Empirical Test of Fraud Triangle Theory on Local Government (Evidence from Indonesia)

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ABSTRACT

The aim of this research is to test the effectiveness of fraud triangle theory to explain fraud phenomenon on the local government (LG) in Indonesia. The sample of this research was LG in Indonesia which was audited by Supreme Audit Board (BPK) from the period of 2013 to 2014. In addition, data were obtained from BPK and Indonesian Corruption Watch (ICW). Data were analyzed using factor analysis and logistic regression. The results of this research showed empirical evidence of the effectiveness of the fraud triangle theory. Pressure, opportunity and rationalization had a positive impact on fraud of LG in Indonesia. Information such as the ratio of budget performance, the ratio of regional independence, the number of Regional Work Unit (SKPD), population and auditee responses were useful in predicting the presence or absence of fraud in LG in Indonesia.

Keywords: Fraud; fraud triangle theory; local government.

1. INTRODUCTION

The number of fraud cases occurred such as Enron, Tyco, Adelphia and WorldCom caused great harm to the users of financial statements (Skousen et. al., 2009). The audit authority which should have a duty to combat fraud was even failed to detect fraud that affected material financial losses for businessmen (Chwastiak, 2013). Unqualified Opinion is not a guarantee that fraud does not occur (Kaminski et. al., 2004). If the fraud in financial statements is a significant problem, then auditor profession should be able to detect the fraud before it is evolved into a corporate scandal.

The question that arises from the public is whether the information available in the public about the operation and performance of the company can be used to identify factors associated with fraud in financial

reporting. Then, fraud investigation experts recommend financial ratios as an effective tool for detecting fraud (Bai, Yen and Yang, 2008). However, empirical evidence that financial ratios could detect fraud was still not conclusive. Pearson (1995), Spathis (2002) and Dalnial et. al., (2014) found that financial ratios were very useful tools in detecting fraud. Instead, Kaminski et. al., (2004) found the financial ratio was not an effective method for use in detecting fraud.

Research findings by Kaminski et. al., (2004) on what information that can be used to detect fraud is still need to be explored. The standards of auditing on fraud, like SAS No.99, ISA No. 240, and PSA No.70 adopt the theory of fraud triangle (Cressey, 1953). According to this theory, there are three risk fraud factors which always exist during the fraud, i.e. pressure, opportunity, and rationalization. This theory is considered as a complete theory because it is useful to analyze fraud behavior, not only in individual level (Ramamoorti, 2008), but also in organization level (Wells, 1990 and Dellaportas, 2013). The argument that top managers are a reflection the organization, where the organization outcomes (the strategies, policies, and regulations) reflect the values and cognitive of the top managers (Hambrick and Mason, 1984), strengthen the support of Cressey theory in explaining fraud behavior in organization level. However, the amount of empirical research to test the effectiveness of the theory is still a little (Lau and Wang, 2009) because the risk factors of fraud from the theory cannot be observed directly (Skousen et. al., 2009).

Skousen et. al., (2009) were the first researchers to construct predictive models of fraud at the "go public companies". Empirical evidence of the benefits of financial ratios to predict fraud (Persons, 1995; Kaminskietal., 2004) made Skousen et. al., (2009) used financial ratios generated in the research conducted by Altman (1968) as a proxy of the risk factors of fraud. Unfortunately, the selection of financial ratios in the research conducted by Skousen et. al., (2009) that should be based on the theory and empirical evidence could not be conducted because there was no theoretical foundation and the heterogeneous results of previous researches on financial ratios efficacy for detecting fraud. Therefore, exploratory studies are still need to continue (Skousen et. al., 2009).

Researches on fraud, were mostly carried out at the go public company such as Pearson (1995), Spathis (2002), Kaminski et. al., (2004), Skousen et. al., (2009), Lou and Wang (2009), Manurung and Hadian (2013) and Dalnial et. al., (2014). In fact, fraud is not only happening in the go public company, but also in public sector organizations, especially government. The effects are also not less disadvantageous compared to the business sector, that is fraud in the public sector make the services and the community welfare will disrupted.

In Indonesia, Indonesia Corruption Watch (ICW) data showed the number of fraud cases involving local government in Indonesia that was increased significantly in 2013-2014. The number of cases investigated by Corruption Eradication Commission (KPK), the RI Attorney, and the National Police in 2013 was as many as 560 cases with the number of suspects reached 1,271 people and the number was still expected to increase, given the data up to the 1st half of 2014 has recorded 441 reported cases of IDR 43.42 trillion contained criminal elements in which 308 cases were under investigation (ICW, 2014). This fact is then urged the need to perform researches to identify the effective methods to detect fraud in local government in Indonesia.

Related to the fraud phenomenon described above, the research aims to test the Cressey's fraud triangle theory (1953) to see its effectiveness in explaining the fraud phenomenon that occurred in the Indonesian government. This research tries to answer the question of any financial and/or non-financial

information that can provide a signal of fraud in the government of in Indonesia. However, because there are differences in performance assessment purposes in business and public sectors (Mahmudi, 2010), then the proxies of fraud risk factors that were generated in research conducted by Skousen et. al., (2009) and Lou and Wang (2009) cannot be directly used in this study.

This study, first, explored the research findings of fraud in the go public companies in the context of local government in Indonesia, and performed the reduction of these factors in order to find a solid proxy to form the construct of fraud risk factors by applying factor analysis by using exploratory principal of the main component. The basis of fraud risk factors exploration was same such as the research conducted by Pearsons (1995), Spathis (2002), Kaminski et. al., (2004), Skousen et. al., (2009), Lau and Wang (2009) which used financial condition literatures and internal control system (SPI) since these conditions lead to a fraud at the go public companies. Second, we analyzed the relationship between fraud risk factors and fraud on the local government in Indonesia by using logistic regression.

