The influence of tax reform in shaping the corporates' capital structure-evidence from Indonesia

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Abstract

This research investigated how tax reform influenced the capital structure of the listed companies in the Indonesian Capital Market from 2004 to 2013. The panel data regression analysis showed the increase of the exploitation of debt followed the cut of the corporates' income tax rate that disagree with the corporates' tax shield purpose. This paper demonstrated the crucial role of the persistence measure of cash flow from operating activities as the critical prerequisite for the adjustment of the financing and investing activities impacted by the amendment of the law. The analysis also showed the positive relationship between non-current liabilities and capital expenditures which indicated that the use of external fund was the function of business expansion. The result supported the real economy perspective of the capital structure theory that the role of taxation on the use of borrowing capital occurred through the adjustment of the economic distortion.

Keywords: Tax, capital structure, leverage, liquidity, capital expenditures

1. Introduction

This paper investigates the mediating role of the persistence of the cash flow from operating activities on the influence of tax regulation on the corporates' financing and investing activities. The motivation of this investigation comes from the cut of the corporate income tax rate and the tax incentive for the distinctive public-owned companies mandated by the Indonesian corporate income tax act No. 36/2008. This study expect the

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influence of the tax regulation on the operating cash flow will stand as the main consequence. Meanwhile, the effect of the law on the investing and financing activities was the continuation of the primary outcome.

Investigation on this topic is essential because of disagreements left in the extant researches concerned with the role of tax in influencing the use of debt in the capital structure. Essentially, this paper considered those controversies were the representation of the dispute between the financial economy and real economy perspective. The first view was the derivation of capital structure theories which regarded that the tax regulation had a direct effect on the use of borrowing capital (Feld et al., 2013; Modigliani & Miller, 1958; Wu & Yue, 2009; Zou et al., 2019). According to this view, the use of debt should be in line with the tax burdened the firms. Hence the corporate income tax rate cut should decrease the use of the borrowing capital and vice versa.

This perspective reflected an implicit assumption of the ceteris paribus in the fundamental microeconomic variables of the firms. As the wealth maximization through the productive activities had been at the optimum level, then the financial-economic channel provided a strategic opportunity to elevate the additional capital accumulation. This view stood upon an assumption that the exploitation of the borrowing capital came from the benefit of tax shield provided by interest expense.

Meanwhile, the second perspective saw the primary effect of the regulation was the adjustment of the level of the economic distortion (Erosa & González, 2019; Yulianto & Chariri, 2019). This lane of analysis emerged from the prescription of the tax incidence theory that the primary effect of the regulation was the adjustment of the restriction in the resource allocation into productive activity. Meanwhile, the impact on the capital structure might emerge as the secondary effect.

This paper considered the primary effect of the amendment of the tax regulation was the alteration of the capital expenditure as the manifestation of the change in the economic distortion. Nevertheless, the investigation should account for the crucial prerequisite allowed the process to take place. This paper regarded it was not an automatic event which entailed the role of the essential variables intervened the process. The business sectors needed supporting resources both from internal and external. Accordingly, the analysis also should take into consideration how the amendment of the law allowed the emerges of the fundamental precondition of the adjustment of the economic distortion to take place.

Solving this problem should take into account the similarity of the characteristic between the financial economy and real economy perspectives. This paper regarded that both views had an intersection in the role of operating cash flow as the essential variable. This internal economic resource was the crucial element of debt capacity as well as elevating the business expansion through capital expenditure. Firms with excellent availability of this resource tended to get greater access toward external capital aimed for both improving the productive activity or satisfying the corporates' tax shield purpose.

On the other hand, a tax was a component of the corporates' operating activities. The adjustment in the operating cash flow would be the crucial impact that resulted from the tax regulation. Accordingly, incorporating the role of operating cash flow in the analysis of the influence of tax on the financing and investing activities can fill the research gap, especially controversies of the use of debt in the capital structure theories. This paper saw both the financing and investing activities were the functions of operating cash flow. The level of the improvement of the business activities resulted from the tax regulation depended on the adjustment of the operating cash flow. However, previous researches documented disagreements of this topic. Keefe & Yaghoubi (2016) found a positive influence of cash flow risk on the use of debt. While Harris & Roark (2019) found the relationship was significant only for firms with a higher cash flow risk.

This paper saw a limitation in previous research studies concerned the proxy employed to measure the cash flow component. Harris & Roark (2019) used the deviation standard of the industry level as the measure of operating cash flow risk, whereas the trend of the variable at the individual firm level could diverse with the trend in the industry. The role of the dominant firm in the industry could result in these differences.

