J. Basic. Appl. Sci. Res., 3(7)775-784, 2013 © 2013, TextRoad Publication

ISSN 2090-4304

Journal of Basic and Applied

Scientific Research

The Effect of Research and Development Expenditure, Corporate Governance and Financial Performance of The Company Value (Studies in Industrial Manufacturing Indonesia Stock Exchange)

¹Ali Hanafiah, ²M. Syafi'ie Idrus, ³Eko Ganis Sukoharsono, and ⁴Suhadak

Doctoral Program on Management Science, Faculty of Economics and Business, University of Brawijaya,
Malang, East Java of Indonesia

Department of Management Science, Faculty of Economics and Business, University of Brawijaya,
Malang, East Java of Indonesia

Department of Accounting, Faculty of Economic and Business, University of Brawijaya,
Malang, East Java of Indonesia

Department of Business Administration, Faculty of Administrative Science,
University of Brawijaya, Malang, East Java of Indonesia

ABSTRACT

The rapid development to do research and development continuously requires companies to invest in information technology. One of the investments is Research and Development of Information Technology (IT R & D). Increasing the level of research and development transparency requires companies to concern the corporate governance, including through ownership of stock holding company and non-holding companies and non-individual. This study aimed to determine the effect research and development expenditure transparency and corporate governance on company value, either directly or indirectly through the company's performance. The research was conducted on industrial manufacturing companies in Indonesia Stock Exchange. The samples used were 22 companies with a range of observations from 2003 to 2007. Total sample observations obtained are 110. The data obtained was analysed using the Structural Equation Model (SEM). Software used to analyse the data was Partial Least Square (PLS). The research results showed that: (1) research and development expenditure have a positive but insignificant effect on company value. (2) Research and development expenditure have a positive and significant effects on performance of the Company significantly. (3) Corporate Governance has positive and significant effect on Company Performance (4) Corporate Governance has significant and positive effect on company value. (5) The company's performance has positive and significant effect on company value. Indirect effect the research and development expenditure on company value, through the performance of the Company as an intervening variable, also showed a positive and significant. From these findings, the suggestions that can be given are: (1) research and development expenditure should be encouraged in order to face globalization that increasingly powerful, in orders to serve as a starting point or foundation in improving the company performance and value. (2) Corporate governance has to be improved as efforts to increase management performance, organization and coordination of activities of the company to improve corporate performance and corporate value. The results provide a theoretical and practical contribution. Theoretically, the contribution of this research is: (1) to test empirically a theoretical model of information technology investment and Corporate Performance, 2) to test empirically the theoretical model about the effect of research and development on company value. In practical terms, the contribution of this researches' is useful for the development of practical help and strengthen the company's attention to the importance of research and development expenditure and corporate governance to enhance company performance and corporate value.

KEYWORDS: R & D, Corporate Governance, Corporate Values, Manufacturing

INTRODUCTION

Development era coincided with the growing prosperity of society in general encourages demand for quality goods and services consumed. This led to the shifting focus of the management efficiency of the production process to the quality of the product. Improving the quality of products continues to be done by a company with a wide range of research and development (research and development). The company will continue to be adaptive to changes do innovation and continuous development [1] [2][3]. This process allows people to foster creativity and innovation through information technology facilities. Research and development is as a critical activity in the conduct of business or the business of manufacturing firms [4]. So far, we know only two activities performed in the real world. Information technology can be used without knowing the boundaries, so that all activities will be done more quickly and efficiently.

In the manufacturing industry, the customer is the biggest asset that should be preserved. Rapidly changing market requires a management information system to help make decisions. With the rapid increase in the flow of information, the role of research and development expenditure is very important and crucial for industries that want to advance in order to increase their competitiveness in the global market [1]. In the industrial manufacturing industry has a good Research and Development was able to obtain a better return thus increasing the value of the firm [1] [2][3] [5][6] and firm performance [7][4][8][9][10][11][12]. This led to the manufacturing industry gain a positive appreciation of the subsequent appreciation of the positive investor is able to increase the value of the company is reflected in its stock price in the capital market. Shares of information technology companies primarily based IT and internet companies continue to look for people even in a loss. This suggests that technology-based company will provide good benefits for investors. Benefits will also lead to increased firm value and very concern about the performance of their companies. Improved performance of the company is intended to earn a positive appreciation so as to improve the performance and value of the firm carried out with respect to Research and Development of Information Technology (R & D IT) [2][3][5] [7][8][4][9][10][11][12][12]. Also Corporate Governance also plays an important role in improving the performance of the company [13][14][15][16][17][18][19].

