THE EFFECTS OF A LEGAL PROCESS ON MANAGEMENT OF ACCRUALS: FURTHER EVIDENCES ON MANAGEMENT OF EARNINGS

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ABSTRACT

Studi ini meneliti tentang manajemen earnings perusahaan yang memasukkan tuntutan atas kerugian karena pelanggaran undang-undang anti-monopoli dan antitrust oleh perusahaan lain. Earnings merupakan informasi yang penting dan menjadi salah satu pertimbangan dalam keputusan pengadilan (atau di luar pengadilan) mengenai jumlah ganti rugi yang harus diterima oleh perusahaan penuntut dan denda yang harus dibayar oleh perusaan yang dituntut (yang dituduh melanggar undang-undang anti-monopoli). Perusahaan melakukan manajemen earnings melalui pemilihan metode akrual dalam proses penentuan earnings. Kami memprediksi bahwa perusahaan penuntut akan menggunakan akrual untuk menurunkan earnings selama periode tuntutan. Hipotesis kami uji dengan membandingkan tingkav akrual perusahaan penuntut selama periode proses pengadilan dibanding dengan tingkat akrual selama periode di luar proses pengadilan.

Informasi earnings dan keuangan 118 perusahaan tahun, terdiri dari 13 perusahaan selama tahun 1984 - 1992 yang digali dari harian Wall Street Journal digunakan sebagai sampel. Data finansial perusahaan sampel kami ambil dari COMPUSTAT industrial atau Research Tapes. Model akrual Jones (1991) digunakan untuk menghitung tingkat discretionary accruals. Penelitian ini menunjukkan tidak menunjukkan bukti bahwa perusahaan penuntut memanipulasi akrual untuk menurunkan laba pada saat investigasi dan proses pengadilan. Beberapa penjelasan yang mungkin dapat kami berikan adalah udanya informasi lain yang lebih bermanfaat bagi penuntut dalam memenangkan tuntutan, misalnya mengenai penentuan harga, strategi pengembangan produk dan diversiftkasi usaha. Faktor hasil proses pengadilan mungkin juga merupakan variabel penting yang perlu dilihat dalam penelitian seperti ini.

1. INTRODUCTION

This study examines the effects of antitrust litigation on management of earnings through discretionary accruals for firms that file suits because their rivals monopolize the businesses. Information of earnings is an important evidence to prove that the victim (suing) firms are really injured from the antitrust actions performed by

alleged firms. For that reason, in order to win the cases, the suing firms may manage (decrease) earnings.

Managers of the victim firms have incentives to manipulate earnings to show that their businesses are affected unfavorably by the monopolistic alleged firms. Managers of the victim firms attempt to win the cases because the possible rewards associated with favorable antitrust rulings, even if the cases are settled out of the court, can be extremely high.

This study examines longitudinally whether managers of the victim firms reduce their firms' accounting earnings through discretionary accruals. The discretionary accruals of 13 firms were estimated over a nine year period using Jones' (1991) accrual model. Based on this model, the residuals of the accrual model from the regression of total accruals on the change in sales and the fixed asset balances represent the discretionary accruals.

This study extends those of Jones' (1991), Cahan's (1992), and Na'im and Hartono (1996). Cahan (1992) and Na'im and Hartono (1996) found that firms which are sued because they monopolize the businesses decrease their earnings to reduce the potential penalties. The studies argue that earnings is an important information in the litigation and court decision so that the managers have incentives to manipulate earnings. This study extends the argument in that, it is not only managers of the sued firms but also the suing firms who have incentives to manipulate earnings.

This study is the same with that of Jones's (1991) in the sense that the sample firms are injured firms whose managers seek some rewards by manipulating the earnings through discretionary accruals. However, the issues are different in that Jones (1991) use import tax relief situation while this study uses antitrust and anti monopoly situation.

