).

Poverty generally tends to decline when economic growth is on the rise. Economic growth can help reduce poverty through an increase in household income, providing earnings to obtain the minimum basic needs. Various studies on poverty and economic growth (Kakwani, 1993; Kakwani & Pernia, 2000; Osmani, 2002), however, have found that economic growth alone is insufficient for enhancing poverty reduction. The pattern and sources of growth, as well as the manner in which its benefits have distributed are significant in achieving the goal of poverty reduction. The conventional wisdom is that high rates of economic growth are more likely to be associated with high levels of inequality in the distribution of income.

In its separated regression analyses, the study has found that the increase in GDP per capita lowers poverty. On this first component, it is almost universally accepted that economic growth has a necessary condition that brings about an increase in income, which, in turn, pushes people out of poverty. In a celebrated study, Dollar and Kraay (2002) argued that "growth is good for the poor", supporting the well-known hypothesis that "growth is good for the poor". The findings do not imply, however, that growth and price stability or low inflation rate is all that is needed to improve the lives of the poor. There is obviously a whole range of historical factors and contemporary macroeconomic aspects that play a part in determining what happens to poverty. In other words, to make sure that economic growth benefits the poor, the economic growth should not only be labor-intensive, but it should also be accompanied with sound policies on fields such as land reform or asset redistribution, education and health care facilities, access to credit market, infrastructure development, market facilitation and elimination of market distortions, fair competition, labor market flexibility, social safety net, and agricultural development. With respect to poverty inequality, the analysis with the decomposition approach has not come up with a definitive result. One explanation for this has the problems of possible endogeneity not only inequality affects economic growth, but the latter may also have influences on inequality (Lubker, Smith, & Weeks, 2002). Also, many factors other than economic growth per se may affect inequality.

Conclusions

The foregoing analysis of major macroeconomic trends as well as developments in the real economy suggests that the overall state of the Bangladesh economy has remained steady during the last few years. Driven

[10] The development of the East and Southeast Asian economies has already received much attention (Singh, Putti, & Yip, 1997; Chow & Kellman, 1993; Krugman, 1998; Ramstetter, 1998; Higgott, 1998; Hatch & Yamamura, 1996; Fields, 1993; Dunning, 1993, 1995; Chen, 1997; Linder, 1986).

by both domestic and external demands, the economy has very well achieved more than 6% economic growth. The country has an underutilized workforce and a vast amount of unexplored natural resources such as gas and coal. It is pertinent, that by better utilizing the natural and human resources, the country can augment economic output and ensure a higher standard of living for its citizen.

From the above discussion of a theoretical approach, it has been found that Bangladesh has made the first transition or is in the take-off stage. While most low-income countries depend largely on the export of primary commodities, Bangladesh has made the transition from being primarily a jute-exporting country to a garment-exporting one. This transition has been dictated by the country's resource endowment, characterized by extreme land scarcity and a very high population density, making economic growth dependent on the export of labor-intensive manufacturing. Bangladesh has been able to transform itself from a predominantly aid-dependent country to a trade-dependent country. Now, the country has poised for the second transition and has driven to maturity stage and further to achieve mass production stages (Rostow, 1990). Bangladesh needs steady growth based on high-quality manufactured goods. The RMW is also a very important factor for economic growth and development. This will evidently require a breakthrough in the performance of the external sector.

Concerning the economic status of Bangladesh, it has also been found that although the performance of economic growth is not very high compared with some of the experiences in East and Southeast Asian Pacific regions, the future seems to be very promising. In recent years, a shift in the attitude of the government of Bangladesh towards deregulation of economic activities, privatization of state-owned enterprises, and liberal policies on foreign investment in economic activities has had positive bearings on economic development as well as drive to middle-income country. The author strongly believes that Bangladesh needs to develop a "can-do" attitude and work ethic. It also needs to upgrade its corporate culture and improve its "bureaucratic processes". It needs to learn and replicate the experiences of Southeast and East Asian countries, such as Malaysia, Thailand, South Korea, China, and Vietnam. It needs to open mental windows and focus more on its strategic approach. The country also has to streamline the underlying market economy so as to further encourage FDI. However, solution to these problems has brought about a tremendous take-off and maturity stage towards economic progress (Rostow, 1990), which will makes to channel to a middle-income country of Bangladesh. There may be some questions about this study which will be the focus of future research.

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Journal of Modern Accounting and Auditing, ISSN 1548-6583
June 2013, Vol. 9, No. 6, 844-855

DAVID PUBLISHING

The Some New Aspects of the International Business Theory and International Economy

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Different positions of the member states of the World Trade Organization (WTO), especially the developed and developing countries and also the United States of America (USA), the European Union (EU), and Japan representatives, were observed during the Doha Round of trade negotiations under the WTO. The problems of agriculture protection in the developed countries, for example in the EU and USA and also in the developing countries, were becoming serious obstacles during the negotiations. Despite the undeniable benefits of the multilateral WTO forum for trade liberalization, the rapid increase of North-South bilateral and multilateral free trade areas (FTAs) begs a systematic explanation for why some forums are prioritized relative to others. The main aim of the article is the presentation of some new aspects of the international business theory in the context of international economy. The article presents the mercantilist tendencies in the international trade policy, the theory of public choice in the foreign trade policy, protectionist pressures in different political systems, the level of protectionist pressures, food producers' pressure, and conflicts between the tendencies to sustainable international trade liberalization and environmental protection.

Keywords: trade policy, theory public choice, liberalization, protectionist pressures, environmental protection, mercantilist tendencies

Introduction

The decisions taken by the representatives of the governments participating in the World Trade Organization (WTO) are, to a significant degree, influenced by various lobbies, such as organizations and unions of food producers or other non-governmental organizations, including trade unions. The problems of mutual relations between the representatives of governments and those non-governmental organizations which influence multilateral trade negotiations conducted on the forum of WTO are the subjects of the analysis in the undertaken research program, while special attention has been paid to the trade conflicts between the European Union (EU) and the United States of America (USA).

The biggest confrontations within WTO involved agricultural problems. They could also be observed in other areas, such as steel industry, textile industry, or in an environmental protection. There are serious conflicts existing between the idea of international trade liberalization and environmental protection, since one has to consider what is more profitable, environmental protection or international trade liberalization.

Different positions of the USA and the European Community representatives could be observed during the

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round of trade negotiations. The governments of those two economic powers found themselves under a significant pressure of food producers who had serious difficulties with the sale of agricultural products surplus in the situation of the limited world market and lower prices. The problems of agriculture protection in the EU, the protection resulting from the Common Agriculture Policy (CAP) of member countries, were becoming serious obstacles on the way to the final decisions of the Doha Round.

The Mercantilist Tendencies in the International Trade Policy

The tendencies in international trade development can create changes in domestic markets, placing pressure on political actors to obtain aid from the government especially during the economic crisis. There are also the groups which want to coordinate activities and change foreign trade policy. Government provides the justification for protection of the domestic market in response to global competition. Essentially, the government appears to supply protection for affected parties; yet, the overall impact on consumers, producers, and foreign competition is negligible (Thies & Porche, 2007). Significant government ownership of the productive resources of a country has a negative effect on trade liberalization, while fragmentation of decision-making authority, expressed as fragmentation within the government and pluralism in society, has a positive impact on the liberalization of trade policy (Kennedy, 2007).

