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OPTIMIZING THE CAPITAL STRUCTURE USING COST OF CAPITAL APPROACH A CASE STUDY A PT TELEKOMUNIKASI INDONESIA, TBK

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Abstract— PT Telekomunikasi Indonesia, Tbk (Telkom) keeps strengthening its infrastructure to support the business. Investment in infrastructure urgently needed as technologies always develop very fast following the services demanded. The fund for investment can be generated from internal cash flow, or generated from external sources from debt or equity. But it is important to consider the proper composition of funding to get the lowest cost of capital possible. The objective of this study is to examine Telkom's optimal debt ratio, using cost of capital approach based on the condition as of December 31, 2012. Rating consideration, share repurchase program and high dividend are root causes that must be taken into consideration to maintain the company's growth in the long run. A simulation applied to estimates the weighted cost of capital at different debt ratios. Some constraints, including debt rating and earnings before interest and tax (EBIT) volatility against debt ratio, are considered in order to reduce the risk of default. With current debt ratio of 14%, Telkom is still under levered. The optimum debt ratio is 17% after considering the constraints. Historical investments showed good performances with return on capital no less than 25%, which was higher than the current cost of capital of 9.31%. Considering the issuance cost, interest paid and macroeconomic conditions, it is recommended for the company to take new debt of Rp.7 trillions.

Keywords: capital, value, default, constraints.

1. Introduction

Broadband technology widens the options for the people around the world to communicate with colleagues, family and business partners. PT Telekomunikasi Indonesia Tbk (Telkom) keeps strengthening its infrastructure to support their services in Information, Media and Edutainment ("IME"). In order to maintain and even to strengthen the growth, the company needs to invest more in productive projects. To fund the capital expenditure, Telkom issued two series of bonds with a total value of Rp 3 trillion (US$327 million) to fund 2010 capital expenditures. They were listed on the IDX, and as of December 31, 2011, PT Pemeringkat Efek Indonesia (Pefindo) rated the bonds issued by idAAA (stable outlook).

Table 1-1 2010 Bond Issued
(PT.Telekomunikasi Indonesia, Tbk, 2010)

Series Name	*Value (Rp. Billions)*	*Effective Date*	*Maturity Date*	*Issue Term (Year)*	*Coupon Structure*
Serie A	1,005	25 Jun 2010	06 Jul 2015	5	9.6%
Serie B	1,995	25 Jun 2010	06 Jul 2020	10	10.2%

Realizing that the debt ratio is still below the peer companies, Telkom planned to increase the debt ratio through corporate actions. Based on the resolution of the Extraordinary General Meeting of

Stockholders on December 21, 2005, it was decided to repurchase up to a maximum of 5% of the corporate shares issued and outstanding for a total repurchase amount up to Rp5.25 trillion.The program continued until the fourth repurchase program that already ended by November 2012. As of December 31, 2012, the corporate has repurchased 1,010,930,460 shares issued and outstanding Series B shares, representing 5.01% of the total Series B shares issued and outstanding, for a total repurchase amount of Rp8.07 trillion. This changed the capital structure and the debt ratio was lower than before as equity falls.

2. Business Issue Exploration

According to Fitch ratings agency, the telecommunications industry in South East Asia will experience pressure on profit margins in 2013 due to the level of competition in this sector. The growth of demand is not in line with the output, as a result margins is slightly decreased. Meanwhile, in Indonesia, Fitch estimates that the four companies that dominate the telecommunications market will experience cash flow problems as the high burden of capital expenditure (Finance Roll, 2012).

A. Conceptual Framework

Conceptual framework is a theoretical structure of assumptions, principles, and rules that holds together the ideas comprising a broad concept (Business Dictionary, 2013). The main objective in this study is to find optimal debt ratio that support the business of Telkom, so that the value of the corporate will be at maximum level. Assumptions and constraints are taken into consideration to reduce company risk over the ratio calculated, so that the company value might not be at maximal but at optimal level. The calculation to find maximal company value is determined by internal and external factor. Financial profiles such as earnings before interest, capital spending, and also corporate actions like stock issuance and stock repurchase programs are classified as internal factors of the company. The development within telecommunication industry, and macroeconomics factors like interest rate, GDP, inflation and currency exchange that influence the business are considered to be external factors