2. LITERATURE REVIEWS

Many studies have documented that managers use discretionary accruals to manipulate earnings for some purposes: to increase bonuses (Healy, 1985), to avoid management buyout of public stockholders (DeAngelo, 1986), to increase import relief granted (Jones, 1991) and to prove that the firms do not monopolize the businesses (Cahan, 1992).

Healy (1985) examined 94 firms over the 1930 to 1980 period to test the hypothesis that managers use discretionary accruals to maximize their bonuses. In his study, Healy found that many incentive plans have lower and upper bounds which limit the minimum and maximum bonuses to be paid. His results indicate that managers have incentives to increase earnings through increasing discretionary accruals when actual earnings are in between lower and upper bounds, and decrease earnings through decreasing discretionary accruals when actual earnings are below the lower bound or above the upper bound.

DeAngelo (1986) investigated managers of 64 NYSE firms who proposed to buy all publiclyheld common stock of their firms during 1973-1982. She hypothesized that managers have incentives to understate reported earnings to pay outside stockholders less than fair values of their shares. Her results reveal no evidence that managers used discretionary accruals to reduce earnings in periods before a management buyout of public stockholders.

Jones (1991) investigated 23 firms from five industries which were in import relief investigation conducted by the United States International Trade Commission (ITC). The managers of domestic producers have incentives to use discretionary accruals to reduce reported earnings to increase the apparent injury of their firms because of the import regulation. The results suggest that managers make incomedecreasing accruals during the import relief investigations.

The Federal Trade Commission (FTC) and Department of Justice (DOJ) have also used accounting numbers as one of the factors to identify and prosecute antitrust violations. In the late 1950s, FTC and DOJ used high accounting rate of return as evidence of monopoly, and beginning in 1970s these agencies used large profit as an indicator of antitrust violation. For example, accounting-based analysis played a substantial role in cases involving IBM and General Mills (Elzinga 1989).

The relationship of accounting numbers and political process has also been interest to accounting researchers. The political process theory suggests the hypothesis that, ceteris paribus, politicians are more likely to impose political costs, in the form of unfavorable regulations, on firms with higher incomes (Watts and Zimmerman, 1978 and 1986). Under this hypothesis, politicians tend to use excessive reported earnings as evidence of a monopoly. As managers are allowed to choose

among accounting methods, the political costs theory predicts that managers of monopoly firms which are likely to be targeted by costly political action have incentives to choose accounting methods to produce lower earnings. The study by Cahan (1992) tests this political process hypothesis. Cahan's (1992) study examined earnings management of the firms under antitrust investigations. The discretionary accruals for 48 firms that were investigated for antitrust violations were estimated over a 15-year period from 1970 to 1983. He found that the discretionary accruals of the firms were more income-reducing during the investigations than in non-investigation periods.

3. HYPOTHESIS

Managers can choose alternatives to manipulate earnings, either through discretionary accruals or through accounting choices. Managers usually use accruals to manipulate earnings, since accruals manipulation is more difficult to be detected than accounting choices. Both methods are not against any laws, since accruals or accounting choices only transfers earnings from one period to another period. In the period of litigation, managers tend to decrease earnings through accruals and increase earnings through accruals after litigation ends. This leads to the hypothesis (stated in alternate form) as follows.

HI: Managers of victim firms use discretionary accruals to reduce reported earnings during litigation periods as compared to nonlitigation periods.

This study tests the hypothesis whether the discretionary accruals of victim firms during the litigation period were lower, or more incomereducing than those in nonli-tigation periods. This hypothesis is tested using a dummy variable, coded one for the litigation periods and zero for nonlitigation periods.

4. METHODOLOGY

4.1. The Model

This study uses accruals as a measure of earnings management. Accrual choices are less visible and less likely to be detected than accounting choice method,

because the adjustments need information which is not available to the regulators (Schipper, 1989). Regulators rationally use simple decision models because of limited time and ability, so they may not make those adjustment (Jones, 1991). Managers have more incentives to use accruals than accounting choices to manipulate earnings, since the accruals will not have been exhausted prior to investigation (Cahan, 1992).

