

## ASSESSING THE FAIR VALUE OF PT. ADARO ENERGY BY USING VALUATION: DISCOUNTED CASH FLOW MODEL

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### Abstract

Recent years, valuation of company become more demanded rapidly. Globalization and financial market have favored business growth. Investment becoming more interesting, mergers and acquisition becoming phenomenon. Continued business flow in market nowadays is followed by demand to investment from stocks, loan or the other capital instrument. The goal of company valuation is to give owner, potential buyers, stakeholders and other interested buyer the measurement of a company value. PT. Adaro Energy is the biggest coal producer in Indonesia Unfortunately coal price start decreases in 2011. The current weak coal price is mainly due to undisciplined supply growth on the back of excess liquidity and overinvestment made in the recent years. Supply contraction is slowly underway but the market has not yet rebalanced. So author wants to find out the fair value of PT Adaro Energy Tbk, using valuation Discounted Cash Flow method using PT Adaro Energy Tbk, historical financial statement,

Type of this research are data time series to analyze and evaluate time performance over comparison of current to past performance, using ratios, enables analysts to assess the firm's progress of PT. Adaro Energy Tbk, step by step to get the fair value of PT Adaro Energy. In this research the result would be differentiate into three scenarios based on growth using CAGR as the growth assumption, into pessimistic, moderate (most likely) and optimistic. From analysis that already conducted the fair value of PT Adaro Energy Tbk, are . For the Growth by 6.7% (pessimistic scenario), the firm value is **\$ 9,305 million**, where its equity value is **\$ 8,154 million**. For the Growth by 14.6% (moderate scenario), the firm value is **\$ 10,008 million**, where its equity value is **\$ 8,857 million**. For the Growth by 21% (optimistic scenario), the firm value is **\$ 10,681 million**, where its equity value is **\$ 9,530 million**.

Keywords: Social Media, Twitter, Fulfillment of information needs.

### 1. Introduction

Adaro Energy is the biggest coal producer in Indonesia number four in the world. Adaro's history begins with the global oil shocks of the 1970s. They caused the Indonesian Government to revise its energy policy, until then focused on oil and gas, to include coal as a fuel for domestic use. With this increased focus on coal, in 1976 the Mines Department divided East and South Kalimantan into eight coal blocks and invited tenders for these blocks.

Adaro coal is primarily sold to power generation providers, and sell an average of about 25% of our coal to customers domestically in Indonesia and 75% to overseas customers, predominantly in Asia. Over the past four years Adaro have acquired stakes in five more coal properties in Sumatra and Kalimantan that are currently under development for mining and will produce coal of similarly less-polluting quality as Envirocoal.

It is a trademarked name for Adaro Energy coal that is environmentally friendly, with a low sulphur content of 0.1%, ash content between 1-2% and a nitrogen level of 0.9%. Because of the ultra-low levels of these pollutants, Envirocoal can be burned in power stations without any emission control equipment and still meet stringent international emission standards. Besides, Envirocoal also provide three benefit in environmental, economic and technical benefit.

With about 12.8 billion tonnes in resources, Adaro are one of a few coal producers in the world capable of providing reliable, long-term coal supply to blue-chip power utilities as they build coal-fired power plants throughout Asia. Having a long-term supply agreement with these power utilities will allow Adaro to achieve

medium-term production target of 80 million tonnes per year. Adaro will focus on expanding current customer base and work with them to develop power plants that will use Adaro coal.

Recent years, valuation of company become more demanded rapidly. Globalization and financial market have favored business growth. Investment becoming more interesting, mergers and acquisition becoming phenomenon. Continued business flow in market nowadays is followed by demand to investment from stocks, loan or the other capital instrument. The goal of company valuation is to give owner, potential buyers, stakeholders and other interested buyer the measurement of a company value. Company value usually become measurement for investor to measure level of success of a company, which often associate with the stock price. High stock price make the company value also high. The main purpose of every company is to maximize the company value that also means indirectly maximizing the shareholder value, which is the main aim of a company.

Coal mining industry has growing rapidly since industrial revolution but only some company could sustain and growth. Besides, coal is the based energy for industry and have high price make this industry attractive to investor to invest in coal mining company.

Based on the APBI-ICMA there are 145 company listed in coal mining consisting of 86 coal producer companies and 59 coal mining service "Adaro, which began its commercial operation in Indonesia in 1992, is one of the top five exporters in the global seaborne thermal coal business and the largest supplier to Indonesia's domestic market. At end 2012, it was the largest mining company (based on market capitalization) listed on the Indonesia Stock Exchange." ([www.indonesia-investment.com/id/business/indonesian-companies/adaro-energy/item191](http://www.indonesia-investment.com/id/business/indonesian-companies/adaro-energy/item191))

Unfortunately coal price start decreases in 2011. The current weak coal price is mainly due to undisciplined supply growth on the back of excess liquidity and overinvestment made in the recent years. Supply contraction is slowly underway but the market has not yet rebalanced.