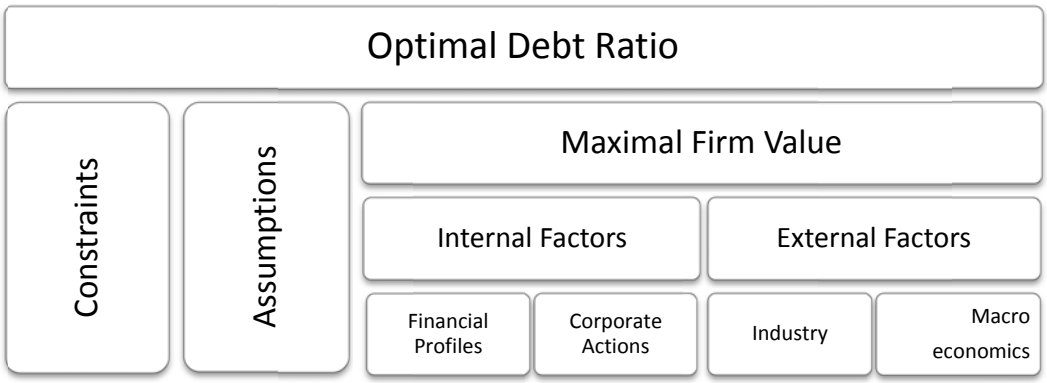

Figure 2-1. Conceptual Framework

The financial statement is the basic foundation for the whole analysis, as the capital structure affects its operating income. At the minimum cost of capital, that comprise of certain level of debt and value of shares outstanding, the maximal level of corporate should be achieved. Outlooks by analysts state the ongoing condition of the industry and the prediction in years to come.

B. Method of Data Collection and Analysis

There are three groups of inputs. The first is related to financial information. All the money values were in million rupiahs, except the market price per share. The EBITDA, depreciation and amortization, capital expense and interest expense on debt were cited as of December 31,2012 from Telkom financial report. By February 28, 2013 Pefindo rated Telkom's bond by idAAA. Cited from tradingeconomics website (Trading Economics, 2013), the 10 years Indonesian government bond yield was 5.19%. This bond yield is as risk-free reference for cost of equity calculation using CAPM method.

The second group is related to market information; this is the market data of the company itself. Number of shares outstanding as December 31, 2012 was 19,149,068,820 or 19,149 stated in million

shares (PT.Telekomunikasi Indonesia, 2012). The share price at closing date of December 28, 2012 was Rp.9,050 (Telkom). Beta of the corporate stock was 0.63 on March 20, 2013 (Reuters) and book value of debt at the end of year 2012 was Rp. 19.75 trillion. The debt was interest bearing debt that consist of both long term and short term debt. The last group is the general market data. Estimated default spread as a function of interest coverage ratio of 10.20 is 0.5%. This spread is then added up to 10 years government bond yield to create interest rate based upon rating of 5.69%. Indonesia's risk premium is 7.51% and country default spread is 1.71% (Damodaran, Country Default Spreads and Risk Premiums, 2013)

C. Analysis of Business Situation

The under pressured growth is caused by internal business problems and external factors including telecommunications industry, inflation, GDP, interest rate, regulations, and other macroeconomics factors. The growing GDP with controlled inflation supported the industry. Other competitor, especially Indosat has taken advantage more for the economics condition by increasing the revenue sharing by 4.3%. This development affects Telkom's revenue sharing in the industry that will press the company revenue growth.

Main internal business problems are triggered by infrastructure expansion and financial performance itself. Higher cost, lower revenue share and high competition cause low profit margin. Low profit margin will limit operating cash flow, that is why the expenses must be at low level while generate more revenues. Even though cash tends to increase, the high investment needed caused operating cash flow is no longer sufficient to support the capital expenditure.

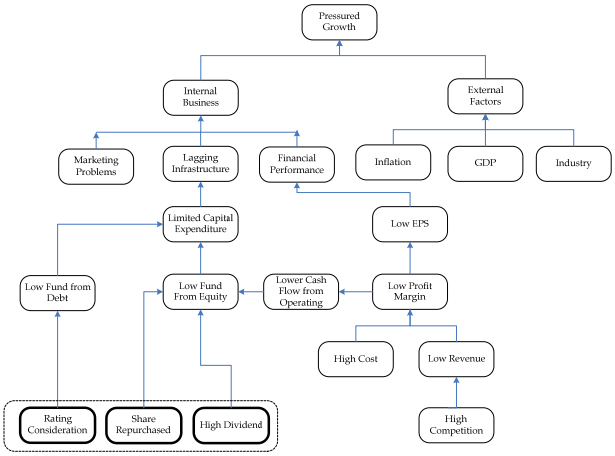

Figure 2-2. Root Cause Diagram

To support the business, investment in infrastructure urgently needed as technology always develop very fast following the services demanded. The fund may be generated internally from operating cash flow, or generated from external sources from debt or equity. Fund generated from debt is more preferable according to the pecking order theory, but there is limitation in raising debt because the risk of default will get higher. Big corporations should consider its debt rating to maintain its performance

3. Business Solution

There two sides of maximizing firm value with cost of capital approach, through debt or equity. Debt adds corporate liability to pay interest and principal, while issuing new stock will increase the equity side and makes corporate liable to pay dividend at the accounting period.

