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# **HIDING THE BANKRUPTCY THROUGH CREATIVE ACCOUNTING**

### **Abstract:**

Bankruptcy is one of the most important business externalities. Prediction of corporate failures has become a challenging and discussed issue over the years. However, there is no research dedicated to the opportunity to hide the possible bankruptcy of the company through the creative accounting. Therefore, the main goal of presented study is to identify the challenging scientific gap represented by Earnings management models, through which companies can legally modify, hide and play with their financial data. We focus on the proper literature review in selected issue emphasizing the need to concentrate on the creation of a quality model for the detection and quantification of Earnings Management, which will take into account the specificities of the national environment as well as of the global development trends in the area concerned.

### **Keywords:**

earning management, bankruptcy, creative accounting, insolvency

**JEL Classification:** M41, G33

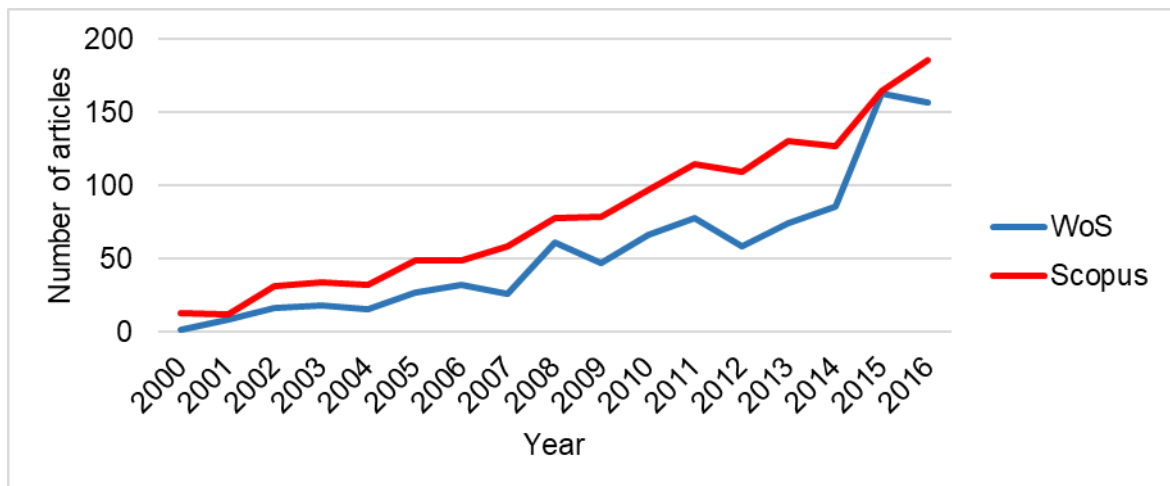
## 1 Introduction

Earnings management (EM) is one of the most challenging, debated, controversial and at the same time the most promising topics in finance and financial management. As it follows from the term itself, the subject is a profit, which presents a source of valuable information needed for the future decision making of the users of the financial statements in order to achieve stable and predictable financial results. However, the informational value of earnings becomes questionable at the moment, when we realize, that managers of companies (or other internal employees) have not only the motivation but also the possibility to implement, to a certain extent, their own judgements and subjective estimations in the process of the preparation of financial statements, which in order to satisfy their own needs or the corporate needs lead to an opportunistic management of the reported earnings.

When implementing own judgments and subjective estimations we always mean their strict legality, i.e. we emphasize the legality of EM. Earnings management is specified within the legal framework, but we cannot deny the fact that it includes creative accounting techniques that can present the financial situation and performance of an enterprise according to the management visions and not according to the needs of the users of financial accounting statements.

We decided to illustrate the undoubted topicality and perspective of EM by the quantification of the worldwide scientific community interest in the subject matter in the form of a development of the number of scientific articles, monographs, and reviews in the two most important scientific databases Web of Science and Scopus (Fig. 1).