In the area of foreign-policy analysis, the focus has been on “three i’s”: interest groups, international structure, and ideas (Kennedy, 2007). In the interests groups literature, government policy is viewed as the outcome of competition among groups for trade policies that benefit their industry (Nau, 1989; Milner, 1995; Milner & Yoffie, 1989; Schattschneider, 1935). International structure suggests that free trade was a reflection on US interests and its hegemonic status after the World War II, while a decline in free trade is a reflection on the US’s hegemonic decline (Krasner, 1976). The literature on ideas suggests that policy beliefs are reflected in laws and institutions. These laws and institutions, in turn, carry a type of interia that continues to influence policy outcomes long after changes in international and domestic structure would predict policy change (Goldstein, 1989; 1995). In contrast to these explanations, government interests in the economy and in maintaining stability also play a large role in trade policy (Kennedy, 2007).

On the one hand, a multilateral forum with near universal membership offers maximization of gains from trade and reduced transaction costs. However, a single state cannot expect to have much control over trade partners or liberalization agendas at the multilateral level. On the other hand, bilateral free trade areas (FTA) often yield very small gains from trade and usually increase transaction costs by producing idiosyncratic sets of rules. But at the same time, a large state can acquire a high level of control in terms of partners, issues and agenda selection, and sectoral exclusions or inclusions based on domestic political needs (Pekkanen, Solis, & Katada, 2007). One can contend that industrialized aggregate economic gains are in the interest of national welfare (largest in multilateral forums) or that seeking control over rules is in line with political interests (greatest in bilateral forums).

The liberalizing rules on agriculture and other less competitive sectors are no longer an acceptable political price for the economic gains bundled across sectors. In the ongoing Doha Round, the agreement to end agricultural subsidies by 2013 calls for a substantial part of these subsidies to be eliminated well before then. Yet, this sort of vague statement fosters uncertainty for domestic actors at home in uncompetitive sectors like agriculture and in several cases like for example in Japan, trade officials need to show that they have more concrete control for political reasons: an element more credible in a bilateral setting than a multilateral one

(Pekkanen et al., 2007). This situation may also indicate the back from globalization to the mercantilist tendencies in the foreign trade policy.

The Theory of Public Choice in the Foreign Trade Policy

Traditionally, political economy models of trade policy have tended to focus on the demand for protection, with factor endowments driving political reactions to exposure to international trade. Such models simply assumed that adversely affected economic agents would organize to seek protection, which would be afforded to them by their elected representatives in the political system. The supply side for trade policy was either ignored or underspecified in most models (Thies & Porche, 2007).

In the foreign trade policy theory, interesting are the reviews of Alt, Frieden, Gilligan, Rodrik, and Rogowski (1996) and Nelson (1988) about the demand for trade policy in terms of the theoretical importance of factor specificity. Factor specificity refers to the ease with which factors (land, labor, and capital) can move from one sector to another in an economy. The two dominant approaches to explaining the demand side of trade policy used radically different assumptions about the specificity of factors. The Heckscher-Ohlin model, used by Rogowski (1989) in his seminal contribution *Commerce and Coalitions*, assumes very low-factor specificity. The low specificity of factors means that factor returns are equalized throughout a region’s economy. Producers should export goods that intensively use their abundant factors and import goods that intensively use their scarce factors, with the result that owners of abundant factors will favor free trade and owners of scarce factors will favor protectionism. Trade policy coalitions will therefore be organized along factor or class lines. On the other hand, the Ricardo-Viner assumes that some factors are stuck in their present uses. Therefore, factor returns are not equalized throughout a region’s economy, but are industry-specific. Trade policy coalitions should form along the lines of exporting versus import-competing industries.

Neither of these models explains how preferences over trade policies are actually translated into political action (Alt et al., 1996). In a discussion of the endogenous tariff literature, Nelson (1988) noted that the mobility costs of the specific-factor model may be a result of productivity differentials, labor union activity, or individual preferences for membership in a given geographic area, industry, or firm (i.e., some form of solidarity) (Nelson, 1988). In all of these cases, one can derive a link to preferences for tariff policy, “but without additional information on why the specific-factor model is chosen, it does not tell us much about political organization” (Nelson, 1988, p. 806).

Alt et al. (1996) suggested that one can begin to understand this process by assuming that rational individuals make cost/benefit calculations. The Heckscher-Ohlin and Ricardo-Viner models tell us the benefits that individuals hope to receive, but the costs of collective action also intervene as they organize to achieve those benefits in the political system. Olson (1985) argued that small groups with specialized interests are easier to organize and are more effective in securing economic rents than large groups with diffuse interests. Small groups are more able to control free riders than large groups, and groups with specific or homogenous interests can more easily coordinate and target their activities than groups with diffuse or heterogeneous interests. This approach is thought to explain the success of agricultural producer groups in the developed countries in organizing for protection as well as the inability of agricultural producer group to organize in the developing countries (Anderson, 1995; Coleman, 1998; Olson, 1985, 1986; Sheingate, 2001).

However, Nelson (1988) pointed out that we should not assume that organized interests will be equally responsive to all issues. Institutionalized interaction among actors may help explain systematic patterns of action, especially as institutions created for specific historical purposes may outlive those purposes. Alt et al. (1996) suggested that if a particular group has paid the fixed costs of establishing collective action and developed well-worn channels of access to public officials, it may defend its trade policy preferences even when the stakes are low because the marginal costs of action are low. It may be the case that "a much more affected but inchoate group does nothing, because the start-up costs of organization are too daunting" (Alt et al., 1996, p. 696). Past strength of an organization should therefore be an important intervening variable predicting group action on trade policy. Further, as Nelson (1988) argued, once these institutions exist, supply-side interventions may also affect their usefulness as some are deemed legitimate or illegitimate aggregators of interest. Thus, we must examine the way in which economic institutions and political institutions interact. Most economic models simply assume that a model of the economy is a model of the demand side for trade policy, but Nelson (1988) suggested that we must elaborate the mechanisms by which demand is articulated to the suppliers of trade policy. For a good overview of this argument, especially as it pertains to agriculture (Thies & Porche, 2007).

If the political system rewards small sectoral groups, then individuals will not pay the costs of organizing large inter-sectoral coalitions. If the political system rewards large mass movements (i.e., majoritarianism), then individuals will have to pay the costs of organizing large inter-sectoral coalitions in order to achieve benefits. Collective action costs and political institutions are interactive with factor specificity. They suggest that Rogowski's (1989) Heckscher-Ohlin framework requires low factor specificity, low collective action costs, and domestic political institutions that favor mass movements. The Ricardo-Viner framework used by the endogenous tariff literature requires that factors are specific, collection action costs are high, and institutions are less majoritarian, with changes in any of these three variables also affecting the type of coalitions that form.