Furthermore, this paper considered that most of the previous research tended to give more emphasis on the first perspective. On the other hand, the validity of each perspective rested on different underlying contexts which serves as its basic assumptions. The financial-economy view was suitable for the business environment with advanced financial sectors, while the second tended to be fit with an economic system dominated by the real sectors. Different context would result in different responses toward the passage of the tax regulation. Investigation of this issue should regard the context of the economic environment where the law prevailed.

In addressing those issues, this paper examined both the financial economy and real economy perspectives in one model according to the Indonesian Tax Reform 2008 context. The regulation implied a cut in the corporate income tax rate. Hence, the significant decrease in the corporates' non-current liabilities after the passage of the law will confirm the validity of the first perspective. Meanwhile, the increase in capital expenditures followed the regulation represented the efficacy of the second view. Also, this paper test the relationship between capital expenditure and the use of borrowing capital. This investigation is urgent to support the basic notion of the real economy perspective that the use of debt was the function of business expansion, not merely intended for the tax reporting interest.

In examining the crucial role of cash flow from operating activities, this paper introduced carefully a new measure of the persistence of this resource, derived from the slope of an autoregressive model of the historical operating cash flow of an individual firm. Testing this new measure for Indonesian context is essential. Indonesian economic environment was different from most of the advanced financial and capital market countries before 2008. Participation of the people in the public companies' ownership was little. The tax incentive provided for the firms with 40% of its stock spread to over 300 individual people, represents the low of public interest. The wealth of the economy mostly came from real economic activities. Accordingly, the motivation behind the use of debt to reduce the tax burden will be less significant than the motive of productive capacity improvement. The mediating role of operating cash flow on the influence of the tax regulation on both the financing and investing activities will be significant according to this context.

Our analysis contributed to both kinds of literature of tax incidence as well as capital structure theory. The influence of the tax regulation on the operating cash flow provides a piece of evidence that adjustment on this element is the manifestation of the crucial sources of the alteration of economic distortion. Also, this study proved that the decision of capital structure was the function of both the corporates' operating cash flow and capital expenditures. Therefore, capital structure effect due to the tax regulation was the secondary according to the Indonesian context.

2. Background

Indonesian taxation system has undergone a significant improvement due to the passage of the corporate income tax act no.36/2008. According to the regulation, the progressive corporate income tax rate of 30% became a single rate of 28% in 2009 and 25% in 2010. This regulation also provided a lower tax rate of 5% for companies that meet certain conditions. The incentive was available for Indonesian public company whose minimum proprietary of 40% is public ownership. Besides, the stock of the company must be with public investors spread over 300 stockholders with a maximum of 5% per shareholder with a minimum duration of 6 months.

The provision constituted an anticipation policy against the unfavorable situation. The underlying assumption of the regulation mostly came from a consideration of conservation of the fundamental of the Indonesian business health and persistence from the crises jeopardy. The policy was an instrument utilized by the government to cope with the crucial issues overwhelming the business sector.

The passage of the corporate income tax act no. 36/2008 coincided with the oil price boom and world stagflation jeopardize. Global economic crises and the US subprime mortgage scandal in 2007 have hampered the persistence of Indonesian business community. Manufacturing sectors experienced hard pressure due to the upsurge of oil price to USD 60 in 2005. The capital market index decreased from 2.723 in January down to 2.164 in September 2008 and plunged to 1.233 in December 2008. Inflation increased from 7,38% in January up to 12.14% in September 2008 and decreased to 11.9% in December 2008. Rupiah exchange rate towards the US dollar dropped from Rp.9.406/dollar in January 2008 to Rp.11.559/dollar in December 2008. Economic growth in 2008 showed a trend of decline. Indonesian economic grew by 6.32% in first-quarter up to 6.39% in the second quarter and down to 6.11% in the third quarter. The situation indicated the lowering growth of business and economic.

On the other hand, the business community perceived the tax burden as the barrier to access the opportunity to cope with the crises. They perceived that tax has been reducing the corporates' ability to adjust their business activity due to the restriction of the liquidity resources. Hence, the lower tax expense was sound to protect the business community from the negative situation. Erosa & González (2019) asserted that elevating the investment at the corporate level was achievable due to the elimination of the tax.