**Figure 1: Number of articles dedicated to the issue of Earnings Management**



Source: self processed according to Web of Science and SCOPUS

From the graph, the growing interest of the scientific community in EM is obvious. Together in the databases there are 1068 (WoS) and 1579 (Scopus) scientific articles,

monographs, and reviews dedicated to the issue of EM. Nevertheless, it is still difficult to provide a uniform definition of EM, proven by the fact that the authors of various professional studies very often perceive EM differently. The main reasons of the lack of consensus in the views of the EM lie in its inconsistency, ambiguity and problematic measurability. Studies focused on EM detection and measurement are often based on discretionary accruals and use models that estimate the discretionary portion of reported earnings, starting with simple models that match discretionary accrual with total accrual to more sophisticated models that try to divide the total accrual into discretionary and non-discretionary parts. However, there is no systematic evidence of the relative performance of these models to detect EM.

## **2 Literature review**

For the first time in history, the term EM was used by Hepworth (1953) in the article "Smoothing periodic income" in which he described the smoothing of periodic income. The author documented several tactics, for instance how to balance revenues through specific accruals that can be used to transfer net earnings to subsequent accounting periods. But he did not determine only the ways that could detect the shift of earnings itself. First ways to detect EM in an enterprise are based on data-based graphical methods arranged in time series. Let us mention the authors Gordon (1964); Dopuch and Drake (1966); Archibald (1967).

Gordon, Horwitz and Myers (1966) were the first authors to use mathematical modelling to test earnings smoothing. The authors chose investment credit as a variable to test whether the companies are trying to smooth earnings. They searched if the accounting rules were correctly chosen and led to: (i) adjusting the relative change in earnings per share to the average values in industry; or (ii) adjusting earnings per share to normal values; or (iii) adjusting return on equity.

Copeland (1968) attempted to use more than one variable in the empirical testing of the existence of EM by means of an additional review of financial statements and / or reports meant for government institutions. For each period, the total balanced earning was defined as the sum of net earnings from the previous period, provided that at least three consecutive periods were considered. White (1970) applied in his study alternative tests using the ten-year time series of earnings values. He included a number of various dependent variables in the tests and for the first time used regression as a method to detect enterprises that smooth earnings.

Beidleman (1973) was the first author, who empirically proved the existence of earnings smoothing in conditions of American companies. He argued that traditional techniques of time series decomposition can be used to distinguish the trend component from the cyclical and random components which are subjects of the earnings smoothing process.

### 3 Earnings management models

The difference between the actually observed and normal earnings is a cyclic and / or random component and it can be used to test the existence of EM. In his holistic research, Healy (1985) used the average total accruals for the first time to estimate the discretionary accruals, and therefore to estimate earnings management. He concluded that the accrual policy of managers is related to the incentive bonuses embedded in their contracts, and therefore the change in accounting procedures is associated with a modification of the bonus payment plan.

DeAngelo (1986) deepened the model of Healy of an accrual from the previous period. The model does not assume the existence of non-discretionary accruals in the current period and uses non-discretionary accruals from the previous period. McNichols and Wilson (1988) improved the model of DeAngel by capturing the discretionary accruals as a rate of EM, instead of total accruals used by Healy and DeAngelo.

We consider the approach of Jones (1991) to be notable, as it explored EM using two-step models during the government import relief investigation in the USA (article "Earnings Management During Import Relief Investigations" is the most cited scientific article devoted to the issue of EM with 1435 responses). She used an enterprise-specific model based on data from at least 14-year time series. Her model quantified normal total accruals, i.e. non-discretionary accruals in "estimation period" from the accounting statements and used them to calculate the coefficients. The same model in "event period", i.e. in the time where the occurrence of EM is expected, quantified the expected non-discretionary accruals using the obtained coefficients.

Discretionary accrual, representing the residue, i.e. a prediction error, is calculated as the difference between the current total accruals found in the financial statements and the expected non-discretionary accruals. Later, many other authors attempted to modify the original Jones model in terms of adding new variables or removing or modifying the original variables. For example, Dechow, Sloan and Sweeney (1995) modified the original Jones model by completing the year-on-year change in receivables, and thus eliminating the error rate of discretionary accrual estimates.