Exploration results on the proxies of Cressey's fraud risk factors in Indonesian local governments found that financial ratios such as the ratio of the budget performance and the ratio of regional independence were useful proxies for measuring the fraud risk factor of pressure. In addition, the number of of Regional Work Unit (SKPD) and population were useful proxies for measuring the fraud risk factor of opportunities. While fraud risk factor of rationalization, for the local government context, this variable can be observed directly from the auditee responses to the findings, conclusions and recommendations and this result was different from the research findings by Skousen et. al., (2009). The test results found the effectiveness of the Cressey's fraud triangle theory where pressure, opportunity and rationalization had a positive influence on fraud in government in Indonesia.

This study has some contributions. First, for the development of science in the field of auditing and public sector as it provides empirical evidence of the effectiveness of Cressey's theory to explain the phenomenon of fraud that occurred in local governments in Indonesia. Second, it has a contribution to an auditor since the study results provides any information that may provide a signal on the areas that have a high potential for fraud so that the auditor would be more skeptical in drafting procedures and the audit process so that fraud can be detected. Third, it contributes the society to supervise the areas that have a high potential for fraud.

2. BACKGROUND AND HYPOTHESIS

AICPA identifies fraud risk factors in SAS 53 and SAS 82, but only SAS 99 which categorizes risk factors of fraud by using Cressey's fraud triangle theory (Wilks and Zimbelman, 2004). According to Cressey (1953), there are three key elements that are always present in the event of fraud. First, the pressure that urges people to commit fraud and it is identified as a common motivator of fraud behavior. SAS No. 99 identifies financial stability, pressure from external, personal financial needs and financial goals of the company as several kinds of pressure that lead to fraud. Second, the opportunity allows fraud can occur. Perpetrators of fraud are sure their activities will not be easy to detect. SAS No. 99 identifies the nature of the industry, ineffective supervision, and organizational structure as conditions that open opportunities for fraud. Third, rationalization as an important element in the fraud where the perpetrators seek to justify fraud acts they perform. SAS No. 99 measures rationalization of fraud perpetrators by using auditor replacement cycle and audit opinion.

Cressey (1953) called the events or conditions of pressure and opportunity to perform a fraud and rationalization to justify acts of fraud as the risk factors for fraud. The presence of fraud risk factors do not always mean fraud, but usually these factors often exist in a state where the fraud occurred (Lou and Wang, 2009). A little amount of researches that test the effectiveness of fraud triangle theory (Lau and Wang, 2009) encouraged the emergence of new research groups such as the research conducted by Skousen et. al., (2009), Lou and Wang (2009), and Manurung and Hadian (2013). That research found empirical evidence of the effectiveness of the fraud triangle theory to explain the phenomenon of fraud that occurred in the go public companies. However, the fact that fraud also occurs in many public sector organizations, especially at the local government in Indonesia (ICW, 2014) makes it important to test the theory of fraud triangle on local governments in Indonesia.

The risk of fraud is likely to be even greater if a person is in a situational pressure (Singleton, 2010). Situational pressure is defined as a condition where the company is experiencing financial difficulties (Beasley et. al., 2010). The condition of financial difficulties tends to encourage fraud to conceal/hide the temporary difficulties which is occurred in the company (Kinney and McDaniel, 1989; Skousen et. al., 2009; Lou and Wang, 2009). Similar to the business sector, the local government also comes under pressure in the form of financial difficulties (Kloha et. al., 2005; Jones and Walker, 2007). Financial pressure on local governments is that financial difficulty due to the inability of local government to provide services to the public according to the service quality standards that have been established due to unavailability of funds (Jones and Walker, 2007). Joining efforts of a local government experiencing financial difficulties with other neighboring local government will only have a small effect in improving its financial (Jones and Walker, 2007). Financial difficulty allows governments to make a local loan as stipulated in Government Regulation no. 54/2005, but the more the flow of incoming funds would further increase the burden to be borne by local governments to repay their debts. The local government can make the budget revision, but the budgeting process in local government is a political process in which every step has a possibility of *fraud* (Isaken, 2005). Therefore, to examine the relationship of pressure and fraud in local governments in Indonesia, the first hypothesis of this study is stated as follows:

H1: Pressure has a positive impact on fraud of local governments in Indonesia.

The condition of asymmetry information between principals and agents open an opportunity for agents to commit fraud in financial reporting. Opportunities will also arise when the internal control system (SPI) of a company is weak (Gagola, 2011). Management has the opportunity to manipulate the transaction if the company has a weak SPI. There are many factors that affect SPI in the company, among others, firm size, firm age, financial health, the complexity of financial reporting, rapid growth, restructuring charges and corporate governance (Subramanyam et. al., 2006; Doyle et. al., 2006). However, the complexity of the company's operations, organizational change, risk measurement applications and resource constraints are the main factors that determine the effectiveness of the SPI (Subramanyam et. al., 2006). Weak SPI opens opportunities of fraud (Subramanyam et. al., 2006; Wilopo, 2006). Therefore, to examine the relationship between opportunity and fraud in local government in Indonesia, the second hypothesis of this study is stated as follows:

H2: Opportunity has a positive impact on fraud of local governments in Indonesia.