Based on the above background, it can be seen that to date research on the influence of R & D IT and corporate governance on corporate performance has been done [3]. In addition, research on the effects of information technology investment and corporate governance of the value of the firm also has a lot to do [13][14]. However, to date, the researcher knowledge, no one has conduct research on the effects of the integration of research and development expenditure and corporate governance on corporate performance, which in turn affect the value of the firm. Looking research gap, the researcher interested to investigate further the influence of research and development expenditure and Corporate Governance of the company's value through the performance of the company as an intervening variable.

MATERIALS AND METHODS

Study of Theory Effect of research and development expenditure on Corporate Performance

So far, many studies conducted research on the impact of research and development expenditure on Corporate Performance. The research was done in the developed countries or developing countries several studies on research and development expenditure on the performance of the company will be disclosed below. Prajogo [9] conducted a study entitled The integration of TQM and technology / R & D management in determining quality and innovation performance. This study aimed to assess the suitability of Total Quality Management (TQM) and R & D expenditure in predicting the performance of the organization. The data used is the manager of a manufacturing company in Australia with a number of samples can be used 150 pieces. Samples were analysed by using SEM analysis. The results showed that TQM is a strong prediction of the performance but there is no significant relationship between innovation and performance. Instead of R & D expenditure showed a significant correlation with the performance but at a lower level compared to TQM, and suggests that a stronger relationship to performance innovation. In addition there is a strong positive relationship between TQM with R & D expenditure. From the results of previous research hypothesis can be formulated as follows

H1: research and development expenditure significantly influence the performance of the company.

Effects of Corporate Governance on Corporate Performance

Research on the effect of corporate governance on corporate performance siphon attention of a lot of research, either in developing countries or in developed countries. Several studies on corporate governance relating to the performance of the company will be disclosed. Core, et al. [14] conducted a study with the title Corporate governance, chief executive officer compensation, and Firm Performance. This study describes the ownership structure and the board on CEO compensation and company performance. The sample used by this study was composed of 495 observations for the three year period 205 publicly traded companies. The data obtained and analysed by regression analysis. The results show that CEO compensation was greater when less effective corporate governance structure. Also found that the components of compensation arising out of the ownership structure and board characteristics are significantly negatively related to the performance and operation of the company. Overall, the results show that companies with weaker corporate governance have more agency problems, in which CEOs receive greater compensation and firm performance is getting worse. Furthermore, from the results of previous research hypothesis can be formulated as follows

H2: Corporate governance significantly influence the performance of the company

Effects of Research and Development expenditure on firm value

Research and development is the expenditure to study many countries all over the continent. Today, research and development expenditure studies are done in countries that have been developed. Several studies

related to the value of the firm will be disclosed below. Suevoshi and Goto [1] conducted a study entitled A Use of DEA-DA to Measure Importance of R & D Expenditure in Japanese Information Technology Industry. This study aims to investigate the use of DEA-DA (Data Envelopment Analysis - Discriminant Analysis). It is widely recognized that Tobin's q serves as a measure of the value of the company. This study investigated the relationship between DEA-DA (as a methodology) and Tobin's q (as a theoretical basis for examining the influence of the performance of the corporate effect on firm value. Z score gives us aggregate information related to financial ratios and financial measures other commonly studied by investors for investment decisions study used the approach to compare the company's manufacturing and it is Japan. Results showed Spending on R & D that IT increases the value of the company. However, spending on R & D IT is important but not essential, as compared to other manufacturing companies in Japan. These results are not consistent with the belief that spending R & D IT is essential for IT industry to maintain Japan's international competitiveness in the global marketplace. Lu and Yang [2] conducted a study with the title The R & D and marketing cooperation across new product development stages: An empirical study of Taiwan's IT industry. This study aims to examine how investment in research and development expenditure on new product development performance and value of the company. The study was conducted at a manufacturing company in Thailand. The number of samples is 153 managers R & D. Data were analysed using multiple regression analysis. The results showed that the higher research and development expenditure, the higher level of marketing is increasing the value of the company. Consequently, the performance of the company in the form of better product development can be achieved. This study adds to reports that companies that adopt an innovation strategy defender reached the level of new product development performance is lower when using the strategy of R & D. Finally, the uncertainty of the environment does not have a significant impact on the level of interest and R & D cooperation is achieved. Furthermore, the hypothesis can be made:

H3: research and development have a significant effect on firm value

The Influence of Corporate Governance of the company's value

Research on the effect of corporate governance on firm value raises a lot of research attention. Several studies on Corporate Governance relating to the value of the company will be disclosed. Black, et al [19] conduct research entitled what matters and for roommates firms for corporate governance in emerging markets? That were the evidences from Brazil (and other countries BRIK). This study aims to examine how the practice of corporate governance practiced universally instead of depending on the characteristics of the country. A case study conducted in Brazil. The survey was conducted on the practice of corporate governance Brazilian firms at the end of 2004, making the construct corporate governance index and show that the index, as well as sub-indices for the leadership structure, board procedure and rights minority shareholders can predict Tobin's q higher lag. In contrast to other studies, the greater independence of the board was the lowers Tobin's q. The characteristic of the company is also an important concern: governance predicts market value to be a problem: corporate governance predict that the market value for a non-corporate non-manufacturing small, high-growth companies. The research expands previous studies from India, Korea and Russia, comparing these countries with Brazil to assess the corporate governance aspects which are important in the country, and for the type of company. The results obtained indicate that the characteristics greatly affect aspects of corporate governance and predicting market value of the company.

H4: Corporate governance significant effect on firm value

Influence company performance against corporate value

Research on the effect of firm performance on firm value mostly showed positive results. Improving performance of the company many proven effects on firm values, either in developing countries or in developed countries. Here's expressed some research on the performance of the company against the value of the firm. Wang, Yung-Jang [15] conducted a study entitled Liquidity management, operating performance, and corporate value: Evidence from Japan and Taiwan. This study aimed to examine the relationship between liquidity management with the company's operating performance. Data retrieved from the database PACAP-Japan, compiled by Pacific rotten Capital Market Research Centre (PACAP). To be able to reflect the current situation and to maintain comparability testing, research horizon covers January 1985 to December 1996. The final sample consisted of 1555 firms and 379 firms for Japan to Taiwan. The data obtained was analysed using regression analysis. The study looked at the cash conversion cycle (CEE) for ROA and ROE have a generally negative relationship and sensitive to industry factors. Neither Japan nor Taiwan firms with q> 1 having ROA and ROE are significantly higher than the company with q1. Overall, these findings suggest that aggressive liquidity management operations and improving performance normally associated with higher firm value despite differences in the characteristics or the financial system.

Terjesena, *et al* [16] conducted a study entitled Alliance diversity, environmental context and the value of manufacturing capabilities among new high technology ventures. This study aims to investigate the performance of the company's manufacturing capabilities in relation to enhance shareholder value. The sample used by this

study is 167 companies manufacturing high-tech venture in the UK. Research is now examining the relationship between corporate performances manufacturing capabilities venture. In addition, the moderating effect of alliances portfolio venture to the environmental context relationship with performance capabilities is also investigated. The results showed that the performance of venture companies (related to sales growth, return on sales (ROS) and return on assets (ROA) is predicted by the manufacturing capability that supports low operating costs and low product quality. Obtained data generally support the hypothesis moderating effects two diversity variables alliances with two environment variables to the relationship context-performance capabilities. Overall, this study supports the premise that the value of manufacturing (e.g capability-performance relationships) among companies manufacturing high-tech venture is related to the context of the alliance and the environment in the venture. In particular, the diversity of partner alliances, geographic and environmental diversity of the alliance to increase the value of manufacturing in favour of lower operating costs. Alliance partner diversity, environmental stability and increase the value of the company's manufacturing environment that encourages quality products. Furthermore, the hypothesis can be made as follows:

H5: firm performance has a significant effect on firm value

Conceptual Framework

Research and development expenditure on information technology [13][6][9] and Corporate Governance [14] today is increasingly becoming a key to improving the performance of the company. Improved performance of the company is very important to encourage the value of shares on the Stock Exchange. Addition, performance improvements can increase firm value [15][16][17]. From the study of existing empirical framework, it can be described as follows:

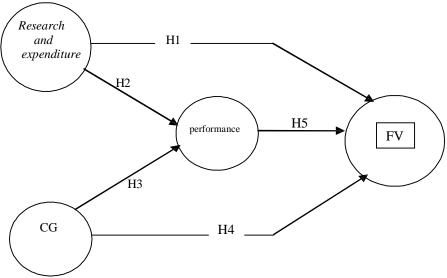


Figure 1 Conceptual framework

Type of Research

In accordance with the title of this study, the effect of research and development expenditure Against Corporate Financial Results (Studies in Industrial Manufacturing Indonesia Stock Exchange), then this type of study is as follows: (a) In terms of the legality of data, this study is the research of ex-post Pacto. Viewed from the aspect of the research objectives, the research is explanatory. The approach of this study refers to the paradigm of positivism.

Population and Sample

The population of this study is all publicly traded manufacturing company listed on the Indonesia Stock Exchange (IDX). Criteria used to select the companies in this study are:

- 1. In the company's financial statements presented no negative equity balance. The balance of negative equity has a different meaning if included in the ratio analysis.
- 2. The company studied has no negative earnings (loss). Conditions are set to avoid bias, because the tax shield (debt tax shield and non-debt tax shields) has no meaning for the company's loss.

- 3. Companies that will be taken as a sample is a company that explicitly reveals estimate (account) R & D or the information contained expert costs in the financial statements or in his explanation during the period from 2003 to 2010.
- 4. The company has consistently paid dividends every year. On the basis of these criteria, the number of companies that meet the criteria are 22 companies, with the number of years of observation for five years, the number of observation in the study 110 observations or cases. Thus, this study used a sample saturated (census).

Research Data

The data used in this study are secondary data. Sources of data in this study came from Indonesia Capital Market Directory 2003-2007. In addition, this study also uses financial statements and testimony was published for the years 2003-2007.

Analysis Method

In an effort to determine the relationship between variables simultaneously would require multivariate statistical method that can analyze more than two variables. The method used is the Structural Equation Model (SEM) based variance. Software used to assist the analysis of SEM is Partial Least Square (PLS)

Partial Least Square Analysis Results

In an effort to obtain structural models of full power, then after setting the structural model (inner model) and measurement model (outer model), which is described in the methodology section, in this section the empirical model of evaluation research. Partial Least Square analysis results, empirical models can be seen visually in Figure 2.

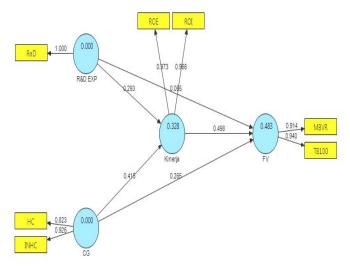


Figure 2 Model Empirical Research

RESULTS AND DISCUSSION

Evaluation of Measurement Model (outer model)

The study used three latent variables with 7 indicators. A latent variable that has a Corporate Governance indicators are formative, while variables performance and corporate value are reflective indicators. Evaluation of latent variable measurement model with formative indicators based on substantive content is by comparing the relative magnitude of weight and saw the significance of the size of the weight. Evaluate each latent variable measurement model can be described as follows:

- a. Corporate Governance Variables
 - Corporate Governance Indicator variables consist of Holding Company block holder and non-individual and Non-holding Company. Block holder holding company (HC), and Non-Individual and the Holding Company block holder (INHC) both significant indicators form (formatting) block holder ownership structure variables.
- b. Variable Corporate Performance

Indicators of corporate performance variables consisted of ROI and ROE. Of the two indicators which are all valid indicators reflect the company's performance. but the Return on Investment is a much stronger indicator reflects the company's performance.

c. Variable Value Company

The indicator value of the company consists of Market to book value ratio (MBVR) and Tobin's Q. Loading factor for both indicators can be seen in Table 1.