Key (1997) added to the original model a modification in the form of a new variable - intangible assets - which was justified by the expected relation between intangible assets and depreciation, which are one of the components of non-discretionary accruals. Jeter and Shivakumar (1996) included CF of operating activity in the model as a non-discretionary component of EM to improve the specification of the original model in case of its usage to measure EM in enterprises with extreme CF. Kasznik (1999) included in his model an explanatory variable - changes of cash flow.

McNichols (2002) continued to modify the original Jones model by adding CF of the previous, current and future periods. Dechow, Richardson and Tuna (2003) included 3 innovations in the original model: division of discretionary and non-discretionary accruals

within receivables, addition of the accrual from the previous period and addition of a variable controlling the growth of revenues. Kothari et al. (2005) presented a modification of the original Jones model, which lied in consideration of ROA in order to regulate the performance of an organization.

Authors, who decided to use cross-sectional abnormal accruals instead of data arranged in time series to detect EM, were, for example, DeFond and Jiambalvo (1994) and Subramanyam (1996). Kang and Sivaramakrishnan (1995) applied the approach of instrumental variables and the generalized method of moments instead of the least squares method. Peasnell, Pope and Young (2000) presented an alternative model to estimate abnormal accruals, known as the Margin Model, which applied cross-sectional data to mitigate the weaknesses of Jones model.

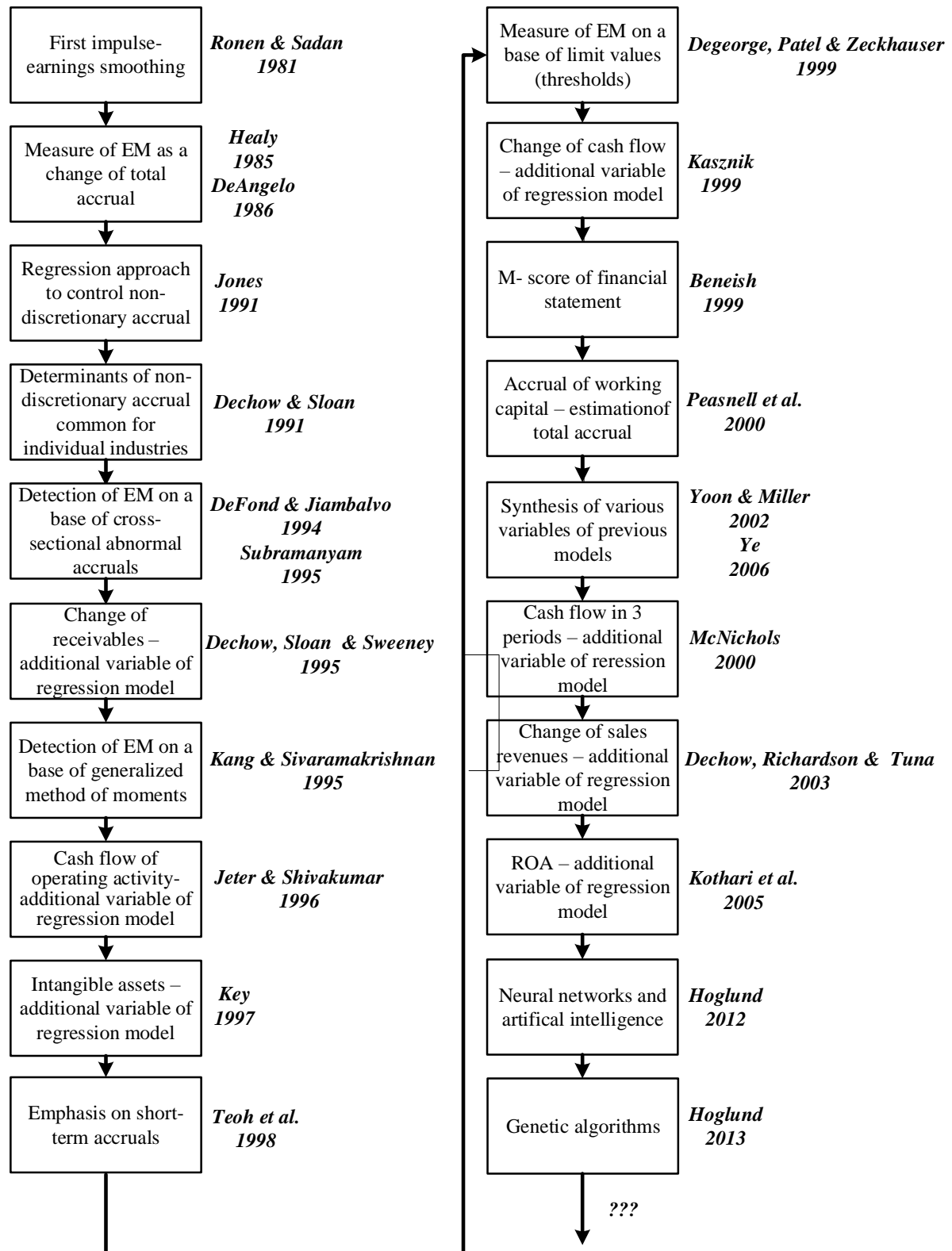
Degeorge, Patel and Zeckhauser (1999) in their research focused on exceeding the limit values: (i) exceeding the positive threshold of the reported earnings, (ii) maintaining the current value and (ii) confirming the expectations of authors who used the simulated distribution of the reported earnings. Beneish (1999) constructed a model that uses (in two alternatives) 5 or 8 variables to determine so called M-score. Variables are indices, i.e. they compare two consecutive periods and on the basis of the M value it is possible to detect the presence of EM.