Following DeAngelo (1986) and Jones (1991) the total accruals of a firm (TOTACC), are decomposed into discretionary accruals, and nondiscretionary accruals. The discretionary accruals can be estimated by taking total accruals, defined as the change in the working capital accounts less depreciation and deferred tax expenses, reduced by an estimate of the nondiscretionary accruals (NDA). Thus,

$$DA = TA - NDA \qquad (1)$$

where DA is estimated discretionary accruals. The nondiscretionary accruals (NDA) can be estimated by regressing total accruals (TOTACC) on two variables, the change in sales (DSALES) and the fixed assets balance (FIXASS). As the discretionary accruals are unexpected, defined as the prediction error, the DA for firm i in year t can be written as:

$$TOTACC_{it} = {}_0 + {}_1 DSALES_{it} + {}_2 FIXASS_{it} + \mu_{it} \qquad (2)$$

where μ_{it} is discretionary accruals (DA), and (${}_0 + {}_1 DSALES_{it} + {}_2 FIXASS_{it}$) is nondiscretionary accruals (NDA).

The total accruals, $TOTACC_{it}$, were computed as follows (Healy, 1985):

$$TOTACC_{it} = - DEP_{it} + (AR_{it} - AR_{it-1}) + (INV_{it} - INV_{it-1}) -$$

$$(AP_{it} - AP_{it-1}) - (TP_{it} - TP_{it-1}) - DEF_{it} \qquad (3)$$

where DEP is depreciation, AR is account receivable balance, INV is the inventory balance, and DEF is deferred tax expense.

The estimated discretionary accrual (DA) is defined as the residual, μ_{it} from the following model (Cahan, 1992):

$$TOTACC_{it}/TA_{it} = b_0 [l/TA_{it}] + bl [DSALES_{it}/TA_{it}] + b_2 [FIXASS_{it}/TA_{it}]$$

$$+ \mu_{it} \qquad (4)$$

where DSALES is the change in sales from year t-1 to year t and FIXASS is the balance of property, plant and equipment at the end of year t. The constant term,

TOTACC, DSALES, and FIXASS are deflated by total assets (TA) to reduce the effect of heteroscedasticity.

To test the hypothesis, equation (4) is expanded to include a dummy variable, INVSTG which is coded one for the litigation periods and zero for nonlitigation periods. The equation (4) becomes:

$$TOTACC_{it}/TA_{it} = b_0 [lATA_{it}] + \mu_{it}$$

$$bl [DSALES_{it}/TA_{it}] + b_2[FIXASS_{it}/TA_{it}] + b_3INVSTG + \mu_{it} \qquad (5)$$

If managers decrease the accruals during the investigation period, the coefficient of the INVSTG is expected to be negative.

4.2. Sample

The sample consists of 13 companies for the period of 1984-1992. The full sample includes 118 firmyear observations. Appendix A lists all the companies used in the sample.

The first identification of the firms was determined by screening *The Wall Street Journal Index* under the heading "Antitrust." This procedure yielded 219 articles to be read. All these *Wall Street Journals* articles are read from microfilms to determine the periods of litigations. Twenty-three firms are identified from this procedure.

The firms have to be listed in the COMPUSTAT Industrial or Research tapes. Of the 23 firms, 8 firms cannot be located in those tapes. Two firms were dropped from the sample because of missing values. The final sample consists of 13 firms. This procedure is presented in Table 1.

All the firms' financial data were obtained from the COMPUSTAT Industrial or Research tapes. For each company, the financial data were collected for all years during litigation period and two years before the litigation period and two years after the litigation period.

Table 1. Sample Selection Procedure

Total Firms Identified from Original Articles	23
Data not available in COMPUSTAT tapes	(8)
	---- -
Total firms available in COMPUSTAT tapes	15
Firms were dropped because of missing values	(2)
	---- -
Total firms for final sample	13

5. RESULTS

This section presents the results of the analyses. This section consists of three subsections: descriptive statistics, testing the accruals model and testing the hypothesis.