In the state as a rational dictator model, the state may be seen as either pursuing "good government" goals along a social welfare function or intervening in the economy for its own self-interested model of the state which views politicians as offering preferential trade policy to economic actors in exchange for political support (Magee, Brock, & Young, 1989; Grossman & Helpman, 1984). On the other hand, pluralist theory typically views the state as a neutral aggregator of demands from groups in society. The supply of trade policy is then determined by the balance of power on any given issue. The supply side of trade policy is relatively undeveloped theoretically, and yet a crucial part of the equation. A variety of different characteristics of the political system are posited to affect the supply of trade protectionism, such as politicians' incentives to cultivate personal votes, the size of electoral districts, party fragmentation, federalism, presidential versus parliamentary systems, and so on (Nielson, 2003; Rodrik, 1995; Rogowski, 1987a, 1987b).

At a theoretical level, understanding the choice of trade policies in countries is very important. A survey of economists in 1984 suggested that one of the few things they agreed on was that under most conditions, tariffs, and quotas reduced the general welfare (Frey, Pommerehne, Schneider, & Gilbert, 1984). The stubbornness of protectionism in the face of international and academic pressure against it has led economists to seeking explanations. These explanations range from the simple ignorance of politicians to arguments about the rationality of protection for "infant industries" and "optimal tariff levels" in the developing states. Faced with this frustrating question, scholars have increasingly turned to political answers in order to explain the choice of what would seem to be an "irrational" policy (Frey, 1984; Nau, 1989; Nelson, 1988).

Protectionist Pressures in Different Political Systems

It is important to indicate that the role of trade unions in different political systems may be, to a high degree, different. In authoritarian systems, it is, as a rule, smaller than in democratic systems. It would seem that if protectionistic pressure on the part of trade unions is weaker, the situation for economic growth is much better. Following that line of reasoning, the author could come to conclusion that the authoritarian system is better for the effectiveness of the labor market. The examples of Chile, South Korea, Singapore, and Turkey from the 1970s and early 1980s could confirm that point of view. In many cases during those two decades, the authoritarian regimes persecuted trade unions and put restrictions on basic labor rights. During that period of oppression, South Korea, Singapore, and Turkey experienced a spectacular growth in the sector of processing industry and in the growth of demand for labor. Growing profits and the demand for labor in a processing industry caused a general growth of prosperity of the employed. Although similar results were not noted immediately during the authoritarian phase of development in Chile, a number of observers expressed the opinion that the reforms introduced at that time helped reorganize Chilean economy in the 1990s. The application of democratic rules, on the other hand, may lead to lower productivity of labor force. In a number of years, different democracies have to use significant financial resources for the employment of those who belong to trade unions like in the EU.

A different point of view says that government legislation concerning the labor market may be applied more effectively in an authoritarian system than in a democratic one. The authoritarian regimes often make use of individual interests of given circles. In most democratic countries, there is no broad enough basis that would allow using labor market policy for gaining the support from pressure groups, the urbanized labor marked elite included. The major difference between authoritarian and democratic regimes lies in the level of the outside influence. In a well-functioning democracy, the outside opinions are also taken into account, and there occur some limitations which come from the outside and restrict the achievements of the given groups of interest. In a dictatorship, a government cares only that those groups are not too strong.

There are, however, a number of democracies among the industrialized countries where an effective labor market exists. There are also a number of democracies with effective labor market policy among the developing countries. Similarly, in the countries in which the transformation from the authoritarian regime towards a democracy is taking place, avoiding unfavorable phenomena on a labor market is often a priority. For example, the Chilean government moved towards democracy and free trade unions without home income growth. The end of oppression in South Korea, in 1987, started the partnership relations in full of conflicts industry (Banerji & Ghanem, 1997).

It is worth considering which of the two points of view presented above should be given support, that is, which of them is the proper one. The analysis of that problem may be based on the Grossman and Helpman's (1994) model. This model describes economic development on the bases of two sectors: urbanized, regulated processing sector and rural, unregulated agricultural sector. The protection of the labor market, especially of minimum wages, is usually applied in order to bring the benefits for the employees of the regulated sector, since the sector of unregulated employees does not come under the legislation concerning the labor market.

The sector of regulated employees, and also the owners, demand from the government that it leads an economic policy that is favorable to them. The employed demand high minimum wages, while capitalists demand high profits. Both groups demand the restrictions on the degree of economy openness. In a closed economy, higher market minimum wages and higher profits are usually connected with higher prices for home consumers, and this is not easy when those consumers are free to buy the substitutes in form of imported goods. Thus, incomes in an economy may be created by protection and later divided among the employees of the regulated sector and the capitalists, although sometimes the government itself, take a part of those incomes (Banerji & Ghanem, 1997).

A government conducting an economic policy takes into account a number of factors. Firstly, it has to decide the degree of obtaining the resources, that is, how much from those resources it wants to obtain, hence the importance of investments, future economic growth, and also of defining the possibilities for keeping the power it is currently holding. Secondly, the government should define the scale of support from each of the pressure groups that can influence the situation. The position and importance of each group for the development of political processes should be considered. For example, in the country where the regulated labor market is divided and politically weak, only the capitalists may have a deciding voice in political processes. And the contrary also happens, in the societies where the labor market is organized, it may play the important role in mobilizing voters.

How can we recognize the type of power and the type of rule? First of all, we should investigate what level of resources a given government is going to achieve. If an authoritarian government is more or less corrupted than a democratic one, it will be creating the income, to a bigger or lesser degree, through protectionism. It will also appropriate some parts of that income. Secondly, a given type of government may remain under the influence of different pressure groups. If an authoritarian government is trying, to some extent, to subordinate special pressure groups including the regulated labor sector, it will be, to some extent, generating incomes through protection and it will be turning over some parts of them to those special pressure groups.

The Level of Protectionist Pressures

The above arguments show that the policy is defined by political factors (including the type of the government and the burdens resulting from obligations towards employees and capitalists) and by economical factors (wages, prices, and the structure of production and consumption). On the basis of the present discussion, the author can present two equations, one pertaining to the level of protection, and the second pertaining to the national economy and deformation of wages:

$$\pi = f(e, l, k, R) \tag{1}$$

$$\varphi = f_1(\pi, e, l, k, R) \tag{2}$$

The level of protection π depends on the economic parameters (e), a relative political importance of urbanized employees and capitalists (l and k respectively), and on the type of the government (R). Deformation of wages is, on the other hand, the function of π and of e, l, k, and R. In case of a small economy, economic parameters that can influence π and φ include flexible consumer and producer prices, demand flexibility, wages and the demand for labor force, and also the price of goods on an international market.

One can expect, a priori, that the growth of π depends on l and k. If interest groups become stronger, the pressure to form incomes based on protectionism may become stronger. The influence of R, that is, the influence of a political authoritarianism on the level of protectionism, that is, π, depends on the fact whether the opinion that the level of protectionism depends on the effects of democratization is correct. It is also thought that the increase of the deformation of wages depends on π and l, while its decrease depends on k. As long as the incomes are obtained from trade protections, those incomes can be handed over to urbanized employees. An important problem in case of urbanized labor force as an interest group with growing strength is the fact that urbanized employees may gain a big share in the division of incomes, but the growth of political importance of the capitalists may cause that the shared incomes, handed over to the labor force in regulated sectors of economy, will become smaller (Banerji & Ghanem, 1997).

There is no doubt that it is easier for wealthy rather than poor societies to choose democracy (Helliwel, 1992). Since those wealthier societies at the same time have a tendency to bigger openness, the direction of cause-result events may run from the openness of society to the political system, and not, as was suggested earlier, in the opposite direction. The research also showed that the level of education plays an important role in this respect. The countries with a higher level of education of labor force are more open.