Hoglund (2012), due to inadequate results of existing "classical" models using the linear approach, applied an alternative way of dealing with the non-linearity of accrual processes by the application of artificial neural networks and artificial intelligence to detect and manage EM. A year later, Hoglund (2013) decided to solve the problem by means of evolutionary and genetic algorithms.

#### **4 Discussion**

The development genesis of methods for the detection, measurement and management of Earnings Management is illustrated in the following diagram (Fig. 2). The genesis of the development of approaches and methods used to detect and quantify EM in the diagram ends in 2013, which does not mean that the research in this field has deteriorated. Vice versa, it has accelerated, but the research is mainly on older significant studies and characterized by atomization of a coherent ideological development. This state is counterproductive in the context of the holistic research in the field of finance and financial management.

**Figure 2: The development genesis of methods for the detection, measurement and management of Earnings Management**



Source: self processed according to Web of Science and SCOPUS

Based on the above mentioned there is the declared need to consider the specificities of the Slovak Republic in the context of the formation of a complex model of detection and quantification of Earnings management.

Furthermore, we argued by a clear increase in the worldwide scientific community interest in the issue of Earnings Management, expressed by a number of scientific articles, monographs and reviews in two most important scientific databases Web of Science (1068) and Scopus (1579). The degree of originality, in the opinion of the research team even the necessity, is illustrated by the absolute and relative share of the countries of origin of the authors of the presented issue. The United States Scientific Community (426 WoS and 615 Scopus) is an absolute leader in the issue representing 39.89% in WoS and 38.95% in Scopus, followed by China (268 WoS and 182 Scopus) in relative numbers 25.09% WoS and 11.53% Scopus, third is Taiwan (70 WoS and 93 Scopus), which is in relative terms 6.55% in WoS and 5.89% in Scopus. The surprisingly low interest of the scientific community from the countries of the European Union as a whole is striking (156 WoS and 214 Scopus), which is in relative terms (14.61% WoS and 13.55% Scopus). Given that the EU is the second largest world economy in terms of the GDP volume, it could be expected that the interest in such a current issue will be significantly greater. Even more dramatic is the extent of non-interest of the scientific community in the presented issue in transition economies of the European Union (17 WoS and 11 Scopus), which is in relative terms (1.59% WoS and 0.7% Scopus). It will probably not be surprising that there has not been any scientific output in significant databases from Slovakia, yet!!!