Descriptive Statistics

Table 2 and 3 present the descriptive statistics and correlation matrix for the sample. Firms in the sample have negative mean total accruals. The mean of sales is $2879 million. The average increase of sales per year is $ 91.10 million. Firms in the sample have an average fixed assets of $ 1879.0 million and average total assets of $ 2695.7 million. This suggests that firms in the sample are large firms.

Table 3 present the correlation matrix for the variables used in the regsesions. The correlation of FIXASS/TA (fixed assets deflated by total assets) and TOTACC/TA (total accrual deflated by total assets) is -0.20479. This correlation is negative and consistent with the accrual model that the higher the fixed assets (the higher the depreciation expenses), the lower the total accruals. The correlation of DSALES/TA (change of sales deflated by total assets) and TOTACC/TA (total accrual deflated by total assets) is 0.39428. This correlation is positive and also consistent with the accrual model that increases sales will increase the total accruals.

Table 2. Descriptive Statistics (Values are in Million Dollar).

Variable	Mean	Std. Dev.	Minimum	Maximum
TOTACC	-106.70	207.31	-1103.	384.2
SALES	2879.0	3374.6	12.37	10730
DSALES	91.101	625.08	-5279.	1182.
FIXASS	1879.0	2253.4	2.186	7405.
TA	2695.7	2912.2	6.752	9682.

Table 3 correlation matrix

	TOTACC/TA	FIXASS/TA	DSALES/TA
TOTACC/TA	1.0000		
FIXASS/TA	-.20479	1.0000	
DSALES/TA	.39428	.14656	1.0000

The correlation between the independent variables is 0.14656. This small correlation suggests that multicollinearity is not a problem.

Testing The Accrual Model

Three specifications are considered. These are Ordinary Least Square, Least Square Dummy Variables (firm, time and firm plus time effects) and Random Effect Model. Table 4 lists the tests to determine which specification should be used.

In comparing OLS with LSDV, LSDV with firm dummy variable is preferred since the test rejects the null that all coefficients of dummy variable are equal to zero at the 0.1% level. The Lagrange Multiplier test is significant at the 5% level. This suggests that REM is preferred than OLS. The Hausman test is insignificant. This suggests than LSDV is inefficient and REM is consistent. Therefore, Random Effect Model is used in this paper.

Table 5 reports the validity of the accruals model given in equation (4) using Random Effect Model. The R^2 of the model is 22.31 percent.

Table 4. Testing The Specification for The Accrual Model

	F-test	num.	denom.	F-table	Prob value
OLS vs LSDV firm	2.766	12	103	1.75	.00268
OLS vs LSDV time	0.903	12	103	1.75	.54703
OLS vs REM:					
LM Test = 4.35622 $1_{1,5\%}$ = 3.84 p-value = .036874					
Fixed vs. Random Effects:					
Hausman test = 1.61980 $2_{2,5\%}$ = 5.99 p-value = .444902					

Table 5. Estimation Results to Test the Change in Net Sales, Fixed Assets on Total Accruals.

Variable	Expected Sign	Coefficient	Standard Error	t-value	p-value
1/TA		-.01650	.02561	-.644	.51932
DSALES/TA	+	.17270 -	.03518	4.909	.00000
FIXASS/TA	-	.06563	.03438	-1.909	.05624
R-squared = .223088					

Both the variables, DSALES/TA and FIXASS/TA are related to total accruals. The DSALES/TA has a positive expected sign and significant at the 0.1%. The FIXASS/TA has negative expected sign, but only significant at the 10% level. The accruals model seems to be appropriate for the sample.