Rationalization is the third component of the fraud triangle as the most difficult component to measure because it is associated with the attitude and character of a person (Skousen et. al., 2009). In fact, the

attitude is an important fraud risk factor in comparison with pressure and opportunities as fraud risk factors that are often overlooked by the researchers (Heiman-Hoffman et. al., 1996). According to the Cressey's theory, people will rationalize fraudulent actions undertaken not as a crime and attempt to commit fraud justification for the action he did. The thinking that fraud action is not his or her responsibility is often expressed by many perpetrators to rationalize his or her actions. The number of fraudulent practices that occurred has prompted the management to do the same thing and assume that fraud is a common thing to do (Dellaportas, 2013). Unlike the business sector, action rationalization of the fraud perpetrators in the public sector can be observed from the auditee responses to audit findings (SPKN, 2007). Therefore, to examine the relationship of rationality and fraud in local government in Indonesia, the third hypothesis of this study is expressed as follows:

H3: Rationalization has a positive effect on fraud of local government in Indonesia

3. METHODS

Samples and Sata

Population of this research were all local governments (LGs) in Indonesia audited by BPK-RI for the financial year of 2012/2013 and 2013/2014. The research samples were selected using purposive sampling method based on three (3) criteria: (1) local governments that were audited by Supreme Audit Board (BPK) in 2013 and 2014. (2) The type of BPK audit was financial statements audit. (3) BPK-RI Examination Reports (LHP) therein contained about LHP regarding compliance with the internal control and compliance with the Act. These study samples were presented in Table 19.1. This study uses secondary data in the form of LHP BPK-RI in period of 2013 and 2014 and *fraud* data which happened in Indonesian local government for the period of 2012 and 2013, both for the fraud cases which are still in the law process and those which have been decided by the courts that was tabulated by Indonesian Corruption Watch (ICW) in 2015.

Table 19.1
Study Samples

Description	*Amount*
Local government financial reports in 2012-2013	880
Local government financial reports in 2012-2013 that did not present the full data	(97)
The number of observations of this study	783

Operational Variables and Measurement

Variables are factors that will be studied in the research in which attention is focused on efforts to understand, quantify and assess the relationship between these variables. Meanwhile, the operational variables of this research are as follows.

Fraud in local governments in Indonesia as Dependent Variable

The dependent variable in this study was fraud in local government in Indonesia where fraud was not translated as an act of fraud but as an act against the law set out in many places and with various terms in the Code of Penal (KUHP), the other provisions of the Act governing fraud for example the law on combating corruption, tax laws and money laundering Act (Tuanakotta, 2010). This study used the classification of

action fraud that occurred in local government in Indonesian in the fiscal year of 2012 and 2013 based on the records of fraud across local governments in Indonesia tabulated by ICW. ICW tabulated *fraud* as an act which against law, as regulated in many chapters in the Law Acts in which the fraud cases that happened in the period of 2012 and 2013 are the cases which are still in the law process and *fraud* cases that have been decided by the courts. These variables were measured using a nominal scale by assuming a score of 0 (zero) for non-fraud and a score of 1 (one) for fraud.

Independent Variables

This research used three (3) independent variables as the risk factors for fraud in the fraud triangle theory, those were: pressure, opportunity and rationalization. These variables are difficult to measure directly so that we need to be made proxy for each variable (Skousen et. al., 2009). Because there was no research that used fraud triangle theory for fraud in the context of local governments such as this research, then we use the research findings of fraud in business sectors such as research conducted by Pearson (1995), Spathis (2002), Kaminski et. al., (2004), Gee and McVay (2005), Subarmanyam et. al., (2006), Skousen et. al., (2009), Lou and Wang (2009), Manurung and Hadian (2013), and Dalnial et. al., (2014). This research tried to find relevant proxies for the financial ratios to measure factors affecting financial condition and the SPI in local governments by mapping the previous researches. Table 19.2 presents the mapping results of the indicators of financial condition and SPI in local governments. The proxy of each indicator is presented in Table 19.3.

Table 19.2
The mapping results of the indicators of financial condition and SPI used in this research

Previous Researches	*Indicator*
Financial Condition (Pearson, 1995; Spathis, 2002; Kaminskietal., 2004; Cohen, 2006; Plammer et. al., 2007; Skousen et. al., 2009; Lou dan Wang, 2009; Ritonga et. al., 2012; Manurung dan Hadian, 2013; Dalnial et. al., 2014)	1. Regional financial efficiency (Cohen, 2006; Ritonga et. al., 2012) 2. The financial performance (Plammer et. al., 2007; Ritonga et. al., 2012) 3. Solvency (Ritonga et. al., 2012) 4. Regional Independence (Ritonga et. al., 2012)
Internal Control Systems (Gee dan McVay, 2005; Subarmanyam et. al., 2006; Lou dan Wang, 2009; Jones dan Walker, 2007; Tuanakotta, 2009; Martini dan Zailani, 2011)	5. The complexity of the transaction and the organization (Tuanakotta, 2009; Martini dan Zailani, 2011; Ritonga, 2014) 6. The size of the organization (Gee dan McVay, 2005; Jones dan Walker, 2007; Martini dan Zailani, 2011; Ritonga, 2014)

Table 19.3
Proxy indicator of financial condition and SPI

Indicator	*Proxy*	*Coding*	*Description*
Regional financial efficiency	Financial Efficiency	ETR	$\dfrac{\text{Total Regional Expenditure}}{\text{Total Regional Revenue}}$
Financial performance	Financial performance of the budget	PER_{GW}	$\dfrac{\text{Total Revenue - Total Expenditure}}{\text{Total Revenue}}$
	Financial performance of the fund equity	PER_{FUND}	$\dfrac{\text{Total Revenue - Total Expenditure}}{\text{Total Fund Equity}}$