According to the view of the tax incidence theory, the cut on the tax rate would reduce the distortion. Understanding this assumption is important because the objective of the corporate income tax no. 36/2008 was to mitigate the adverse impact of economic crises on business persistence. Motives behind the regulation were the initiative to protect government revenue. The tax collected from the business sectors has been dominating the posture of the Indonesian state budget for decades. Distraction against the persistence of the national business community could threaten state budget stability.

This policy relaxed the operational activities of the business sectors from a higher tax burden. The cut on the corporate income tax rate implied the lower cash outflow for paying tax which potential in enlarging the liquidity saving of the corporates. Therefore, analysis of the impact of the regulation enactment on the liquidity resource is urgent to uncover the critical point of the policy.

This paper consider that the role of the income tax rate cut on the operating cash flow is the critical point of the regulation success. The increase in this resource is crucial in reshaping the financing and investing activities at the corporation level. Accordingly, an improvement in the two activities followed the enactment of the regulation could exhibit the effectiveness of the law. Besides, incorporating the triple of operating, investing, and financing activities in the analysis open the gateway for the identification of the crucial point of success of the law.

3. Literature review and hypotheses development

Indonesian Tax Reform 2008 and Operating Cash Flow Persistence

The tax burden creates economic distortion that forced taxpayers to allocate their resources into unproductive activities (Nicodeme, 2009). The wealth transfer from business entities to the state limits individuals and business entities to use its liquidity resources because it was a cash burden. Accordingly, the alteration of the corporate income tax rate in 2009 and 2010 had a potential effect in reducing the operating cash out-flow.

H1: ITR_2008 influenced the the operating cash flow persistence positively.

Indonesian Tax Reform 2008 and Debt

Tax imposition may encourage the firm to intensify the use of borrowing capital due to the potential tax shield provided by interest expense. Tax imposition also resulted in the operating cash out-flow. On the other hand, the capability of the firms to exploit external capital depended on the financial liquidity position. Therefore, the corporate income tax rate change in 2009 and 2010 was potential in enhancing the debt capacity of the firms.

H2: Indonesian tax reform of 2008 increased the borrowing capital of the firms.

Indonesian Tax Reform 2008 and Capital Expenditures

The backward effect on production facilities impacted by tax imposition turns up due to the consideration of liquidity problems. Firms with lower operating cash flow tended to bear the bigger liquidity problem. On the other hand, additional production facilities and long term assets entail a considerable amount of financial resources. Given the alteration of the corporate income tax rate in 2009 and 2010 lead to a decrease in the tax burden, then this study predicts that the regulation increased the capital expenditure of the firms.

H3: ITR_2008 influence capital expenditures positively.

Debt and Capital Expenditures

A conservative debt policy aimed to maintain financial flexibility could improve investment capability (Marchica & Mura, 2010). However, high dependence on liability would increase the excess investment, which leads to economic instability (Suto, 2003). Therefore, the use of debt in the capital structure should regard the possibility of a positive prospect. The external fund should flow into the productive activity that generates positive operating cash flow both in a short and long-run perspective. Debt can play a role as a dynamic contract (Hackbarth & Mauer, 2012).

H4: Debt had a positive effect on the capital expenditures of the firms.

Operating Cash Flow Persistence and Debt

Modigliani & Miller (1963) and Myers & Majluf (1984) stated that the ability to exploit borrowing capital, back up the future growth opportunity. On the other hand, debt created a cash out-flow in the future. Accordingly, liquidity resources constitute the underlying assumption of the ability of the firms to raise debt. Financial liquidity reflected the going concern prospect of the firms (Ayers et al., 2018). It implied the default risk level of the debtors.

H5: Operating cash flow persistence influenced debt positively.

Cash Flow from Operating Activity Persistence and Capital Expenditures

Capital expenditures mean the sacrifice of the corporate liquidity resources into a long term fixed asset. Accordingly, prudence and conservative consideration of the operation fluency due to the cash availability was essential. Besides, capital expenditure for capacity improvement usually entails a considerable amount of fund (Liao et al., 2016).

Daniels et al. (2008) showed that a decrease in cash flow resulted in reduced investment. In an economic environment with a malfunction of the financial system, the capability to invest in the private and foreign-owned firms was significantly sensitive to the cash availability (Guariglia et al., 2011). An et al., (2016) found the significant influence of cash holding on investment.

H6: Operating cash flow persistence influenced capital expenditures positively.

4. Research Method

Research design

This investigation was a causal event study designed to test the effect of a tax regulation enactment in shaping the financing and investing activities at a micro-level. The population is all manufacturing companies listed on the Indonesia Stock Exchange from 2003 to 2013. The observed periods reflect the five years both before and after the Indonesian Tax Reform in 2008.