On the basis of the earlier considerations, one can come to the conclusions that authoritarian systems have a tendency towards a broader application of protectionism than democratic systems and that, in turn, the trade restrictions accompany significant deformations of wages on the labor market. The opinions may be justified on the basis of the observations of the situation in a number of countries.

Freedom of association is one of the elements of good management and the necessary condition for development. The authoritarian governments do not respect, however, the freedom of association which is connected with the policy of trade restrictions and with the deformations on the labor markets. One cannot state, however, that improper or ineffective policy on the labor market belongs exclusively to authoritarian regimes or that authoritarianism automatically generates this kind of policy. There are a number of examples of authoritarian countries which do not conduct policies of that kind. The works of such authors as Fields (1994) or Freeman (1993) show that the repressions against the labor force are not necessary, if one wants to achieve a required economic growth.

Finally, it should be pointed out that there exists a close relation between democracy and an economic growth, There are well-known examples of open societies that stimulate the economic growth. This is true mainly in case of the highly developed and strongly urbanized countries. In the countries with a developed democracy, the pressure groups have a bigger opportunity for acting. The research shows that the presence of trade unions helps accelerate the economic reforms (Devarajan, Ghanem, & Thierfelder, 1997). The benefits resulting from liberalization of the international trade are bigger, when the trade unions exist in the sector of the economy under protection. The growth of import abilities leads to the decrease of wage pressures, and when the trade unions agree to that, such a situation allows for a better allocation of labor force in the economy. This is true both in the case of active and passive trade unions, although the effects are better in case of active trade unions.

The trade unions active on an urbanized labor market had a significant influence on the decisions of governments, in the course of multilateral trade negotiations within WTO. It was especially evident in the negotiations on lowering customs' duties and non-tariff measures in steel, shipbuilding, textile and clothing industries, and in coal mining. In the so-called "sensitive" industries which, for example in the EU, were under special trade protection, the position of trade unions was very strong.

Food Producers Pressure

The biggest conflicts between the United States and the EU within WTO were caused by agricultural problems also during the Doha Round. The governments of the two economic powers were in many times under a very strong pressure of food producers who had problems with the sale of agricultural products surpluses in the situation of the shrinking world market and lower prices.

The problem of liberalization of agricultural products trading is linked to the problem of subsidies application. According to the WTO decisions (Art. XVI), exports of the agricultural products, as so-called basic goods, can be subsidized, if this fact does not interfere with the economic interests of other participants of the agreement. Actually, subsidizing exports of agricultural products may have many different forms, starting with a direct subsidy, through variable compensatory fees, and finally through various forms of government guarantees and preferential credits. In the ministers declaration, we read only about a better discipline among the members of WTO. The total prohibition of subsidies would be the simplest course, but it does not seem to be realistic till after 2013.

In an effort to limit the EU budget expense for subsidizing agricultural products, it was decided, among other things, that in case of fats, the money will be transferred from the processing sector to the production sector. Instead of compensating the industry for higher costs of purchasing more expensive, local raw materials (the prices paid to the growers of rape or sunflower in the EU are much higher than the world prices), it was decided that subsidies would go directly to farmers, and the size of farms was to be the basis for calculations. At the same time, the Union authorities disclosed that they will be trying to reduce gradually those expenses by reducing guaranteed prices.

This reform was the first in which the attempt was made to eliminate the structural surpluses, the surpluses which had been disorganizing the EU agricultural market and the international trade for many years. It is worth pointing out here that the direct result of announced changes in the agricultural policy of the EU may not be favorable in the abroad. The simplest form of compensation for farmers is usually the restrictions for the suppliers from abroad. The agricultural lobby in France is especially active in this area. As a result of its activity and the pressure exerted on the government, the agricultural goods from abroad have been successfully blocked from the EU market. The position taken by that agricultural lobby also influenced the position of the EU representatives in the debates on the agricultural questions during the multilateral trade negotiations also in the framework of the Doha Round.

In spite of the trade conflicts, most clearly visible in the USA, the EU relations, all the countries participating in the international trade were interested in the success of the international trade negotiations. The reduction or the elimination of trade restrictions stimulates significantly the growth of the world trade exchange, while the foreign trade, in turn, is an important factor of the economic growth of individual countries.

Conflicts Between the Tendencies to Sustainable International Trade Liberalization and Environmental Protection

The tendencies to liberalize the international trade often stand in clear conflict with the protection of the natural environment which, during the intensification of production, found itself in the centre of attention. The process of pollution was one of the negative results of scientific-technological revolution. Many countries introduced special legal regulations in order to protect the environment against pollution. Ecological organizations of different types were established, and also the pressure groups, especially in industrialized countries, interested in the use of trade restrictions by governments for protection of the environment.

The pressure groups acting for natural environment protection see the trade policy in two aspects: as the way of improving the standards of environmental protection in individual countries and over their borders and as the instrument for persuading those countries to sign the international agreements on environmental protection. The imports restrictions against the producers coming from the countries with low standards of environmental protection may lead to the improvement of production standards by the local companies resulting from fighting with low competitiveness and from the attempts to compete with foreign firms (Anderson, 1997).

The application, in trade policy, of discriminating means in relation to the environment, which happened in the countries of Western Europe, is in accordance with the Article XX of WTO, and it testifies to the fact that trade barriers are used for the protection of the environment. Thus, the activities related to environmental protection are in conflict with the tendencies leading to international trade liberalization and with higher investments. From the theoretical point of view, the author cannot say that trade liberalization may help the environmental protection, especially when serious steps have to be taken in order to protect this environment against further degradation (Chichilnisky, 1994; Copland & Taylor, 1995; Corden, 1996). On the other hand, when a government find itself in a difficult situation, the trade reforms will be much more advantageous for that government than the actions in the environmental protection area (Bhagwati & Srinivisan, 1996). That is the reason why the pressure groups connected with the environmental protection are against the international trade liberalization.

The actions of those groups on WTO forum and their regional activities against the reduction of trade barriers have three reasons: (1) Free trade means the growth of production and income, which, in turn, leads to the degradation of the environment; (2) Free trade and growing investments cause the growth of transport activity and encourage companies to transfer the production to the countries with low ecological standards, which from the environmental point of view is wrong; and (3) Freedom for foreign investments discourages local companies to develop the technologies favorable for environmental protection (Anderson, 1997). The question of reaching some form of an agreement between the problems of international trade liberalization and the protection of natural environment especially in the context of the sustainable development became an important task for the WTO. The program of WTO activities included:

(1) The relations between the means used in trade and in environmental protection;

(2) The relations between multilateral trade systems and the environmental protection means, applied for protection of the environment;

(3) The influence of the effects of environmental protection on the liberalization of international trade;

(4) The relations between the mechanisms leading to compromises within WTO and within the multilateral agreements on environmental protection (Martin & Winters, 1995).

Reaching the effective agreements on the international trade liberalization and on environmental protection in the light of sustainable development is considered to be a both very difficult and very delicate question. The problems of environmental protection have become most important issues. Therefore, it is evident that the international market has to take them into account. In the context of the sustainable development, the key problem is to make a proper choice: Is the introduction of restrictions on international trade the best solution, or will the benefits from environmental protection (as applied by a multilateral trade system) be higher than the costs?