The subject of discussions on the suitability of the application of foreign EM detection and quantification models is whether the model formed on the basis of data characterizing the enterprises of one country can be successfully used in other countries. The validity of the subject question multiplies the possibility of an easy implementation in transition countries, in countries that still show a significant degree of differentiation from developed market economies after nearly thirty years of transformation.

## **5 Conclusion**

Synthesizing the above mentioned, we define the unknown possibility for hiding potential of company's bankruptcy. As there is not a lot of scientific researches dedicated to the issue of Earnings management we have defined significant gap, which is important for future research. So in future research we will concentrate on the creation of a quality model for the detection and quantification of Earnings Management, which will take into account the specificities of the national environment as well as of the global development trends in the area concerned. The proposed solution concept reflects the current state of knowledge in the field of Earnings management and is capable of filling in an identified scientific-research gap, which is considerably evident in conditions of the Slovak Republic

and other transition economies due to the impact of the acceleration of globalization, internationalization and interdependence.

Synthesizing the lack of application practice of Earnings management in the Slovak Republic as well as the inappropriateness of the application of foreign models without prior consideration of the specificities of the national environment, the detection of significant endogenous and exogenous quantitative and qualitative input variables of the Earnings management model in the specific conditions of SR becomes an imperative of achieving of the sustainable development.

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### **Reference**

- ARCHIBALD, T. (1967). The Return to Straight-Line Depreciation: An Analysis of a Change in Accounting Method. *Journal of Accounting Research*, Vol. 5, No 3, pp. 164-180.
- BEIDLEMAN, C. (1973). Income Smoothing: The Role of Management. *The Accounting Review*, Vol. 48, No. 4, pp. 653-667.
- BENEISH, M.D. (1997). Detecting GAAP violation: Implications for assessing earnings management among firms with extreme financial performance. *Journal of Accounting and Public Policy*, Vol. 16, No. 3, pp. 271-309.
- COPELAND, R. (1968). Income Smoothing. *Journal of Accounting Research*, Vol. 6, pp. 101-116.
- DEANGELO, L. (1986). Accounting Numbers as Market Valuation Substitutes: A Study of Management Buyouts of Public Stockholders. *The Accounting Review*, Vol. 61, No. 3, pp. 400-420.
- DEFOND, M. and JIAMBALVO, J. (1994). Debt covenant violation and manipulation of accruals. *Journal of Accounting and Economics*, Vol. 17, No. 1-2, pp. 145-176.
- DEGEORGE, F.; PATEL, J. and ZECKHAUSER, R. (1999). Earnings Management to Exceed Thresholds. *The Journal of Business*, Vol. 72, No. 1, pp. 1-33.
- DECHOW, P.M.; SLOAN, R.G. and SWEENEY, A.P. (1995). Detecting Earnings Management. *The Accounting Review*, Vol. 70, No. 2, pp. 193-225.
- DECHOW, P.M.; RICHARDSON, S.A. and TUNA, I. (2003). Why Are Earnings Kinky? An Examination of the Earnings Management Explanation. *Review of Accounting Studies*, Vol. 8, No. 2, pp. 355-384.
- DOPUCH, N. and DRAKE, D. (1966). The Effect of Alternative Accounting Rules for Nonsubsidiary Investments. *Journal of Accounting Research*, Vol. 4, pp. 192-219.
- El Diri, M. (2017). *Introduction to Earnings Management*. Springer. 113 p.