Table 1. Sample Selection

Listed companies up to 2013	533	Firms
Not available completely from 1999	-319	
Missing data	-31	
Sample	183	Firms

Hypothesis test used the following panel data regression equation:

$$CFO\_Persist_{i,t} = \alpha_1 + \beta_1 ITR\_2008_{i,t} + \varepsilon_1 \quad (1)$$

$$NCL_{i,t+1} = \alpha_1 + \beta_2 ITR\_2008_{i,t} + \beta_3 CFO\_Persist_{i,t} + \varepsilon_2 \quad (2)$$

$$CAPEX_{i,t+1} = \alpha_1 + \beta_2 ITR\_2008_{i,t} + \beta_3 CFO\_Persist_{i,t} + NCL_{i,t+1} \varepsilon_3 \quad (3)$$

This study introduced the persistence of the cash flow from operating activities (CFO_Persist) as a new concept of liquidity resources proxy to express the ability of the firms to maintain or to increase the level of cash flow from operating activities. This study employed the following regresion model to yield the measurement.

$$\sum_{i=-5}^{n} CFO_{i;t} = \alpha + \beta_1 \sum_{i=-5}^{n} CFO_{i,t-1} + \varepsilon_{i,t} \quad (4)$$

Coefficent β_1 representd the persistence measure. Positive β_1 indicates the ability of the firm to maintain or increase the cash flow from operating activity and vice versa.

Table 2. Variables

Variables	Definition
ITR_2008	Score 0 for the before 2008 and 1 for the after ITR_2008.
CFO_Persist	The persistence measure of cash flow from operating activities.
NCL	The non-current liabilities represents the external fund in the capital structure.
CAPEX	Capital expenditures represent the investment activity on fixed assets.

5. Analysis

Table 4 shows that all of the correlation coefficient of the variables below 0,7. The empirical model are free of multi-collinearity symptoms.

Table 3. Correlation coefficients

	ITR_2008	CFO_Persist	NCL	CAPEX
ITR	1			
CFO_PERSIST	0,110876	1		
NCL	0,111054	0,064959	1	
CAPEX	0,188606	0,16299	0,698312	1

Table 5. Descriptive Analysis

	CFO_Persist	NCL	CAPEX
Median	0,1040	117.228.613.788	21.316.416.637
Mean	**0,1257**	**818.789.292.914**	**207.989.899.382**
StDev	0,7485	2.275.443.108.525	735.660.875.137
Max	8,3673	24.813.926.000.000	10.684.690.000.000
Min	- 10,7239	-	-
Range	19,0911	24.813.926.000.000	10.684.690.000.000

Figure 1 section 1 depicts the movement of the average CFO_Persist in a yearly base during the observed year. The variable decreased to the lowest level in 2005 and rebounded in 2006 up to 2007. However, the graphic slowed down and lowered during the economic crises in 2008. Afterwards, the persistence of cash flow from operating activities increased significantly from 2009 to 2010. The trend implied that the first step of the corporate income tax rate cut was effective in elevating the internal liquidity source of the firms. Next, the second phase of the corporate income tax rate cut in 2010 strengthened the ability of the firms to boost their internal fund sources.

Figure 1. Descriptive Analysis

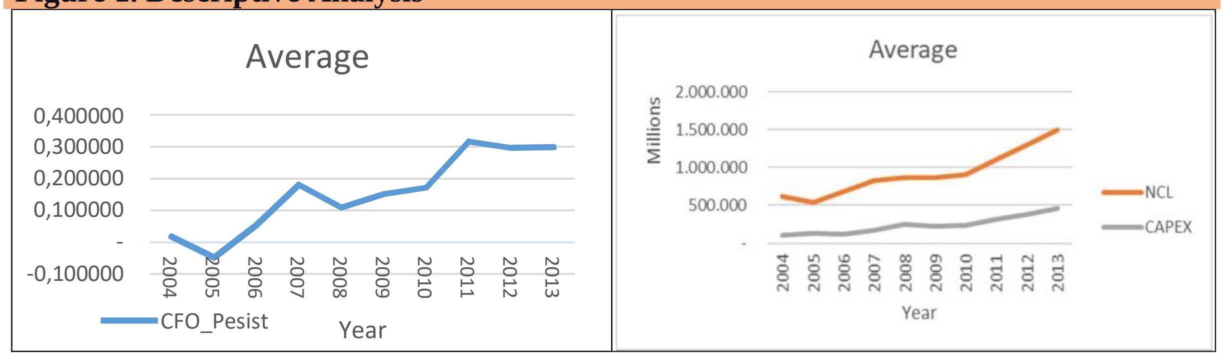

Figure 1 section 2 depicts the movement of both the non-current liabilities and capital expenditure from 2005 to 2013. Both the persistence of the cash flow from operating activities and the use of outside capital was fallen in 2005. So did with the sharp increase in 2007 that occurs in both of these variables. The tendency implicitly indicated that the long term borrowing capital tended to move following the of the cash flow from operating activities but in a more conservative pattern.