It is also necessary to emphasize that if the rules of international trade are clear, and if they are perceived to be supportive of important environmental values, then their legitimacy will be much greater. Over the long term, public support for the WTO depends on a perception that it is balanced and fair (Esty, 1998). Efforts to address the issues identified above could greatly enhance the WTO’s reputation. Competing trade and environmental principles could be best balanced through the creation of an interpretive statement that focuses on how the "exceptions" spelled out in Article XX would be implemented, rather than through full-blown renegotiation of the environmental elements of the trading system (Esty, 2000).

Finding ways to address the environmental issues that inescapably arise in the context of deeper economic integration and tendency to the sustainable development must be seen as an important trade policy priority, as a matter of WTO commitment to undergirding the trade regime with sound economic theory, and as a matter of political necessity. Building a trading system that is more sensitive to pollution control and natural resources management issues is mandated by the growing degree to which these realms intersect with trade and mutually reinforcing environmental policies are also advisable to the extent that the presence of trade rules that internalize externalities will prove to be more economically efficient over time. Institutionalizing the links from the trade regime to environmental actors and other elements of civil society will also pay dividends. A culture of openness within the WTO is likely to generate policies that the public accepts and that therefore become more useful and durable (Esty, 2000).

Concluding Remarks

The international trade in the end of the first decade of the 21st century has been strongly affected by the force of the economic crisis. The changes are evident in the growing importance of international trade to national economies and to domestic groups within those economies, in the closer linkages between trade and other international issues. Realistic point is important trends in the global trade regime during the economic crisis. The growing interdependence and the decline of USA trade hegemony have led to increased competitiveness and greater temptations to resort to strategic trade policy.

Trade policy takes on additional importance in economic battle of "the valiant liberal reformers, fighting against self-dealing rent seekers profiting from inconsistencies of the transition economy" (Aslund, 2002, p. 19; Kitschelt, Mansfeldova, Markowski, & Toka, 1999). Many of the clientelist policies that shelter rent seekers are impossible to maintain in the face of competition in the international economy. On the other hand, high tariff walls, export licensing, and artificial exchange rates provide numerous sources of rents for business people who are trying to promote their own loyalties.

The international business policy plays a key role in the maintenance of both economic and political liberalization (Frieden, 1991; Frieden & Rogowski, 1996; Rogowski, 1987b). The prominence of rent seeking in a country can have far-reaching implication for its economic development. Especially in underdeveloped or transitional countries, rent seeking takes scarce resource out of productive areas in the economy, using them to promote and/or perpetuate further rents (Murphy, Shleifer, & Vishny, 1993).

Structural and micro-political economy analyses of international business policy in the context of the sustainable development have missed the impact of changing ideas about protectionism and relatively unchanging institutions designed to handle domestic producer complaints. The political consensus on the supply of international business policy and protectionism has changed over time. In the economic depression, tariffs revenues and protectionism played important roles in the politics of political parties. At the same time in the market economy even during the economic depression, one can observe a little support for liberal foreign trade policy. It is necessary to emphasize that in the international business policy, there are not pure liberalism and pure protectionism. In the high economic growth, there is a tendency to liberalism in international business policy, and in the economic crisis, there is a tendency to protectionism.

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Journal of Modern Accounting and Auditing, ISSN 1548-6583
June 2013, Vol. 9, No. 6, 856-865

Post-Crisis Remodeling of the Economy for the Sustainable Growth of South Eastern European (SEE) Countries*

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Every bigger economic crisis, as the current one, leaves behind a huge material damage to the world economy and to separate national economies as well. However, such crises remind national authorities of the mistakes done in the past while creating and running macroeconomic policy and teach them how they should overcome these crises in the upcoming period. The economic growth model of the selected South Eastern European (SEE) economies (Albania, Bosnia, Macedonia, Serbia, Slovenia, Croatia, Bulgaria, and Montenegro) during pre-global economic crisis was based mainly on foreign demand and capital inflows which created big external imbalances in those countries. It was the main reason why those countries were exposed to big vulnerability of external shocks. But, the crisis reshapes the world economic map. Competition on world markets gets new forms and players. The lessons learnt from economic crisis say that there is a need for revising the pre-crisis economic growth model in the selected countries as they are less vulnerable to external shocks. New economic model will enable their long-lasting and more sustainable economic growth in the future. One approach of remodeling their economy is presented in this paper. The main finding of this research is that instead of experiencing external "push" factors for economic growth by the governments, a promotion of internal resources is needed in order to enable "the catching up" process of these countries to continue. But, all those countries are members or candidates for becoming European Union (EU) members. That means there is no room for application on entirely new economy growth model, since those countries have to create economic model which has to be convergent to the EU one. There must be different approaches by individual countries in remodeling their economies. The findings of this survey are intended to remind the policy makers of the selected SEE countries of the mistakes they made before and during the economic crisis and the need and directions for remodeling their economies in the post-crises period that will enable their long-lasting and more sustainable economic growth in the future. The position assumed for this research is interpretative using qualitative methods of research. In order to ensure comparability among results, the proposed methodological design will be multiple-case study research on the selected SEE economies.

Keywords: crisis, lessons, growth, remodeling, harmonization

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* JEL classification code: E6, Macroeconomic Policy, Macroeconomic Aspects of Public Finance, and General Outlook.

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Introduction

The focus of this research will be on the response to the global economic crisis by the selected South Eastern Europe (SEE) countries, such as Albania, Bosnia, Macedonia, Serbia, Slovenia, Croatia, Bulgaria, and Montenegro. Since these countries are considered as transition, mainly small and highly open economies, their economic growth model prior 2008 seemed manageable and sustainable. The formula they pursued for achieving higher economic growth was clear: increasing export, investing heavily into real estate and infrastructure plus implementing structural reforms in addition to promoting the countries as attractive foreign investment destinations, which should ultimately lead to a higher economic growth. But, these countries appeared ex ante more vulnerable when taking into consideration their reliance on foreign demand and capital inflows prior and during 2008 which were used to finance their growth. As global liquidity springs “dried out”, the SEE region’s growth model appeared dramatically challenged, triggering fears that the shortage of external capital inflows could generate some severe macroeconomic adjustments and jeopardize macroeconomic and financial stability. To a great extent, this poses question on whether these countries should continue to rely mostly on external demand and foreign capital, or whether a new approach is needed in order to finance their economic growth in the future. The main finding of this research is that instead of experiencing external “push” factors for economic growth by the governments, a promotion of internal resources is needed in order to enable for “the catching up” process of these countries to continue.

The position assumed for this research is interpretative using qualitative methods of research. In order to ensure comparability among results, the proposed methodological design will be multiple-case study research on the selected SEE economies.

The Positive Side of the World Economic Crisis

Usually, economic crisis is valued as a negative economic form. Such is the case with the actual world economic crisis. While evaluating it, analyses are being done on how big the final losses might be and how big its consequences for the upcoming developing trend of the world economy might be. While doing so, it is rarely estimated that the crisis has some positive characteristics. They may be located in several fields.