D. Alternative of Business Solution

If the current debt ratio is higher than its optimal ratio, the corporate is over levered; if the ratio is lower, then it is under levered. For over levered company, the next step is checking whether the

company is under bankruptcy thread. An easy way to assess the probability of bankruptcy is by the debt rating. A firm with a below investment grade rating under BBB has a significant probability of default. For unrated company, synthetic rating can be applied as a function of interest coverage ratio.

For companies that do not have marketable investment, selling asset to retire its debt is a proper way to reduce debt. For companies that have marketable investment, swapping equity into debt is possible. The company can issue new stock and use it pays off some of the outstanding debt. Another way for recapitalization is to renegotiate debt agreements. The company tries to convince the creditors to take some stocks in lieu of their debt in the company.

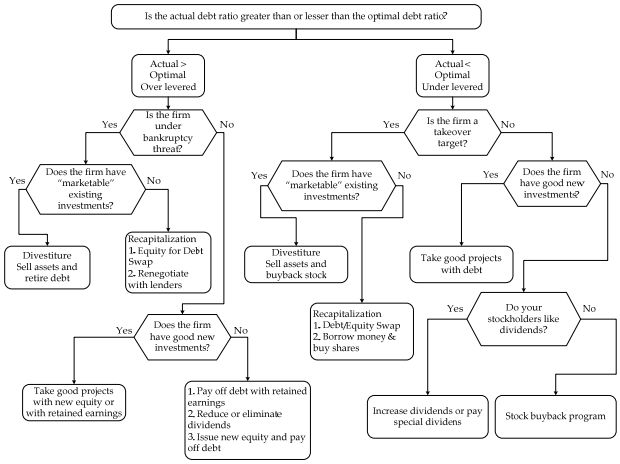

Figure 3-1. Framework for Changing Debt Ratios
(Damodaran, Applied Corporate Finance, 2004)

If the company is not under bankruptcy threat and has good investment project, it should take good projects with new stocks issued or with retained earnings. For the companies that do not have good new investments, retained earnings or proceed from new stock issued can be used to pay off debt, otherwise dividend must be reduced or even eliminated. For under levered company, after determining the debt ratio is under levered, the next decision is to make sure whether the company is a takeover target. Target firms tend to be smaller, have poor project and the stock price performance is worse than similar companies. For companies that have marketable investment, selling asset and use the cash proceed to repurchase the stock is a possible way. For companies that do not have marketable investment, they can swap the debt for equity to add debt or borrow money to repurchase stocks outstanding.

E. Analysis of Business Solution

The cost of capital approach estimates the costs of debt and equity at different debt ratios, and then uses these costs to compute the costs of capital. After finding the cost of debt and cost of equity, then an analyst looks for the mix of debt and equity that yields the lowest cost of capital for the firm. At this cost of capital, the firm value is considered to be maximized (Damodaran, Applied Corporate Finance, 2004).

For the analysis, there are assumptions that should be taken into consideration:

- Earnings before interest, tax, depreciation and amortization (EBITDA) and depreciation & amortization are assumed to be constant with different level of debt ratio.
- Synthetic rating assumes to be applicable which bond ratings are determined solely by the interest coverage ratio. The interest coverage ratio = earnings before interest & taxes / interest expense.
- Growth of the company will be stable at perpetual growth. The growth will be used to calculate the value of the company

The result of simulation from Damodaran's worksheet (Damodaran, NYU Stern School of Business, 2013) is as follows:

Table 3-1. Capital Structure Calculation Summary

Ratios	*Current*	*Optimal*	*Change*
D/(D+E) Ratio	14.05%	25.00%	10.95%
Beta for the Stock	0.63	0.70	0.07
Cost of Equity	9.92%	10.46%	0.54%
AT Interest Rate on Debt	5.55%	5.66%	0.11%
WACC	9.31%	9.27%	-0.03%
Implied Growth Rate	3.14%		
Firm Value (no growth) Rp.tio	201.63	202.38	0.76
Firm Value (Perpetual Growth) Rp.tio	201.63	202.79	1.16
Value/share (No Growth) Rp.	9,050	9,089	39
Value/share (Perpetual Growth) Rp.	9,050	9,111	61