Meanwhile, capital expenditure tended to move more moderately during the observed period. Despite providing greater capacity, long term investment in fixed asset and another production facility also potentially induce liquidity risk. However, more movement of rapid capital expenditure occurred in 2010 and afterwards. The tendency implied that the second phase of the corporate income tax rate cut could evoke the confidence of the firms to expand their business capacity.

Panel data regression analysis

The panel data regression analysis provided evidence that Indonesian Tax Reform 2008 could elevate the capability of the firm in exploiting their internal liquidity resources, and encouraging the financing and investing activities at the micro-level. Table 1 showed the positive influence of ITR_2008 on CFO_Persist with b=0.167297 and significant at <0.0001. Table 2 indicated the positive effect of ITR_2008 on NCL with b=3.39662e+011 and *p*-value 0.0014. Meanwhile, table 3 showed the positive influence of ITR-2008 on CAPEX with b=4.38610e+010 and significant at 0.0481. These result indicated the direct effect of the regulation on the triplet micro-economic measures that are the cash flow from operating activities persistence, non-current liabilities, and capital expenditures.

Table 6: Panel Regression Analysis[a])

Parameters	**Model 1**	**Model 2**	**Model 3**
	Dependent Variables		
	CFO_Persist	**NCL**	**CAPEX**
Const	0.0644233	6,85E+16	−2.10354e+010
p-value	0.0148** [b])	<0.0001***	0,238
ITR_2008	0.180845	3,82E+16	4.84955e+010
p-value	<0.0001***	0.0011***	0.0496**
CFO_PERSIST		2,30E+16***	6.10378e+010
p-value		0.0025***	0.0001***
NCL			0.245240
p-value			<0.0001***
F test	2.343.586	1.128.574	7.846.464
Adjusted R-squared	0.013264	0.012176	0.584820
P-value(F)	1.41e-06	0.000014	0.000000
Durbin-Watson	1.934.509	1.782.148	2.083.531
White's test for heteroskedasticity			
Chi-square	1.7683	9.421	448.244
P-value	0.183593	0.0513961	8.79347e-092

Note: a). Panel data regression using common effect Model, n=167 crossectional unit; 10 time series unit.
b). * (signifikan at 0,1); ** (signifikan at 0,05); ***(signifikan at 0,001).

Test for Indirect Effect

This study also performed the indirect effect analysis of the Indonesian Tax Reform 2008 to the persistence of cash flow from operating activities, non-current liabilities, and capital expenditure. These analyses were crucial to identify the critical factor of the ability of the regulation in manipulating those micro-economic measures.

Table 7. Sobel Test		
Model	**Test Statistic**	***p*-value**
ITR_2008→CFO_Persist→ NCL	2,83568741	0,00457272
ITR_2008→CFO_Persist→CAPEX	3.07980126	0.00207139
ITR_2008→NCL→CAPEX	3.17894343	0.00147813
CFO_Persist→NCL→CAPEX	3.50560906	0.00045556

Table 7 indicated that all of the indirect are valid with *p*-value < 0,01. The result implied that the success of Indonesian Tax Reform 2008 in manipulating the financing and investing activities was depend on the alteration of the persistence of cash flow from the operating activities. The indirect effect test support the second perspective of the role of tax regulation on the use of borrowing capital.

6. Discussion

If firms perceived ITR_2008 as the tax rate reduction, then the motivation to use interest expense to reduce tax burden will decrease also. The real economy motives seem to be the prevailing assumption then the financial economy. Accordingly, change in the tax regulation will result in the alteration of economic resource allocation instead of the reporting process. The positive influence also implies that the debtors consider the future cash flow risk impacted by the debt. Besides, debt will result in the distribution of profits to the creditors than the shareholders (Stiglitz, 1973).