Cleaning the Economy: Economic Crisis as a Purgatory

It is understandable that the number of newly-opened companies continually increases. Economic subjects try to realize their innovative qualities by modifying business climate. Some succeed to better establish themselves in the national and world economy. However, others cannot make a qualitative and lasting business even in the best economic conditions, thus breaking the more intensive economic development. In times of economic crisis, their weakness is even more emphasized, which is the reason why they have to give up the place for economic competition to the stronger and more qualitative economic subjects.

Thus, we can say that economic crisis acted a purgatory (Nenovski, 2011): weak firms failed, strong firms remained and strengthened, and new, brave actors have appeared on the economic scene. It indicates the existence of latent powers and possibilities of the economy that should be used in the upcoming period for taking national economies to a more prosperous path of their post-crisis development.

Crisis as a Teacher

The appearance and presence of economic crisis in any material or geographic range show the weaknesses that are present in the economy and show the carriers of economic policy which are the basic lessons that have to be learnt from economic crisis and to be taken into consideration in the creation of economic policy in the post-crisis period. Whereupon, the economic crisis should be treated as any well-intentioned teacher, because it shows us: (1) what the main weaknesses of the existing economic growth model are; and (2) how we should create an ambient for a lasting and sustainable growth in the future.

Further analyses in this work will show that creators of economic policy in analyzed countries should seriously analyze and apply the lessons learnt from the world economic crisis.

Main Characteristics of Pre-crisis Economic Growth Model of the Selected SEE Economies

Strong Economic Growth

In the years that marked the shock which the economies of the analyzed countries were exposed to, after the breakdown of the previous socio-political system, they recorded negative or modest growth level. After that shock and especially after establishing institutional bases for a functional market economy which is a prerequisite for their future development and integration in European Union (EU) market, economies of those countries started recording high levels of growth (see Table 1).

Table 1

Rates of Real Gross Domestic Product (GDP) Growth

Country/Year	2005	2006	2007	2008	2009	2010	2011
Albania	5.8	5.4	5.9	7.5	3.3	3.5	2.0
Bosnia	3.9	6.0	6.2	5.7	-2.9	0.7	1.7
Bulgaria	6.4	6.5	6.4	6.2	-5.5	0.4	1.7
Croatia	4.3	4.9	5.1	2.2	-6.0	-1.2	0.0
Macedonia	4.4	5.0	6.1	5.0	-0.9	1.8	3.0
Montenegro	4.2	8.6	10.7	6.9	-5.7	2.5	2.4
Serbia	5.4	3.6	5.4	3.8	-3.5	1.0	1.8
Slovenia	4.0	5.8	6.9	3.6	-8.0	1.4	-0.2

Note. Source: International Monetary Fund [IMF] (2011).

In the years before the beginning of the crisis (2005-2008), the economies of all analyzed countries recorded especially high growth development. Average annual growth of those economies was 5.6%. That is a higher growth rate compared with averagely realized growth of other emerging market regions and also with the average growth rate of the economy of other EU member states.

It may also be said that there were significant growth differences between individual countries which is a result of the chosen model of economic development and the positioning of certain economies in regional and world economy (see Figure 1).

The trend of intensive economic growth in all analyzed countries was broken in 2009. Then all analyzed countries recorded negative growth rates, except Albania, where due to previously started intensive investment activities supported by a large inflow of direct foreign investments, the economy recorded a noticeable economic growth in 2009, 2010, and 2011.

Decrease of economy had a diverse intensity in different countries. The biggest fall was recorded in Slovenia, Croatia, Montenegro, and Bulgaria, and the smallest in Macedonia.

Thus, the growth trend was broken in (2009) the time when almost all world economies entered the zone of recession. That is a logical reason for such happenings. However, during that year, the main weaknesses on which previous model of economic growth of almost all analyzed countries was based, were recorded.

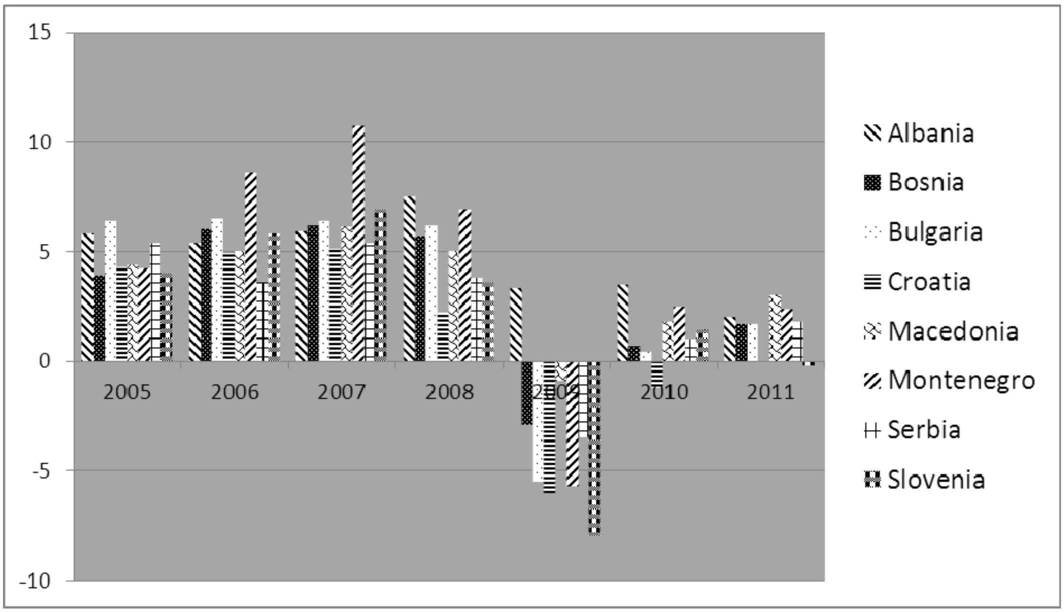

Figure 1. Real rates of growth. Source: IMF (2011).

Basis for Economic Growth

What is the intensive economic growth of most countries before the beginning of economic crisis due to? To a significant degree, external drivers accounted for this (Anastasakis & Watson, 2011). High growth was made possible with a distinctive growth model based on large capital flows (Mrak, 2011), which mainly came through foreign direct investment (FDI), credit inflows, and private transfers.

FDI. In the pre-crisis period, all analyzed countries had recorded a high inflow of FDI. That is logical, having in mind that all those countries were determined to become EU members, namely, economic integration into EU. One of the conditions for fulfilling that aim is the liberalization of capital inflows in the country from abroad and especially from EU member states. Their determination to enter EU and North Atlantic Treaty Organization (NATO) made them attractive for foreign investors who had decided to invest a great amount of money and thus became one of the main promoters of economic growth of those countries. At the same time, depending on the size of the country, its business climate, its position towards the EU integration, the openness towards foreign countries, its infrastructure, monetary and fiscal freedom, protection of author’s rights, and so on, the amounts of FDI differed greatly from country to country. Understandably (due to its joining to EU and NATO in the meantime), the highest absolute inflow of FDI was recorded in Bulgaria, and afterwards in Croatia which is the closest to joining EU (see Table 2).