Table 1 Testing Results Corporate Value Indicator Variables

Indicator	Outer Loading	T-Statistic (t : 1.96)
Market to book value ratio (MBVR)	0.914	12.659
Tobin's O (TB)	0.940	13.198

Referring to Table 1, it appears that the outer loading variables that reflect the company's value well above 1.96. This means that a valid indicator reflects the company's value. Tobin's Q Indicator reflects the value of the company is stronger than MBVR.

Structural Model Evaluation (Inner Model)

Evaluation of goodness of fit of the structural model using the measured values predictive-relevance (predictive value-relevance is calculated using the formula:

R2 values for each dependent variable can be seen in Table 2

Table 2 R-square dependent variable

Varia	R-
KIN	0.3
FV	0.4
predictive-relevance (*	0. 811

^{*} Calculated results

According to Table 3 it can be seen that:

- \neg It means that the variable FV have influence with the overall predictive power of the model of 0483 or 48.3%, while 51.7% is influenced by other factors or variables that are not included in the model equations.
- ¬ The Company also has a variable performance influence the overall predictive power of the model of 0328 or 32.8%, while 67.2% is influenced by other factors or variables that are not included in the model equations. Overall predictive-relevance of 0.811 or 81.1% means that the model was able to explain the phenomenon of the value of the company amounted to 81.1%, while the remaining 18.9% explained by other variables that have not been entered into the model.

Hypothesis Testing

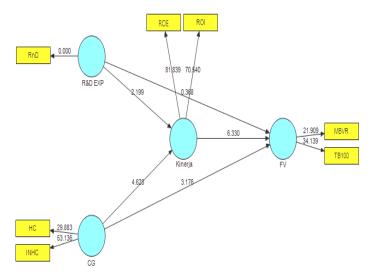
Hypothesis testing is done by t test (t test) in each lane direct effect partially. The results of the analysis are available at the output of the PLS analysis, the attachment.

Testing direct influence

Testing hypotheses directly between research and development expenditure variables, corporate governance, corporate performance and corporate value can be seen in Table 3. The test results influence between the study variables indicated by the path coefficients and t-statistics path diagram Figure 2.

Table 3 The Direct Analysis Results

	Original Sample	Sample Mean (M)	Standard Deviation (STDEV)	Standard Error (STERR)	T Statistics (O/STERR)	Decision
Corporate Governance -> FV	0.265	0.250	0.083	0.083	3.176	Significant
Corporate Governance -> Company performance	0.415	0.414	0.090	0.090	4.628	Significant
research and development expenditure -> FV	0.055	0.064	0.148	0.148	0.368	Not significant
research and development expenditure -> Kinerja Perusahaan	0.293	0.279	0.133	0.133	2.199	Significant
Company Performance -> FV	0.498	0.496	0.079	0.079	6.330	Significant



Description: S = significant; NS = not significant Figure 3 Line Diagram Hypothesis Testing Results:

Based on the results of the analysis indicate that the direct effect path coefficient of information technology investment on firm value obtained value for t-statistic -0.055 to 0.216. This indicates that there is not enough empirical evidence to accept the hypothesis (H1) that research and development expenditures have a significant effect on firm value. Path coefficient is positive means that the relationship between research and development expenditure to the value of the company is unidirectional. This meaning despite increased investment in information technology but does not make a higher firm performance. Based on the results of the analysis indicate that the path coefficients directly influence research and development expenditure on corporate performance obtained a value of 0.293 in the t-statistic 0.2199. This indicates that there is enough empirical evidence to accept the hypothesis (H2) that the research and development expenditure significantly influence the performance of the company. Path coefficient is positive means that the relationship between research and development expenditure by the company's performance is unidirectional. Its meaning is that the higher research and development expenditure the higher the performance.