This research also found a direct and indirect influence of the tax reform on the non-current liabilities through the role of the persistence of the cash flow from operating activities. The result opposed the basic assumption of the financial economy perspective of the capital structure. According to this view, the cut of the corporate income tax rate should decrease the motivation of the firms to exploit the external capital. The positive influence of the tax regulation on the non-current liabilities implied the increase of the debt followed the regulation enactment.

This paper confirmed the crucial role as cash flow from operating activities in explaining the role of tax in shaping the corporates' financing and investing activities. The vital position of this cash flow component comes from the characteristic of tax as the cash expense. The tax has a direct relationship with cash flow that the acquittance of liabilities is completed solely through the cash disbursement. That's why firms often engage in aggressive tax reporting, both legally or illegally, due to the interest of cash flow. Liquidity problem also often encourages the firms to commit both the tax avoidance or tax evasion.

On the other hand, cash flow from operating activity constitutes the internal source of financial liquidity. Therefore, the tax imposition compels the firm to sacrifice their autonomous capital. Next, the wealth transfers to the state distort the economy because of the lower capability of the firms to allocate its resources into productive activity.

Faulkender & Wang (2006) reported that constrained firms tend to hold less cash than expected due to the lower capability in generating positive operating cash flow. Richardson et al. (2015) showed how financially distressed firms tend to engage in aggressive tax practice. Accordingly, the reduction on corporate income tax rate was able to give a direct positive influence on the persistence of the operating cash flow. The increase in this liquidity resources improved the capability of the firm in raising the cash reserve and financial liquidity. The elevated liquidity resources of the firms enabled them to enhance their operating capacity.

On the other hand, the tax reform showed an indirect positive influence on the use of external capital through the role of liquidity resources. The increase in operating cash flow enabled firms to access the external capital source. Consideration of liquidity of the debtors is essential for creditors to invest their funds in a specific obligation or another credit line. Platikanova (2017) showed that the demand for cash increased as the debt maturity decreased.

This research finds that the persistence of cash flow from the operating activity is the critical factor influencing the decision, both in raising long term debt or undertaking capital expenditure. The internal liquidity resource reflects the autonomous capital of the firms. The use of the cash flow does not incur any cost of capital. Accordingly, this resource gives greater flexibility than outside funds. Furthermore, it does not result in any future cash out-flow contract.

According to the pecking order theory Myers & Majluf (1984), the rise of the liquidity resource should alleviate the use of external capital. As shown in figure 1, the persistence of cash flow from operating activities increase sharply after the tax reform. Hence, the liquid financial resources were available on a significant considerable amount.

The opposite way of the influence of the liquidity resources on the use of external capital indicates the role of the consideration of cash flow risk in the debt issuance.

The positive influence of liquidity resources on the non-current liabilities indicates the role of the cost of capital in the exploitation of external capital. An increase in the cash flow from operating activities implies the alleviation of the liquidity risk. The broader access to the debt capital sources was available when firms able to mitigate the liquidity risk. The cost of capital implies the opposite level of confidence of the creditor on the potential default risk.

This research provides evidence on the effect of tax on real investment both directly and indirectly through the role of the increase in liquidity resources and borrowing capital. Modigliani & Miller (1963) and Stiglitz (1973) argued that tax has no real effect on real investment. However, our analysis shows that the reduction in the corporate income tax rate encouraged the capital expenditure for fixed assets directly or indirectly through the role of liquidity resources and non-current liabilities.

The direct positive influence of ITR_2008 on capital expenditures indicates the alleviated economic distortion at the firm level. The reduction of the corporate income tax rate allows resource allocation more effectively. The indirect effect of ITR_2008 on capital expenditures through the role of cash flow from operating activities support the conjectures.

7. Conclusion

This study provides a piece of evidence that liquidity resources play the central role both in financing and investing activities. The conservative component of cash flow from operation shows as the most influencing measure (better than cash holdings and cash flow from operating activities) in explaining the indebtedness and decision of capital expenditures. This result inlines with the pecking order theory that internal capital resources are preferable than the outside.

This study contributes to the finance literature, especially in the capital structure discourse. This paper prove that consideration of the capital structure is not solely a financial-economy matter. The indirect influence of the tax regulation through the liquidity resources on the debt capital clarifies the role of the real-economy perspective in shaping the corporates decision on financing activities. Our analysis shows that the operational fluency became the prevailed interests than the tax shield affair. Besides, the result also implies that default credit risk played a central role in the firm capability in exploiting the outside capital sources.

However, this paper admited that this study also contains several limitations. The persistence of cash flow from operating activity is sensitive toward time windows frame. The measure was reluctant of the different result from the diverse in the length of the time-series data.

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