Table 2
FDI (USA $)

Country/Year	2005	2006	2007	2008	2009	2010
Albania	264	325	662	988	979	1,205
Bosnia	613	766	2,077	1,064	501	68
Bulgaria	3,916	7,804	12,388	9,795	4,467	2,388
Croatia	1,825	3,468	5,023	6,140	2,605	641

(Table 2 continued)

Country/Year	2005	2006	2007	2008	2009	2010
Slovenia	577	648	1,514	1,924	(67)	897
Macedonia	97	424	699	587	248	296
Montenegro	--	--	450	916	1,311	387
Serbia	1,441	4,286	2,004	2,995	1,920	1,157

Note. Source: United Nations Conference on Trade and Development (UNCTAD) statistics.

However, in 2009, a sudden decrease of FDI inflow occurred at most of these countries. Thus dropped one of the most important sources of financing the growth on which the economic model of those countries was based in that time. The rapid decline of FDI inflow may be determined as one of the more significant reasons for economic fall in those countries in 2009 and in Croatia in 2010 as well. This finding does not count for Albania where FDI reached high amounts in 2009, which was one of the main reasons that Albania accomplished high rate of economic growth (from 3.3% to 3.5%) in 2009 and 2010 respectfully.

Credit inflows. The lack of domestic financial capital for financing the projected economic growth more of the analyzed countries was compensated by borrowing funds from abroad on credit basis. Credits were largely intermediated by subsidiaries of Western Europe banks in those countries due to (Mrak, 2011):

(1) Macroeconomic stability and structural reforms in the selected countries;

(2) Reduced country risk;

(3) EU membership of some of the selected countries and prospects for EU membership of the other selected countries.

Besides that, the credit interest rates in euro-zone were lower than those in the analyzed countries. At the same time, their reduced country risk has resulted in an improved access to capital markets at very low prices.

Those reasons conditioned the indebtedness of certain countries to grow from year to year (see Table 3). With exemption of Bulgaria and Macedonia, the level of their gross indebtedness in 2009, 2010, and 2011 was remarkably higher than the one recorded in the previous 2-3 years, which is understandable having in mind the decreased inflow of FDI in most of them during the two years.

Table 3

General Government Gross Debt (% of GDP)

Country/Year	2005	2006	2007	2008	2009	2010	2011
Albania	58.2	56.7	53.8	55.2	60.2	59.7	58.9
Bosnia	25.3	21.8	32.9	30.9	35.4	36.9	40.6
Bulgaria	29.4	23.4	18.6	15.5	15.6	18.0	17.0
Croatia	38.4	35.8	33.2	29.3	35.4	40.0	45.6
Macedonia	39.5	32.0	24.0	20.6	23.9	24.8	28.1
Montenegro	38.6	32.6	27.5	31.9	40.7	44.1	45.8
Serbia	56.3	43.0	35.2	33.4	36.8	44.0	47.9
Slovenia	27.0	26.7	23.4	22.5	35.4	37.2	47.3

Note. Source: IMF (2011).

According to Table 3, the development in those countries leaned on foreign credits. However, as a result of the emergent situation under the influence of the economic crisis, country risk of all countries in the region increased, and thereby the interest rates of foreign credits. That caused almost external imbalances at most of the selected countries and big vulnerability because of high proportion of foreign denominated debt.

At the same time, in the countries (Serbia) with a fluctuating course of national currency, the value of debt towards foreign countries calculated in domestic currency increased in circumstances when economy recorded low or negative growth rates, when profits of companies-debtors decreased, and wages of citizen-debtors remained the same or were reduced.

Thereby, the possibilities for new indebtedness abroad suddenly lowered down and worsened. It appeared that their future economic development could not lean on foreign credits as earlier.

Private transfers. The third most important financial source of economic growth of the selected countries was private transfers from abroad, especially worker's remittances. It is noticeable (see Table 4) that in all selected countries (with exemption of Montenegro which has a small number of citizens that work abroad), private transfers recorded high amounts and dynamics of growth during the pre-crisis period.

Table 4

Private Transfers (EUR Millions)

Country/Year	2005	2006	2007	2008	2009	2010
Albania	897	1,011	1,043	937	938	922
Bosnia	613	1,772	1,972	1,926	1,650	1,700
Bulgaria	818	670	681	861	956	1,547
Croatia	1,184	1,107	1,043	1,070	1,036	1,104
Slovenia	97	173	239	302	159	104
Macedonia	853	982	1,012	985	1,132	1,366
Montenegro	--	--	59	73	85	114
Serbia	--	--	2,876	2,554	3,518	3,356

Note. Source: National banks.

More importantly, those transfers were not only reduced but also increased in times when economic crisis reached its peak. That may be evaluated as illogical bearing in mind that due to economic crisis, a great number of workers abroad were fired or their wages were reduced. An objective explanation of that occurrence is the fact that part of those workers that were temporally fired returned back to their native countries and stayed there longer than their usual annual holidays. That was the reason for their bigger expenditures (transfers) of savings in their native countries.

Table 5

Current Account Imbalances (% of GDP)

Country/Year	2005	2006	2007	2008	2009	2010	2011
Albania	-6.1	-5.6	-10.4	-15.1	-13.5	-11.6	-13.2
Bosnia	-17.1	-8.0	-10.7	-14.1	-6.3	-6.1	-8.3
Bulgaria	-11.7	-17.6	-25.2	-23.2	-8.9	-1.3	1.9
Croatia	-5.3	-6.7	-7.3	-8.9	-5.0	-1.0	0.9
Macedonia	-2.5	-0.4	-7.1	-12.8	-6.8	-2.2	-2.8
Montenegro	-8.5	-31.3	-39.5	-50.6	-29.6	-24.6	-19.4
Serbia	-8.7	-10.2	-16.1	-21.6	-7.1	-7.2	-9.1
Slovenia	-1.7	-2.5	-4.8	-6.9	-1.3	-0.8	-1.1

Note. Source: IMF (2011).

However, private transfers played a serious role in financing growth activities of the selected countries in 2009, 2010, and 2011. On the contrary, those countries would have certainly recorded worse economic results than the ones realized. Private transfers played a serious role in amortizing external imbalances in most of those countries for achieving a remarkably lower rate of current account deficit (see Table 5). That, however, showed the great dependence, uncertainty, and high sensibility of those countries to the amount and dynamics of capital inflow of private transfers that should be taken into consideration while creating the future model of their economic development.

A Need for Remodeling the Economy—Increasing the Resistance to External Shocks

There is no doubt that the crisis has challenged the regional growth model which relied on foreign financing of high levels of investment. But, previously mentioned policy and market weaknesses in the pre-crisis period now need to be addressed.

It becomes obvious that there is a need for shifting the pattern of growth towards one that is more labor-intensive, more competitive in terms of productivity growth, and less dependent on foreign savings. It is also clear that the previous model, relying on massive capital inflows, will not return in the short run, and probably not even in the medium or long term (Sanfey, 2011). Having all that in mind, we come to a conclusion that the selected countries, as well as many other Central and East Europe countries need new economic model that will increase their resistance to external shocks.

In general, there are three broad areas where attention should be pointed out: changing the drivers of growth and its sources of financing, achieving greater risk mitigation through macroeconomic and financial policies, and exploring more effective cross-border linkages as a key dimension of a more prosperous future for the region (Anastasakis & Watson, 2011). In other words, there is a need for these countries to promote internal resources as “push” factors.