Testing The Hypothesis

Three specifications are again considered for the model to test the hypothesis. The model.

is slightly different with that of accrual model discussed above. The model used to test the hypothesis has one additional dummy variable. Since the model is rather different with that of accrual model, the three specifications are again reconsidered to determine which regression model is better, whether Ordinary Least Square, Least Square Dummy Variables (firm, time and firm plus time effects) or Random Effect Model. Table 6 lists the hypothesis to determine which specification should be used.

Table 6. Testing The Specification for The Hypothesis Model

	F-test	num.	denom	F-table	Prob value
OLS vs LSDV firm	2.625	12	102	1.75	.00429
OLS vs LSDV time	.777	12	102	1.75	.67251
OLS vs REM					
LM Test = 3.75654 $3_{1,10\%}$ = 2.71 p-value =.052601					
Fixed vs. Random Effects:					
Hausman test = 3.60300 $_{43,5\%}$ 7.82 p-value = .307647					

LSDV with firm dummy variables is preferred than OLS since the null hypothesis states that ail coefficient of time dummy variable are equal is to zero is rejected at the less man 0.5% level. The

Lagrange Multiplier test is significant at the 10% level. This suggests mat REM is preferred than OLS. The Hausman test is insignificant. This also suggests than LSDV is inefficient and REM is consistent. Therefore, Random Effect Model will be used for the regression.

Table 7 shows the regression results using equation (5). A dummy variable, INVSTG, is added in the r egression. The model is still consistent with the accrual model in the sense that DSALES/TA and FTXASS are still significant and have expected signs. The INVSTG variable is coded one for years of litigation and zero otherwise. This ' variable captures the effect of discretionary accruals during the years of litigation. This variable is significant, but has unexpected sign. This unexpected sign for INVSTG indicates that the victim firms do not decrease earnings through discretionary accruals during period of litigations. The hypothesis that managers of victim firms use discretionary accruals to reduce reported earnings during litigation periods as compared to nonlitigation periods is not supported.

Table 7. Regression Results to Test the Hypothesis.

Variable	Expected Sign	Coefficient	Standard Error	t-value	p-value
Constant		-.0221!	.02503	-.883	.37710
DSALES T	+	.17450	.03507	4.976	.00000
FIXASS T	-	-.06624	.03250	-2.038	.04156
INVSTG	-	.01186	.01358	.873	.38243
R-squared = .232929					

6. CONCLUSION

This study examines the effects of antitrust litigation on discretionary accruals for victim firms which were injured from monopolies. Managers of the victim firms have incentives to manipulate earnings to prove that their businesses are affected unfavorably because of monopoly.

Jones's (1991) accrual mode! is used to calculate the discretionary accruals. The results show that the accrual model is appropriate and can be used in the study. However, the results also show that the study does not support the hypothesis that managers of victim firms use discretionary accruals to reduce reported earnings during litigation periods as compared to nonlitigation periods.

Appendix A. List of the Companies in the Study

Firm Code	Firm Name	SIC Code	Litigation Period		Reward Received (in Million $)
			Start	End	
369385	GENERAL COMMUNICATION	4813	1988	1988	27.5
552673	MCI COMMUNICATIONS	4813	1980	1985	37.8
811046	SCRIPPS HOWARD BROADCASTING	4833	1987	1990	12.0
893850	TRANSOK INC	4922	1986	1990	261.0
254919	DIVERSIFIED COMMUNICATIONS	1731	1984	1984	105.0
024763	AMERICAN BUSINESS PRODS	2761	1982	1989	1.0
303698	FAIRCHILD CORP	3452	1981	1984	-
960402	WESTINGHOUSE ELECTRIC CORP	3510	1981	1984	25.0
973411	WINDMERE CORP	3634	1984	1990	375.0
369550	GENERAL DYNAMICS CORP	3730	1982	1990	125.0
538021	LITTON INDUSTRIES INC	3812	1982	1990	276.6
190441	COASTAL CORP	4922	1986	1986	724.0
197648	COLUMBIA GAS SYSTEM	4923	1984	1990	9.6

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