Indicator	Proxy	Coding	Description
Financial solvency	Long-term solvency	EinvL	Total Investment Equity / Total Debts
	Short-term solvency	ALLL	Total Current Assets / Total Current Debts
	Budget solvency	TREXP	Total Regional Revenue / Total Regional Expenditure
Regional independence	Rasio A	PADTR	Total Regional Original Revenue / Total Regional Revenue
	Rasio B	PADEXP	Total Regional Original Revenue / Total Regional Expenditure
The complexity of the transaction and the organization	Regional Working Unit	SKPD	The number of Regional Working Unit
	Capital Expenditure	BMEXP	Capital Expenditure / Total Regional Expenditure
The size organization	The number of Population	PDDK	The number of population in the year observed

Rationalization in this study did not use definition and proxy developed in research conducted by Skousen et. al., (2009), which connected rationalization and management integrity. This is due to test results by Skousen et. al., (2009) found no differences in the management integrity as measured by audit opinion proxy and auditor turnover among companies with fraud and not fraud, so the hypothesis testing for rationalization could not be performed. This research defines rationalization as the of management's attitude to justify the acts of fraud. In local governments, SPKN No. 1 of 2007 stipulated that the auditor should ask for a written response from the auditee about the findings, conclusions and recommendations and report it in the LHP. This caused rationalization fraud risk factor proxy in this research was no longer need be explored for this variable could already be directly observed. Rationalization variable in this study was measured by counting the number of responses from auditee (TA) in an attempt to justify his or her actions. TA was reported in writing by the auditor in LHP on the compliance with the SPI and the Law.

The logit regression model used in this research is presented in the following equation:

$$L_i = \ln\left(\frac{Pi}{1 - Pi}\right) = \beta 0 + \beta 1 \text{ Pressure} + \beta 2 \text{ Opportunity} + \beta 3 \text{ Rationalization} + \varepsilon$$

L_i is fraud on the local governments in Indonesia, $\beta 0$ is the intercept, $\beta 1$, $\beta 2$, $\beta 3$ are the regression coefficients for the independent variables, namely pressure T, Opportunity K, Rationalization R and ε is the confounding variable or the error term.

4. RESULTS

Data collected from 783 local governments, fraud was found in 445 local governments and the remaining 338 local governments fraud did not occur in the fiscal year of 2012 and 2013. The following are the results

of the statistical calculation factor analysis and logistic regression analysis by using SPSS program software version 22.0 for Windows.

Results of Exploratory Factor Analysis

This study examined 11 (eleven) variables, ETR, PER_{GW}, PER_{FUND}, EinvL, ALLL, TREXP, PADTR, PADEXP, SKPD, BMEXP and PDDK. To identify variables that were interrelated among the 11 (eleven) variables studied, the factor analysis was performed. Table 4 shows a summary of MSA values obtained from the test are shown from the anti-image correlation matrix. MSA is the condition of diagonal matrix and the amount cannot be less than 0.5. If the variable has a value of MSA < 0.5, then these variables should be excluded from the factor analysis. The process of removing items was done one by one starting from the smallest until the MSA values of all variables showed a figure of more than 0.5. In the first process, there were five (5) variables that had MSA values of less than 0.5 those were PER_{FUND}, EinvL, ALLL, TREXP and BM with TREXP MSA as the smallest value when compared to 5 other variables, so that TREXP was firstly excluded. The process of data reduction was done until the 7th process to obtain MSA value for all variables of more than 0.5. Finally the remaining variables of the reduction process carried out 7 times, leaved five (5) variables: PER_{GW}, PADTR, PADEXP, SKPD, and PDDK.

In addition to the value of MSA, KMO MSA value and Bartlett's test of sphericity were also need to be considered in the analysis process. Table 19.5 presents a summary of the KMO MSA value and Bartlett's test for each process of data reduction performed in the analysis. If the KMO value is < 0.5, then the process of data reduction cannot be done. From the test results we found that KMO value of 7 (seven) data reduction processes showed the KMO value of > 0.5 which means that the reduction process can be carried out. In addition, the results of Bartlett's test were indicated by the value of Chi-square and significance of 0.000, which means the reduction process for seven process were all significant in which the correlation matrix is not an identity matrix so that we can perform the next process.

Table 19.4
Summary of MSA Values

Variable	1		2		3		4		5		6		7	
1. ETR	0.535	**	0.533	**	0.539	**	0.538	**	0.398	*				
2. PER_{GW}	0.555	**	0.653	**	0.670	**	0.670	**	0.671	**	0.671	**	0.671	**
3. PER_{FUND}	0.379	*	0.020	*										
4. EinvL	0.497	*	0.499	*	0.499	*	0.499	*	0.473	*	0.446	*		
5. ALLL	0.496	*	0.498	*	0.498	*	0.498	*						
6. TREXP	0.042	*												
7. PADTR	0.996	**	0.995	**	0.995	**	0.995	**	0.995	**	0.996	**	0.996	**
8. PADEXP	0.555	**	0.653	**	0.670	**	0.670	**	0.672	**	0.672	**	0.672	**
9. SKPD	0.513	**	0.512	**	0.507	**	0.511	**	0.515	**	0.515	**	0.515	**
10. BMEXP	0.409	*	0.382	*	0.384	*								
11. PDDK	0.790	**	0.790	**	0.791	**	0.794	**	0.794	**	0.793	**	0.793	**

MSA < 0.5 not accepted dan MSA > 0.5 accepted
[*] not accepted
[**] accepted

Table 19.5
Summary of data reduction

		1	2	3	4	5	6	7
KMOMSA		0.564	0.664	0.682	0.682	0.750	0.751	0.751
Barlett's test								
appChi		13382.13	12649.2	12587.5	12590.9	11409.0	11410.8	11415.4
Square		1	93	58	66	36	71	57
	df	55	45	36	28	21	15	10
	Sig	0.000	0.000	0.000	0.000	0.000	0.000	0.000

Once the data were declared eligible, the factor extraction process was then performed by the method of principal component and found only 2 components of 5 components included in the factor analysis that had eigenvalue of >1. This means that only 5 components could be grouped into two factor groups that may explain variety of components amounted to 85.367% and still above eigenvalue of 1. Thus, two factor groups were valid and acceptable for research in the social field.