Based on the results of the analysis indicate that the direct effect path coefficients Corporate governance on corporate performance obtained a value of 0415 on the t-statistic 4628. This indicates that there is enough empirical evidence to accept the hypothesis (H3) that the Corporate Governance significant effect on company performance. Path coefficient is positive means that the relationship between corporate governance and company performance is unidirectional. This means that the better the performance of the company's Corporate Governance higher.

Based on the results of the analysis, it shows that the influence of path coefficients direct corporate governance on firm value obtained a value of 0265 in the t-statistic 3176. This indicates that there is enough empirical evidence to accept the hypothesis (H4) that the Corporate Governance significant effect on firm value. Path coefficient is positive means that the relationship between corporate governance with the enterprise value is unidirectional. This means that the better corporate governance the company's market value is higher. Based on the results of the analysis, it shows that the influence of path coefficients direct performances of the company's enterprise value obtained a value of 0498 on the t-statistic 6330. This indicates that there is enough empirical evidence to accept the hypothesis (H5) that the company's performance significantly on firm value. Path coefficient is positive means that the relationship between performances of companies with enterprise value is unidirectional. This means that the higher performance of the company's enterprise value is higher.

Testing Indirect Effects

Indirect influence between research and development expenditure to the value of the company through the company's performance is obtained through the product of the influence of research and development expenditure on corporate performance (coefficient of 0.293 and significant) with the direct effect of firm performance on firm value (coefficient of 0.498 and significant). The results of these calculations generate indirect effect coefficient of 0.2009. The significance of the indirect effect is determined by examining the significance of the indirect effect.

Indirect influence between corporate governance on firm value through the performance obtained by the product of the influence of corporate governance on corporate performance (0415 and significant coefficient) with the direct effect of firm performance on firm value (coefficient of 0.498 and significant). The results of

these calculations generate indirect effect coefficient of 0.4717. The significance of the indirect effect is determined by examining the significance of the indirect effect.

Measurement models

Measurement models need to be considered first before stepping to the next discussion. Measurement models will show good results when the underlying variables have a high loading factor. The study used three latent variables with 7 indicators. The latent variables are corporate governance has to be formative indicators. Two other variables, namely the performance and value of companies have reflective indicators. Testing hypotheses direct effect of independent variables on dependent variable

Hypothesis 1

It shows that the results of hypothesis testing variable significant effect of information technology investment on firm value. Path coefficient direct influence of information technology investment on firm value obtained a value of 0.055 to 0.368 t-statistics. Path coefficient is positive means that the relationship between research and development expenditure to the value of the company is unidirectional. Its meaning is that the higher research and development expenditure the higher the value of the company. These results are not in line with research by Lu and Yang [2]; Dao, Langella and Carbo [3]. Difference can be explained by the conditions of human resources in Indonesia that still need to be increased again in order to receive entry information technology more quickly. Addition, existing information technology infrastructure in Indonesia is still inadequate and often causes congestion which in turn lowers the value of research and development expenditure itself.

Hypothesis 2

It shows that the results of hypothesis testing variables significantly influence research and development expenditure to company performance. Path coefficients directly influence research and development expenditure on corporate performance obtained a value of 0.293 t-statistics in 2199. Path coefficient is positive means that the relationship between information technology investments with corporate performance is unidirectional. Its meaning is that the higher research and development expenditure the higher the performance. The results are consistent with research conducted by Prajogo and Sohal [9], Durmuşoğlu and Barczak [11], Lai and Lin [12], Mitha and Chaya [20]

Hypothesis 3

It shows that the results of hypothesis testing significant effect of corporate governance on corporate performance. Path coefficient direct effect of corporate governance on corporate performance obtained a value of 0415 on the t-statistic 4628. Path coefficient is positive means that the relationship between corporate governance and company performance is unidirectional. Its meaning is that the higher the corporate governance performance of companies is increasing. The study is in line with the results of research conducted Core, *et al* [15], Baek, *et al* [21]

Hypothesis 4

It shows that the results of hypothesis testing significantly influence corporate governance to firm value. Path coefficient directly influences company performance against the value of the firm obtained a value of 0265 on the t-statistic 3176. Path coefficient is positive means that the relationship between corporate Governance with the value of the company is unidirectional. Its meaning is that the higher the value of the company's Corporate Governance higher.