- GORDON, M.J.; HORWITZ, B.N. and MYERS, P.T. (1966). Accounting Measurements and Normal Growth of the Firm. *Research in Accounting Measurement*, 267 p.
- HEALY, P. (1985). The impact of bonus Schemes on the selection of accounting principles. *Journal of Accounting and Economics*, Vol. 7, No. 1-3, pp. 85-107.
- HEPWORTH, S. (1953). Smoothing periodic income. *The Accounting Review*, Vol. 28, No. 1, pp. 32-39.
- HOGLUND, H. (2012). Detecting earnings management with neural networks. *Expert Systems with Applications*, Vol. 39, No. 10, pp. 9564-9570.
- HOGLUND, H. (2013). Estimating discretionary accruals using a grouping genetic algorithm. *Expert Systems with Applications*, Vol. 40, No. 7, pp. 2366-2372.
- IGLEWITZ, B. and HOAGLIN, D.C. (1993). *How to Detect and Handle Outliers*. Kalifornia: ASQC Quality Press. 87 p.
- JETER, D.C. and SHIVAKUMAR, L. (1999). Cross – sectional estimation of abnormal accruals using quarterly and annual data: effectiveness in detecting event – specific earnings management. *Accounting and Business Research*, Vol. 29, No. 4, pp. 299-319.
- JONES, J. (1991). Earnings Management During Import Relief Investigations. *Journal of Accounting Research*, Vol. 29, No. 2, pp. 193-228.
- KANG, S.H. and SIVARAMAKRISHNAN, K. (1995). Issues in testing earnings management and an instrumental variable approach. *Journal of Accounting Research*, Vol. 33, No. 2, pp. 353-367.
- KASZNIK, R. (1999). On the Association between Voluntary Disclosure and Earnings Management. *Journal of Accounting Research*, Vol. 37, No. 1, pp. 57-81.
- KEY, K.G. (1997). Political cost incentives for earnings management in the cable television industry. *Journal of Accounting and Economics*, Vol. 23, No. 3, pp. 309-337.
- KOTHARI, S.P.; LEONEB, A.J. and WASLEY, CH.E. (2005). Performance matched discretionary accrual measures. *Journal of Accounting and Economics*, Vol. 39, No. 1, pp. 163-197.
- McKEE, T.E. (2005). *Earnings Management: An Executive Perspective*. Indiana: Thomson. 216 s.
- MCNICHOLS, M. and WILSON, G. (1988). Evidence of Earnings Management from the Provision for Bad Debts. *Journal of Accounting Research*, Vol. 26, No. 3, pp. 1-31.
- MCNICHOLS, M.F. (2000). Research design issues in earnings management studies. *Journal of Accounting and Public Policy*, Vol. 19, No. 4-5, pp. 313-345.
- PEASNELL, K.V.; POPE, P.F. and YOUNG, S. (2000). Detecting earnings management using cross-sectional abnormal accrual models. *Accounting and Business Research*, Vol.30, No. 4, pp. 313-326.
- RONEN, J. and SADAN, S. (1981). *Smoothing Income Numbers: Objectives, Means and Implication*, Reading, MA, Addison-Wesley.
- RONEN, J. and YAARI, V. (2008). *Earnings Management. Emerging Insights in Theory, Practice and Research*. New York: Springer. 581 s.

- SHIVAKUMAR, L. (1996). *Estimating Abnormal Accruals for Detection of Earnings Management*. In: SSRN Electronic Journal.
- SUBRAMANYAM, K.R. (1996). The pricing of discretionary accruals. *Journal of Accounting and Economics*, Vol. 22, No. 1, pp. 249-281.
- TEOH, S.H.; WELCH, I. and WONG, T.J. (1998). Earnings Management and the Long-Run Market Performance of Initial Public Offerings. *The Journal of Finance*, Vol. 53, No. 6, pp. 1935-1974.
- WHITE, G. (1970). Discretionary Accounting Decisions and Income Normalization. *Journal of Accounting Research*, Vol. 8, No. 2, pp. 101-116.
- YOON, S.S. and MILLER, G. (2003). The Functional Relationships Among Earnings, Cash Flows and Stock Returns in Korea. *Review of Accounting and Finance*, Vol. 2, No 1, pp. 40-58.