Analysis continued to define categories of variables into factors that had been formed. However, since the correlation value of PDDK variable was 0.370 (factor 1); 0.679 (factor 2) then factor rotation was carried out to clarify the differences between the factors. Table 19.6 presents the results of a factor rotation. From the factor rotation results we obtained factor 1 component consisted of PER_{GW}, PADTR, PADEXP variables because these variables had strong correlation values where the correlation value of each variable were 0.993; 0.989; 0.993 on factors 1. The factor 2 component consisted of a SKPD and PDDK variables because these variables had strong correlation values where the correlation value of each variable were 0.838; 0.729 on the two factors.

Table 19.6
Rotation component matrix

	Component	
	1	2
PER_{GW}	0.993	0.084
PADTR	0.989	0.092
PADEXP	0.993	0.084
SKPD	-0.073	0.838
PDDK	0.232	0.729

The next analysis was giving the name for the factors that had been successfully established in the process of factor analysis. Consistent with the initial goal of this research, the naming of the factors that formed from the testing process will use fraud triangle theory of Cressey. Factor 1 consisted of PER_{GW}, PADTR, PADEXP where PER_{GW} was the variable that measured the financial performance of the budget in local governments (Plammer et. al., 2007; Ritonga et. al., 2012), while PADTR and PADEXP were variables that measured the region's autonomy (Ritonga et. al., 2012). These variables were empirically proven useful in predicting financial difficulty in the local government (Plammer et. al., 2007; Sutaryo et. al., 2010), a condition in which the government was unable to provide services to the public based on the service quality standards that had been set. Because this research aims to test the theory of fraud

triangle by Cressey then the variables that were formed in the first factor would be named in accordance with Cressey's fraud risk factor that was the pressure at which the performance and independence of the region were identified as a wide pressure conditions. The result of the variables grouping in factor 1 was consistent with the classification of fraud risk factor in SAS no. 99. Pressure conditions to commit fraud occur when local governments are in financial difficulty. This condition is measured using the ratio PER_{GW}, PADTR and PADEXP. If the ratios indicate a low value, the government is in a pressure condition.

While the variables that made up the factor 2 consisted of SKPD and PDDK variables where SKPD as a variable that measured the complexity of the Region (Tuanakotta, 2009; Martini and Zailani, 2011; Ritonga, 2014) while PDDK mesured the number of people who to measure the size of certain local government (Gee and McVay 2005; Jones and Walker, 2007; Martini and Zailani, 2011; Ritonga, 2014). Complexity can be judged from the number of levels in the organization hierarchy and the extent to which organization units are geographically dispersed to achieve the objectives. The number of residents in an area reflects the budget allocations from the central government for each region in order to meet the needs of each region. Variables that formed the factor 2 were both empirically proven to have a significant influence on internal control in local governments (Gee and McVay, 2005; Doyle, 2007; Martini and Zailani, 2011). If connected to the fraud triangle theory, the factor 2 generated in this research would be given the name of fraud risk factor that was defined as the opportunity of possible fraud actions in local governments. The result of variables grouping in factor 2 was consistent with the classification of fraud risk factor in SAS no. 99. Opportunity conditions to commit fraud occur when governments have more number of SKPD and PDDK.

Hypothesis Testing Results

Cressey's theory testing in this study was conducted by using a logistic regression model analysis by the independent variables proxy as presented in Table 19.7.

Table 19.7
The independent variables proxy

Independent Variable	Proxy		
Pressure	PER_{GW}	PADTR	PADEXP
Opportunity	SKPD	PDDK	
Rationalization	TA		

Based on the model test results simultaneously by using G test statistic, we obtained G test statistic value of 844.640 and *p*-value = 0.000, because the *p*-value was $< \alpha = 0.05$, H0 was rejected, which means that in the fraud of Indonesian local governments minimum there was one independent variable which influenced the occurrence of fraud in Indonesian local governments. Due to the simultaneous model test that rejected H0, then the partial testing could be done by using the Wald test to determine the accuracy of the partial model testing. The test results found that the pressure variable of (0.038), opportunity variable of (0,000) and rationalization variable of (0,000) and significantly influenced the fraud in Indonesian local governments, so that all hypotheses that were tested in this research (H1, H2 and H3) were supported.

Table 8
Logistic Regression Results

Variable	B	Wald	Sig	Odds Rasio
Pressure	0.414	4.303	.040*	1.513
Opportunity	3.266	41.488	.000*	26.199
Rationalization	0.375	145.644	.000*	1.454
Contanta	−9.269	143.719	.000*	0.000

Note: * sig *a* = 0.05
The score factor of pressure is multiplied by −1
(To ease the interpretation)

Based on test results presented in table 8, then the chances of logistic regression with logistics transformation is:

$$L_i = \ln\left(\frac{Pi}{1-Pi}\right) = -9.269 + 0.414\ \text{Pressure} + 3.266\ \text{Opportunity} + 0.375\ \text{Rationalization} + \varepsilon$$

To ease the interpretation, the score factor of pressure is multiplied by -1. This was done because of pressure occurs when local governments are in financial difficulty where the ratio PER_{GW}, PADTR and PADEXP showed a low value. Coefficient B which showed a positive sign at 0.414 and significant to the pressure variable means that the higher the ratio the financial performance of the budget and independence ratio, the smaller the pressure, because the local government was in good condition then the probability of fraud occurrence in the local government was getting smaller. For the opportunity variable, the coefficient B was positive at 3.266 and significant. It means the more number of SKPD and populations in a local government indicates the greater opportunity, and then the probability of fraud occurrence is also greater. Finally, in rationalization variable, coefficient B was positive at 0.375 and significant. It means that greater number of responses indicates greater auditee' attempt to rationalize his or her actions, the probability of fraud occurrence was also greater.