Increase and Reliance on Domestic (National) Savings

As the pre-crisis growth model relying heavily on massive capital inflows has proven to be unsustainable for the selected countries (Mrak, 2011), they will have to figure out ways to develop local sources of finance (Sanfey, 2011), meaning that national policy needs to be more directed towards increasing private and public savings. On the one hand, an improved business environment should increase potential returns and private savings ratio, and it will stimulate the shift of investment towards tradable sector and export. On the other hand, a comprehensive fiscal consolidation will correct previously significantly deteriorated fiscal position and will increase the public savings. All of these will decrease the dependence of those countries on foreign savings and will gradually reduce their external imbalances.

Deleveraging the Economy

Increased domestic savings will cause the selected countries to decrease their indebtedness at home and abroad. Consolidated fiscal policy, the expected increase of export of goods and services, and decreased (limited) import of certain goods and services, due to their production by domestic companies, will diminish the need of the countries for further indebtedness on domestic and foreign markets. At the same time, this will create conditions for the countries to more intensively decrease their continual indebtedness, which will release them from their interest burden and will increase their rating on international markets.

At the same time, the increase of savings will release private sector from long-term problems of insufficient liquidity and dependability on domestic and foreign credit institutions. They may use the achieved excess of funds for a gradual decrease of their debt towards their creditors. Of course, that should be done cautiously, because deleveraging of the household sector dampens consumption, while corporate deleveraging reduces investment and potential GDP.

At any case, gradual deleveraging will condition reducing the gross indebtedness of the countries and especially their public debt as a sign for the level of creditability of a certain country in the international context.

Greater Reliance on Domestic Credit Funding

According to that, national policies in the selected countries should have to stimulate greater reliance on domestic sources of credit funding. Banks in most of those countries will need to rebalance their business, with lending growth linked to deposit growth. National policies should have to discourage excessive leveraging which would contribute to mitigation of external vulnerabilities and make domestic financial system more resistant to external shocks (Mrak, 2011).

Diversification and Increase of Home-Produced Goods and Services

Adjustments in external imbalances should have to be associated with deeper structural reforms in labor and product markets. Such reforms are essential to increase the capacity of those economies to compete with other emerging markets. Policies (Schadler, 2011) must be tailored towards competitiveness in the markets most likely to hold growth prospects in those countries. There is a need for structural reform for faster productivity growth. One priority is to integrate further in supply chains feeding demand in Western Europe and generally increasing penetration of Western European markets. But, as a safety valve, Schadler (2011) urged the need for a broadening of export bases in terms of products and markets outside EU.

The economies of the analyzed countries can shift their patterns of growth to a more sustainable and balanced one if they sharply address business environment which can help promote the traded good sector.

Channeling Foreign Capital Inflows in Export Sector

The crisis has certainly highlighted the problems of export concentration and its potential to derail growth (Schadler, 2011).

If some of the analyzed countries are to continue to depend on large inflows from abroad, those inflows must be channeled mostly into export sector.

That may be effectively done by fiscal encouragements of FDI, in this way, production will be directed for export, e.g., by enabling beneficiaries to pay lower purchase prices for building land and lower communal taxes, giving the so-called investment premium, temporally exemption of personal income tax, profit tax, social taxes, etc..

Harmonization (Adjustments) in Macroeconomic and Financial Policy

Because of their close interdependence, it will be necessary in the upcoming period to harmonize the relations between the most important parts of macroeconomic policy (Nenovski, 2010) in the direction of their coordinated action. That will eliminate the possibility of destabilizing the economy and create conditions for starting a process of lasting and sustainable (at least at the medium term) economic growth of the country. While creating the new model of economic growth, the selected countries should insist on harmonizing the measures of fiscal policy to the measures of monetary policy. It is especially important that the two policies should be more proactive in managing capital inflows and particularly in stimulating themselves to be channeled into tradable sector and export.

Since monetary policy in most cases is given, the fiscal and supervisory policies should be seen as the main bulwarks containing overall levels of risk in the economy (Anastasakis, 2011). Realigning to fiscal-monetary policy mix to focus strategies for existing crisis-induced easing will require early and decisive fiscal tightening so that interest rates can remain low. If fiscal policy is not more credible over the medium term, this could jeopardize growth prospects and increase volatility in money market.

Fiscal adjustment would be best supported by having a public debate on a viable fiscal rule, establishing such a rule, and then sticking to it (Schadler, 2011). Besides, a credible, multi-year planning of fiscal policy and fiscal discipline is needed (Sanfey, 2011).

Cross-Border Linkages and Regional Cooperation

To achieve pattern of growth towards productive investment and export requires a deepening of cross-border linkages, which would benefit hugely from the development of a more integrated regional market (Kaoudis, Metaxas, Stavrianou, Tsoudis, & Vouldis, 2011). It is particularly important that regional cooperation among the private sectors to be improved. There are signs of increasing direct investments across borders, for example, from Serbia to Slovenia, Croatia to Serbia and Slovenia, etc.. But they are only emergent trends. Parallels can be drawn with the scope to achieve much stronger and more efficient networks in the region in the fields of energy, transportation, or institutions, for example. Of course, there are a lot of other areas, usage of the Instrument for Pre-Accession Assistance (IPA) funds, for example, in which exchanges of experiences and cross-border initiatives in the selected countries could be explored.

Conclusions

The previous analysis showed the ways in which the pattern of growth in most of the selected countries was unbalanced, allowing significant external and financial vulnerabilities to emerge. Capital inflows did not sufficiently feed into productive investment, and the competitiveness of economies was not upgraded to assure sustainable growth. There was an over-reliance on foreign savings to sustain consumption and residential investment (Anastasakis, 2011). It becomes obvious that yesterday’s import-led, financial sector-driven, and debt-fuelled transition trajectory of economic development in the region must be subjected to a root and branch re-evaluation (Bastian, 2011).

Financial integration, including the prominent role of foreign-owned banks, was a crucial part of transition strategy of those countries. However, the associated high investment levels during times of growth did not help much to improve the competitiveness of the countries. Productive investment did not flow in those countries. Domestic reforms lagged in key areas for the business environment and for a healthy growth of the traded goods sector (Anastasakis, 2011). Indicators show that there was a big lagging performance in reforming the enterprise sector and in creating competitive domestic market conditions.

In general, the previous model of growth in those countries has shown significant domestic and external vulnerabilities (Mrak, 2011). Most of those countries became exposed to international capital flows, the channel through which the financial and economic crisis was transmitted to them. In newly created economic world, convergence strategy seems not to be sustainable any more. It becomes obvious that new model for economic growth is needed. Instead of experiencing external “push” factors for economic growth by the governments, a promotion of internal resources is needed in order to enable the “catching up” process of these countries to continue. New economic model will enable their long-lasting and more sustainable economic growth in the future.

But, all those countries are members or candidates for becoming EU members, meaning that there is no room for application on entirely new economy growth model, since those countries have to create economic model which has to be convergent to the EU one. There must be different approaches by individual countries in remodeling their economies. In the center of new model, the following should be pointed out: changing the drivers of growth and its sources of financing, achieving greater risk mitigation through macroeconomic and financial policies, and exploring more effective cross-border linkages.

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