PT. Telkom's bond has been rated by Pefindo by idAAA (stable outlook), and the management should keep that high investment grade rating. The optimal firm value is Rp.202,79 trillion and rated idAA. To manage the AAA rating, the corporate must adjust the optimal value at the value which rated AAA. Referred to the simulation result, the highest value of the company at idAAA rating is Rp.202,6 trillion, and this value is the sufficient value considering the bond rating constraint. The optimal debt ratio considering this constraint is then at 20%. Operating income of the company within 10 years was volatile. The standard deviation of the percentage change during the period was 15.13%. Sensitivity analysis needs to be done to measure the effect of earnings before interest and tax (EBIT) change to optimal debt ratio. Every input will create 100 outputs of debt ratio, and then by looking up the optimal debt ratio at AAA rating, the ratio is noted as the output data. The optimal debt ratio fall as EBIT drop. The corporate must reserve some space not to take so much debt, as it will be unbeneficial when EBIT drop at the lowest historical level. The optimal debt ratio considering EBIT volatility is 17%.

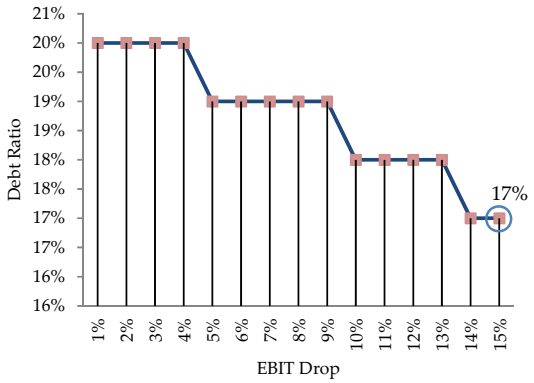

Figure 3-2. EBIT – Debt Ratio Sensitivity

With the optimal ratio of 17%, compared to current debt ratio of 14%, Telkom is under levered. Bellow is the summary after considering the two constraints:

Table 3-2 Optimal Debt Ratio After Constraints Considered

Current	*Before Any Constraint*	*After Bond Rating Constraint*	*After EBIT volatility Constraint*
14%	25%	20%	17.00%

Optimal debt ratio now is at 17%, by then the company's debt ratio needs to be adjusted up to 3% from the current ratio.At 17% debt ratio, the corporate must add additional debt for Rp.7,16 trillion or reduce its equity for Rp.34,9 trillion.

The next question from the framework is whether this corporate is a takeover target. The takeover target tend to be smaller, have poorer project and worse stock price performance than their competitor in the industry. Telkom is a big company with total asset over 100 trillion rupiahs, with revenue growth at more than 8% from last year. The stock price increased form Rp.7.050 on the closing date in 2011 to Rp.9.050 on the closing date in 2012. According to (Reuters) the stock beta was 0.63 and still above the industry with 0.53. This shows that the corporate is not a takeover target.

Back to the framework for changing debt ratio, the next question is whether the company has good new investment or not. To calculate the return on capital for an entire company, it should base upon its current earnings and book value. The computation uses the values for the entire firm. To measure quality of investment in the corporate, the return on invested capital (ROC) formula may be applied.

ROC = EBIT (1-tax rate) / (BV of Debt + BV of Equity)

Then for the year 2012, the ROC is calculated:

ROC = 25,698 (1 – 0.25) / (19,275 + 51,541)

= 27.2%

The investment quality is good because the ROC value is still greater than the current WACC of 9.31%.

4. Conclusion and Implementation Plan

The long term financing can be done through bank loan or corporate bond. The prime lending rates for corporate loans over top ten banks show that the rates are quite stable at the average of 9.97% for six months. The rates are the base rates for banks to give loans to its corporate customers. Prime lending rate does not take into account the risk premium component whose magnitude depends on the bank's assessment of the risk of each borrower. The issuance cost of the company's bank loans within three years is 0.59% on average, based on Telkom's 2010 and 2011 financial statement, also Indosat's 2012 financial statement.