From the Nagelkerke R Square value of 0.886, it could be concluded that the three independent variables consisted of pressure, opportunity and rationalization were able to explain the situation/condition that caused the fraud occurrence in the local governments in Indonesia amounted to 88.6 percent and the remaining 11.4 percents was determined by other factors outside this study. However, Nachrowi and Usman (2008) stated that the accuracy of the function model in logistic regression odds can be seen by the accuracy of the model in conducting research object classification. Table 9 shows the fraud on the government in Indonesia that can be appropriately qualified and wrongly qualified. Overall, the model was able to predict the accuracy of fraud prediction in local governments in Indonesia amounted to 95.3 percent.

5. DISCUSSION

The test results with factor analysis found the factor group consisted of the ratio of the budget performance and the ratio of regional independence as the factors that formed the construct of fraud risk factors of pressure. The financial ratio is the empirically proven ratio to assess the condition of the financial difficulties in local government (Plammer et. al., 2007; Sutaryo et. al., 2010). The local government budget performance is measured from the difference between revenue and expenses to total revenue, so higher remaining budget

makes the local government to be categorized as local governments with good performance. Financial performance is also seen in terms of the independence of the region assessed from the percentage of Regional original revenue (PAD) to total revenue and a percentage of revenue to the Regional expenses (Ritonga et. al., 2012). Thus, the greater region's ability to generate revenue to fund regional needs both for operational expenditure and capital expenditure of the local government will make the local governments to be classified local government with good performance.

Financial difficulty condition may occur when the ratio of the budget performance and the ratio of regional independence indicate a low number (Plammer et. al., 2007; Sutaryo et. al., 2010). Results of empirical test with logistic regression found that the higher the ratio of the budget performance and the ratio of local independence, the smaller the probability of fraud in the local government, and vice versa. This research finding was not different from the research findings in the business sector conducted by Skousen et. al., (2009), Lou and Wang (2009) and Manurung and Hadian (2013).

In government organizations, financial performance is measured by whether or not the budget is absorbed for use in the provision of public services (Cohen, 2006; Sutaryo et. al, 2010; Ritonga et. al, 2012). If the government has a budget surplus, the government has an obligation to repay the funds to the state treasury and consequently the submission of the next year's budget should not exceed the budget realization in the event of a surplus. This budgetary policy makes no guarantee of funds availability to finance the construction of the next period.

Based on this condition, then SKPD as the budget developer will make changes to the budget plan that has been set previously for the purpose of absorbing the budget surplus, whereas, revision to the budget plan is a common thing to do (Forrester and Mullins, 1992). And, if the local revenues cannot cover the expenditure in the budget revision process, then governments can seek additional sources of funding beyond the local revenues so that local governments created a huge dependency on equalization funds.

The existing rules and policies then are used by the perpetrators and the driver of mechanism process in the system when implementing governance to maximize personal and/or certain group's interests that dominate the behavior of the local government. This is in line with the findings of Chang and Turnbull (2002) that the budget uptake in the local government according to public choice theory will always aims to maximize personal and/or certain dominant group's interests in the organization. So, budgeting is a political process where at each stage of the budget process there is room for budget corruption (Isaksen, 2005).

Another factor group that was formed from the factor analysis results was SKPD and population as factors that formed the construct of fraud risk factor of opportunity. At governmental organizations, more SKPD and population showed increasingly complex region and larger size of the area. This is then become the reason why the internal control system (SPI) in the regional governments become weaker (Tuanakotta, 2009; Jones and Walker, 2007; Martini and Zailani, 2011; Ritonga, 2014). Similar to the business sector, in government, SPI also plays an important role in keeping the assets of the organization. SPI implementation in government is even regulated by Government Regulation No. 60 of 2008 on the Government's SPI. Results of empirical test with logistic regression found that the more number of SKPD and population in a local government, the greater the probability of fraud occurrence in the local government, and vice versa. Good SPI cannot ensure that fraud does not occur, given that most perpetrators of fraud are the executives who where the parties can directly intervene with the power they have to deflect the implementation of

internal control system (COSO, 1999), especially when the SPI is in weak condition as happened in most local governments in Indonesia (BPK IHP, 2013; 2014). Thus, the finding of the fraud risk factor of opportunity in this study was not different from the findings in the business sector as conducted by Skousen et. al., (2009) and Lou and Wang (2009) where opportunity had a positive influence on fraud.

However, different findings appeared in fraud risk factor of rationalization compared to the previous researched in the business sector. The fundamental difference was arised because of the differences in operational definitions and a proxy for measuring rationalization. In Cressey's theory, rationalization was a person's attitude to do efforts to justify his or her fraud acts. However, Skousen et. al., (2009) connected the rationalization to the management integrity because it was difficult to measure the attitude and character of a person. Skousen et. al., (2009) did not manage to find the appropriate proxy for measuring fraud risk factor of rationalization, so that hypothesis testing for rationalization could not be performed. For fraud in the local government context, this study used the definition of rationalization by Cressey's theory where rationalization was measured by using auditee responses presented in the LHP.