Hypothesis 5

It shows that the results of hypothesis testing significantly influence company performance enterprise value. Path coefficient directly influences company performance against the value of the firm obtained a value of 0498 t-statistic in 6330. Path coefficient is positive means that the relationship between the performances of the Company's enterprise value is unidirectional. Its meaning is that the higher the company's performance, the higher the value of the company. This research is in line with research Wang [15], Terjesena, et al,[16]

Hypothesis testing indirect effect of independent variables on the dependent variable with the company's performance as an intervening variable

Effect of research and development expenditure to company performance showed 0.352 and significant coefficient. The direct effect of firm performance on firms value shows 0.498 and significant coefficient. The result of multiplying two coefficients produced indirect influence research and development expenditure to the value of the company through the company's performance as an intervening variable of 0.1753. The results showed a significant effect of the indirect effects of research and development expenditure to the value of the company through the company's performance as an intervening variable. Effect of corporate governance of the

company showed coefficients 0.203 and significant. The direct effect of firm performance on firms value shows 0.498 and significant coefficient. The result of multiplying two coefficients produced indirect influence research and development expenditure to the value of the company through the company's performance as an intervening variable of 0.1011. The results showed a significant effect of the indirect effect of corporate governance on firm value through the performance of the company as an intervening variable. Under these conditions, there is sufficient evidence to suggest that the better corporate governance that will encourage better performance, which in turn will enhance shareholder value. Observation of the path coefficients indicating a positive sign means the relationship between the two variables is unidirectional, meaning that the better the value of the company's Corporate Governance higher due to the better performance of the company. Research Baek, *et al* [21] shows that in times of crisis companies implement corporate governance have better performance compared to companies that do not implement corporate governance. Research Beiner *et.al* [22] states that firm performance is measured by ROA significant effect on firm value. Stated that the performance of the company. If two of these studies combined, showed support for the hypothesis that corporate governance indirectly affect the value of the firm with the performance of the company as an intervening variable

Limitations of the study

Every empirical study has limitations that need to be followed up by further research. Research conducted has limitations, as follows:

- 1. This study uses the company's financial statements, so it is affected by the financial accounting standards applicable in Indonesia
- 2. The research was conducted is limited to the manufacturing industry are listed in the Indonesia Stock Exchange. These conditions generalize the results of the study are limited. The use of only a sample of manufacturing industries in the Jakarta Stock generalize results to other industries should be done carefully.

SUGGESTION

- 1. Performance of the company does not stand alone in order to establish the value of the company. While performance is important, determinant of the performance of the company should also be noted that further enhance the value of the company.
- 2. Information technology investment should be encouraged in order to face globalization increasingly powerful information technologies in order to serve as a starting point or foundation of improving the performance and value of the company.
- 3. Corporate governance must be implemented correctly and upgraded as part of efforts to increase the performance of management, organization and coordination of activities of the company to increase company value

REFERENCES

- Sueyoshi, Toshiyuki and Mika Goto. 2012. A Use of DEA-DA to Measure Importance of R&D Expenditure in Japanese Information Technology Industry. *Journal of Decision Support System*: 1-35
- Lu, Louis Y.Y. and Chyan Yang. 2004. The R&D and marketing cooperation across new product development stages: An empirical study of Taiwan's IT industry. Industrial Marketing Management Volume 33: 593-605
- 3. Dao, Viet, Ian Langella and Jerry Carbo. 2011. from green to sustainability: Information Technology and an integrated sustainability framework. *Journal of Strategic Information Systems* Volume 20: 63–7
- 4. Lee, Chih-Cheng, Chien-Ting Lin and Pei-Ting Chang. 2011. An Ohlson valuation framework for valuing corporate governance: The case of Taiwan. *Pacific-Basin Finance Journal* Volume 19: 420–434
- Anokhin, Sergey, Joakim Wincent and Johan Frishammar. 2011. A conceptual framework for misfit technology commercialization. *Journal of Technological Forecasting & Social Change* Volume 78: 1060–1071
- 6. Liao, Ziqi and Paul F. Greenfield. 2000. The synergy of corporate R&D and competitive strategies: an exploratory study in Australian high-technology companies. *The Journal of High Technology Management Research*, Volume 11, Number 1: 93–107