Recently, companies will choose to issue debt securities or bonds as a source of funding rather than bank loans amid slowing bank lending as the impact of the European crisis. When global economic conditions are uncertain, banks slowed lending, so companies are looking for other lines get funds by issuing bonds. Issuing bonds will be cheaper than bank credit borrowing (Harian Neraca, 2012). Bonds issued in 2013 offer coupon at fixed rates of 7.93% on average with spread over long term government bond of 2.5%. Coupon rates offered are lower than bank's prime lending rate for corporate loans. Within the last 5 years, among Telkom's peer companies, only Indosat that issued bonds. The company issued three times of bond of 2008, 2009 and 2012. The average cost of bond issuance including Telkom's 2010 bond was 0.35%

There are some macroeconomics conditions that should be considered to determine the loan choice for investment, inflation, GDP and currency. The sensitivity analysis shows that the duration for bond is 9.24 years, so it recommends that the corporate should issue a 10 years bond. The GDP is not highly related to the corporate value. The low slope of GDP suggests the corporate to issue debt in straight bond, not convertible, because the value is relatively not affected by economic condition. The

significant slope of inflation suggests the corporate to borrow at floating rate as corporate firm is moderately affected by inflation. The higher dollar change the lower the corporate value will be. This quantitative analysis suggests borrowing more in domestic currency.

Table 4-1. Macroeconomic Indicators (Miscellaneous Sources)[1]

Years	*Firm Value (billion IDR)*	*Interest Rate*	*GDP (billion US$)*	*Inflation*	*Currency (Rp/US $)*
2003	139,548	12.0%	234.77	5.1%	8,745
2004	107,373	11.1%	256.84	6.4%	9,338
2005	122,242	13.6%	285.87	17.1%	9,853
2006	200,649	10.0%	364.57	6.6%	9,096
2007	239,566	9.9%	432.22	6.6%	9,342
2008	139,843	12.1%	510.24	11.1%	11,194
2009	201,543	10.1%	539.58	2.8%	9,478
2010	178,879	7.8%	708.03	7.0%	9,031
2011	161,381	6.0%	846.83	3.8%	9,065
2012	197,361	5.2%	909.72	4.3%	9,630

To measure the relationship between firm values with other four indicators, a Microsoft Excel worksheet function SLOPE is used. The results are listed in the table below:

Table 4-2. Macroeconomic Indicators Against Firm Value

Indicators	*Slope Against Firm Value*
Bond Yield	(9.24)
GDP	(0.16)
Inflation	(3.48)
Currency	(2.41)

The average spread of 2013 bond issuance with nominal over Rp.1 trillion was 2.50%. Assuming that JIBOR will be stable at 4.9% to maturity, Telkom may state the coupon at 7.4%, but regarding the attractiveness of the coupon, the company may stated at least similar to fixed rate applied by Indosat, that is government bond yield + spread or 5.2% + 2.5% = 7.7%.

[1] Firm value = book value of debt + market value of equity. Source : Telkom
Interest rate is Indonesian 10 years government bond yield. Source : http://www.tradingeconomics.com/indonesia/government-bond-yield
GDPs are in billion US$. Source : http://www.worldbank.org
Inflation data source : http://www.bps.go.id/aboutus.php?inflasi=1
Historical currency data source: http://www.xe.com/currencycharts/?from=USD&to=IDR&view=10Y

F. Conclusions

As of December 2012, Telkom's capital structure was under levered as debt ratio was 14%, below its optimal at 25%. After considering bond rating constraint and EBIT volatility, the optimal debt ratio is 17%. To raise the debt ratio, Telkom must add debt up to Rp.7 trillion or reduce its equity up to Rp.35 trillion. Referred to Damodaran's framework of changing debt ratio, the company is suggested to add external fund amounting Rp.7 trillions from debt to fund new good investments as its historical ROC is above its current WACC. The source of fund can be from bank loans or bond issuance.

G. Implementation Plan

Bank loans can be an alternative for the company to reduce the risk of fund raising failure through bond issuance. The creditors can be from banks or syndicate of banks. To reduce the risk of failure in raising fund through bond issuance, Telkom should split the debt into bank loans and bonds. The proportion of debt can be Rp.1 trillion in form of bank loans and Rp.6 trillion of bonds. Bond should be issued within 2 years with single registration to Bapepam-LK, referring to Rule No. IX.A.15 stated about Continuous Public Offerings to reduce cost. The bond issued can be split into Rp.3 trillion each within 2 years. Bonds issued have the following features:

- Amounting Rp.6 trillion
- Maturity of 10 years
- Straight, non-convertibles
- Floating coupon rates, between 7.4 to 7.7% assuming that JIBOR will be stable until maturity
- Rupiah denominated

Telkom must keep on monitoring the development of the ratio, as market value of equity will continuously change as stock price is volatile. Increasing value of equity will lower the debt ratio. Increasing value in the equity side can be handled by share repurchase program. Share repurchase program that already ended by November 2012, should be continued when fund raised from debt then still bellow Rp.7 trillion as targeted. Schedule for bond issuance process is going to start by June, 2013 and will end at the end of November 2013 when the bonds will be listed in Indonesian Stock Exchange.

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