The perpetrators of fraud will always try to justify their fraud acts. Many reasons are put forward by the perpetrators to justify their fraud acts for example there are no rules and systems that regulate activities, the actions are not their responsibilities, even that such measures are already common things (Dellaportas, 2013). Therefore, the more number of auditees' responses that deny the auditor's findings showed the greater efforts of the auditees to rationalize their actions, thus increasing the probability of fraud. This result is consistent with the explanation of the rationalization as fraud risk factor stated by Cressey and is in line with research findings by Lou and Wang (2009) where rationalization had a positive influence on fraud.

6. CONCLUSIONS

This study has the goal to find empirical evidence of the effectiveness of Cressey theory whether it has an influence in detecting fraud on the local government in Indonesia. Results of empirical test with logistic regression found empirical support for the Cressey fraud triangle theory to explain the phenomenon of fraud on the local government in Indonesia. Pressure condition, opportunity and rationalization had a positive influence on fraud on government in Indonesia. The financial information in the form of financial ratios such as the performance ratio of the budget and the ratio of local independence and non-financial information such as the number of SKPD, population, the auditee responses to the findings, conclusions and recommendations were useful in predicting the presence or absence of fraud on the local government in Indonesia. The test results of Fraud Prediction Model compiled in this study found that the model was able to predict the accuracy of fraud prediction on the local government in Indonesia amounted to 95.3 percent.

This study has limitations that may be taken into consideration for future research that was the measurement of the dependent variable that had not been split between fraud that had been decided by court and fraud that was still under investigation since a short period of observation that was only two years. Most of fraud cases in the Indonesian government in the period of observation were still the cases in court proceedings so that the cases still had a chance to receive the decision as not a fraud case by the court. The future researchers should extend the period of observation and use the fraud data that has been decided by the court.

References

AICPA. (2002), SAS No. 99. Consideration of Fraud in a Financial Statement Audit. AICPA-New York.

Altman, A, Edward (1968), "Financial Ratios, Discriminant Analysis, and the Prediction of Corporate Bankruptcy." The Journal of Finance, 13, No. 4, Sept., pp. 589-609.

Association of Certified Fraud Examiners. (2008). Fraud Examination and Forensic Accounting Services. (Online). http://www.forensicinvspec.com/on January 20, 2015.

B. Bai, J. Yen, and X. Yang (2008), "False financial statements: Characteristics of China's listed companies and cart detecting approach." International Journal of Information Technology & Decision Making, 7, No. 2, June, pp. 339-359.

Beasley, Mark S., Carcello V Joseph., R Hermanson and L Terry. (2010), Fraudulent Financial Reporting: 1998-2007. An Analysis of U.S. Public Companies. The Committee of Sponsoring Organizations of the Treadway Commission (COSO), New York, pp. 1-45.

Chang, Chinkun and Turnbull K Geoffrey (2002), "Bureaucratic Behavior in the Local Public Sector: A Revealed Preference Approach." Public Choice, 113, No. 1, Oct., pp. 191-210.

Chwastiak, M (2013), "Profiting from destruction: The Iraq reconstruction, auditing and the management of fraud." Critical Perspectives on Accounting, 24, No.1, Sept., pp. 32-43.

Cooper D.J, Dacin Tina and Palmer Donald (2013), "Fraud in accounting, organizations and society: Extending the boundaries of research." Accounting, Organizations and Society, 38, Agust-Oct., pp. 440-457.

Dalnial H, Kamaluddin, Sanusi and Khairuddin (2014), "Detecting Fraudulent Financial Reporting through Financial Statement Analysis." Journal of Advanced Management Science, 2, No. 1, March, pp. 17-22.

Dellaportas, Steven (2013), "Conversations with inmate accountants: Motivation, opportunity and the fraud triangle." Accounting Forum, 37, No. 1, March, pp. 29-39.

Doyle, J., Ge, Weili, McVay, (2007), "Determinant of Weakness in Internal Control Over Financial Reporting." Journal of Accounting and Economics, 44, No. 1, Sept., pp. 193-223.

Forrester, John P and Daniel R. Mullins (1992), "Rebudgetting: The Serial Nature of Municipal Budgetary Processes." Public Administration Review, 52, No. 5, Sept., pp. 467-473.

Gagola, Antonius S.C (2011), Analisis Faktor Risiko Yang Mempengaruhi Kecenderungan Kecurangan Pelaporan Keuangan Perusahaan Publik Di Indonesia. Tesis Tidak Dipublikasikan, Program Studi Magister Akuntansi program Pasca sarjana, Universitas Diponegoro.

Ge, Weili, McVay (2005), "The Disclosure of Material Weakness in Internal Control After Sarbanes-Oxley Act." Accounting Horizon, 19, No. 3, Sept., pp. 137-158.

Government Regulation No. 54/2005 about Regional Loan.

Government Regulation No. 60/2008 about Internal Control System in Public Sector.

Hambrick, D. and Mason, P (1984), "Upper Echelons: the organization as a reflection of its top managers." Academy of Management Review, 9, No. 2, Apr., pp. 193-206.

Heiman-Hoffman, V. B., K. P. Morgan, and J. M. Patton (1996), "The Warning Signs of Fraudulent Financial Reporting." Journal of Accountancy, 182, No. 4, Feb., pp. 75-81.

IAPI. (2011), Standar Profesional Akuntan Publik (SPAP), Penerbit Salemba Empat, Jakarta.