- 7. Caerteling, Jasper S., C. Anthony Di Benedetto, Andre ´G. Dore, Johannes I.M. Halman and Michael Song. 2011. Technology development projects in road infrastructure: The relevance of government championing behavior. *Journal of Technovation* Volume 31: 270–283.
- 8. Prajogo, Daniel I. and Amrik S. Sohal. 2006. The integration of TQM and technology/R&D management in determining quality and innovation performance. *Omega* Volume 34: 296 312.
- Durmuşoğlu, Serdar S. and Gloria Barczak. 2011. The use of information technology tools in new product development phases: Analysis of effects on new product innovativeness, quality, and market performance. *Industrial Marketing Management* 40 (2011) 321–33
- Wanga, Tai-Yue and Shih-Chien Chien. 2007. The influences of technology development on economic performance—the example of ASEAN countries. *Technovation* Volume 27: 471– 488
- Lai. Yung-Lung and Feng-Jyh Lin. 2012. The Effects of Knowledge Management and Technology Innovation on New Product Development Performance-An Empirical Study of Taiwanese Machine Tools Industry. Procedia - Social and Behavioral Sciences 40 (2012) 157 – 164.
- 12. Geisler, E. 1995. AnIntegrated Cost-performance Model of Research and Development Evaluation. *Omega, International Journal Management Science*. Vol. 23, No. 3: 281-294.
- 13. Bianco, Magda and Casavola, Paola. 1999. Italian corporate governance: Effects on financial structure and firm performance. *European Economic Review*, volume: 43 1069
- 14. Core, John E., Robert W. Holthausen and David F. Larcke. 1999. Corporate governance, chief executive officer compensation, and Firm performance. *Journal of Financial Economics* Volume 51: 371-406
- Wang, Yung-Jang. 2002. Liquidity management, operating performance, and corporate value: evidence from Japan and Taiwan. *Journal of Multinational Financial Management* Volume 12: 159–169
- 16. Terjesena, Siri, Pankaj C. Patel, Jeffrey G. Covina. 2011. Alliance diversity, environmental context and the value of manufacturing capabilities among new high technology ventures. *Journal of Operations Management* 29 (2011) 105–115
- 17. Smith, Brian F., and Ben Amoako-Adu. 1999. Management succession and financial performance of family controlled firms. *Journal of Corporate Finance* 5 1999 341–368.
- 18. Hiraki, Hideaki Inoue, Akitoshi Itoa, Fumiaki Kuroki, Hiroyuki Masuda. 2003. Corporate governance and firm value in Japan: Evidence from 1985 to 1998 *Pacific-Basin Finance Journal* Volume 2003: 239–265.
- 19. Black Bernard S., Antonio Gledson de Carvalho, Érica Gorga. 2012. What matters and for which firms for corporate governance in emerging markets? Evidence from Brazil (and other BRIK countries). *Journal of Corporate Finance* Volume 18: 934–952
- 20. Mitra, S; Chaya K Antoine. 1996. Analyzing Cost Effectiveness of Organizations the Impact of Infromation Technology Spending, *Journal of Management Information System, Fall*, Vol 13 no. 2, p.29-57.
- 21. Baek, Jae-Seung, Jun-Koo Kang and Kyung Suh Park. 2004. Corporate governance and firm value: evidence from the Korean financial crisis. *Journal of Financial Economics* Volume 71: 265–313
- Beiner, Alves, C. and V. Mendes, 2004, Corporate Governance Policy and Company Performance: The Portuguese Case, Corporate Governance: An International Review, vol. 12, 290-301