International Auditing and Assurance Standards Board (IAASB). 2009. The Auditor's Responsibilities Relating to Fraud in an Audit of Financial Statements. International Standard on Auditing (ISA) No. 240. Available at: http://www.ifac.org/system/files/downloads/a012-2010-iaasb-handbook-isa-240.pdf.

Indonesia Corruption Watch (2015), Kasus Fraud di Pemerintah Daerah Indonesia tahun anggaran 2012 dan 2013. Laporan tidak dipublikasikan, Jakarta.

Isaksen, Jan (2005), "The Budget Process and Corruption. U4 Anti-Corruption Resource Centre." Working Paper No. U4 Issue 3.

Jones, Stewart and R., G., Walker (2007), "Explanators of Local Goverment Distress." Abacus, 43, No. 3, Sept., pp. 396-418.

Kaminski, T. S. Wetzel, and L Guan (2004), "Can financial ratios detect fraudulent financial reporting?" Managerial Auditing Journal, 19, No. 1, March, pp. 15-28.

Kinney, W and McDanel, L (1989), "Characteristics of Firms Correcting Previosly Reported Quarterly Earnings." Journal of Accounting and Economics. Feb., pp. 71-94.

Kloha, P., Weissert, C.S. and Kleine, R (2005), "Developing and Testing A Composite Model to Predict Local Fiscal Distress." Public Administration Review, 65, No. 3, May, pp. 313-323.

Lou, Y.I., and Wang M Ling (2009), "Fraud Risk Factor of the Fraud Triangle Assessing The Likelihood Of Fraudulent Financial Reporting." Journal of Business & Economics Research, 7, No. 2, pp. 61-78.

Mahmudi. (2010), Analisis Laporan Keuangan Pemerintah Daerah, Edisi 2, UPP STIM YKPN, Yogyakarta.

Manurung T.H.D and Hadian Niki (2013), Detection Fraud of Financial Statement with Fraud Triangle, Proceeding of 23rd. International Business Research Conference, Melbourne Australia. ISBN: 978-1-922069-36-8.

Martini and Zaelani (2011), Pengaruh Ukuran, Pertumbuhan dan Kompleksitas terhadap Pengendalian Intern Pemerintah Daerah Studi Kasus di Indonesia, Simposium Nasional Akuntansi XIV, Aceh.

Nachrowi, Nachrowi Djalal. and Hardius Usman. (2008), Penggunaan Teknik Ekonometri: Pendekatan Populer dan Praktis Dilengkapi Teknik Analisis dan Pengolahan Data dengan Menggunakan Paket Program SPSS, Edisi Revisi, PT Raja Grafindo Persada, Jakarta.

Plammer, E., Hutchison, P. dan Patton, T (2007), "GSAB No. 34's Governmental Financial Reporting Model: Evident on Its Information Relevan." The Accounting Review, 82, No. 1, Jan., pp. 205-240.

Persons, O.S (1995), "Using financial statement data to identify factors associated with fraudulent financial reporting." Journal of Applied Business Research, 11, No. 3, pp. 38-46.

Ramamoorti, S (2008). "The psychology and sociology of fraud: Integrating the behavioral sciences component into fraud and forensic accounting curricula." Issues in Accounting Education, 23, No. 4, Nov., pp. 521-533.

Ritonga Irwan T. (2014), Analisis Laporan Keuangan Pemda, Cetakan 1, Lembaga Kajian Manajemen Pemerintahan Daerah dan Pustaka Pelajar, Yogyakarta.

Ritonga Irwan T., Clark C, and Wickremasinghe G (2012), "Assessing Financial Condition of Local Government in Indonesia: an Exploration." Public and Municipal Finance, 1, No. 2, pp. 37-50.

Singleton WT, Singleton AJ. (2010), Fraud Auditing and Forensic Accounting, 4th edition. Willey Corporate F&A.

Skousen C., Kelvin R. and Charlotte J (2009), "Detecting and Predicting Financial Statement Fraud: The Effectiveness of The Fraud Triangle and SAS No. 99." Corporate Governance and Firm Performance Advance in Financial Economics, 13, pp. 53-81.

Spathis C (2002), "Detecting false financial statements using published data: Some evidence from Greece." Managerial Auditing Journal, 17, No. 4, Dec., pp. 179-191.

Subramanyam *et. al*, K.R., M. Ogneva dan K. Raghunandan. (2006), "Internal Control Weakness and Cost of Equity: Evidence from SOX Section 404 Disclosures." http://ssrn.com/abstract694681.

Supreme Audit Board (2007), Standar Pemeriksaan Keuangan Negara (SPKN). Jakarta.

Sutaryo., Bambang Sutopo dan Doddy Setyawan. (2010), Nilai Relevan Informasi Laporan Keuangan terkait Financial Distress Pemerintah Daerah, Simposium Nasional Akuntansi XIII, Purwokerto.

Tuanakotta, Theodorus M. (2010), Akuntansi Forensik dan Audit Investigatif, Edisi 2, Salemba 4, Jakarta.

Wells, Joseph T (1990), "Six Common Myths about Fraud." Journal of Accountancy, 169, No. 2, Feb., pp. 82-88.

Wilks, T. J. and M. F. Zimbelman (2004), "Decomposition of Fraud-Risk Assessments and Auditors' Sensitivity to Fraud Cues." Contemporary Accounting Research, 21, No. 3, Fall, pp. 719-745.

Wilopo (2006), "Analisis Faktor-faktor yang Berpengaruh Terhadap Kecenderungan Kecurangan Akuntansi: Studi pada Perusahaan Publik dan Badan Usaha Milik Negara di Indonesia." The Indonesian Journal of Accounting Research, 9, No. 1, March., pp 346-366.