Besides, demand for coal now increasing after coal price decline in 2011, but Adaro could survive at that time and the demand for Adaro coal stays solid. In recent years demand for coal increases again.

Therefore more investors are vying to invest in Adaro Energy. It could be concluded that the purpose of this research is to determine the fair value of Adaro Energy which indirectly may release the information to the investors whether the company value will increase or not with some consideration from external and internal factors. For instance external factor is world economic condition in the future that have big uncertainty and also from government policy that will give impact to company performance. In addition, internal factor may consist of the strategic planning and the financial of the company

To determine the company value or fair value, the method in the financial terms is needed in order to get closer to the real result and also to forecast financial statement of the company. In financial usually the economists calculate the company value (fair value) through company financial history; the method is called valuation.

Valuation is process of determining the current worth of an asset (for instance, investment in marketable securities such as stocks, options, business enterprises or intangible assets such as patent and trademark) or liabilities of the company. Valuation are needed for many things, like investment analysis, capital budgeting, merger, acquisition transactions, financial reporting, and taxable events to determine the proper tax liability and litigation.

In general, valuation can be defined as a process of estimating market value for specific purposes of particular interest in property. It takes into account all the features of property and also considers all the underlying economic factors of the market, including the range of alternative investment through forecasting based on the historical financial statements

Valuation of financial assets can be done using one or more these types of models:

- (1) Absolute value models that determine the present value of an asset's expected future cash flows. These kinds of models take two general forms: multi-period models such as discounted cash flow models or single-period models such as the Gordon model. These models rely on mathematics rather than price observation.
- (2) Relative value models determine value based on the observation of market prices of similar assets.
- (3) Option pricing models are used for certain types of financial assets (e.g., warrants, put options, call options, employee stock options, investments with embedded options such as a callable bond) and are a complex present value model. The most common option pricing models are the Black-Scholes-Merton models and lattice models.

## 2. Theory

### 2.1 Valuation

The process of determining the current worth of an asset or company. There are many techniques that can be used to determine value, some are subjective and others are objective *"Every asset, financial as well as real, has a value. The key to successfully investing in and managing these assets lies in understanding not only what the value is but also the sources of the value"* (Damodaran: 2012)

In financial terms, valuation can be defined as a process in determining the current value through the assets owned by a company (Boundless, 2015). According to Goedhart et al., (2010), there are several types of models that can be used for valuating the financial assets of a company, which are:

1. *Absolute value models* that work by estimating the present value of assets in the future cash flow. There are two forms in this model, namely multi-period models such as discounted cash flow method and single-period model such as the Gordon dividend capitalization model (Arumugam, 2007).
2. *Relative value models* that work by determining the value of similar assets in the market.
3. *Option pricing models* that can be used by several types of financial assets and have a high complexity to be implemented as a present value model. The models that belong to this are the Black-Scholes-Merton models and lattice models. So based on the statement data before a firm doing transactions then they have to know from assets value that would be transact and also have to know what factor that influence the enterprise value

#### 2.1.3 Discounted cash flow method

Discounted cash flow (DCF) analysis is a method of valuing the intrinsic value of a company (or asset). In simple terms, discounted cash flow tries to work out the value today, based on projections of all of the cash that it could make available to investors in the future. It is described as "discounted" cash flow because of the principle of "time value of money" (i.e. cash in the future is worth less than cash today). The advantage of DCF analysis is that it produces the closest thing to an intrinsic stock value - relative valuation metrics such as price-earnings (P/E) or EV/EBITDA ratios aren't very useful if an entire sector or market is overvalued. In addition, the DCF method is forward-looking and depends more on future expectations than historical results. The method is also based on free cash flow (FCF), which is less subject to manipulation than some other figures and ratios calculated out of the income statement or balance sheet. The discounted cash flow (DCF) method is calculate the enterprise value by estimating all future free cash flow streams and discount them back to today using appropriate cost of capital. Usually the weighted average cost of capital (WACC) is used, which weight the cost of equity with the cost of debt. The DCF model is divided into two parts. The first part often call the explicit period, is where free cash flow and WACC are forecasted explicitly for every year and the cash streams are discounted back to today. The second part, often called the terminal value period, is where the cost of capital and the growth rate are assumed to be constant and the present value of all cash streams from the first year after the explicit period to infinity is calculated. The formula for the DCF model looks like this

$$EV = \frac{FCF_1}{(1+WACC)^1} + \frac{FCF_2}{(1+WACC)^2} + \dots + \frac{FCF_n}{(1+WACC)^n} + \frac{TV}{(1+WACC)^n}$$

Where

$$TV = \frac{FCF_{n+1}}{(WACC - g)}$$

(Source: Source: Frykman & Tollyrd (2010))

Where

- EV = Enterprise Value
- FCF = Future Cash Flow
- WACC = Weighted Average Cost of Capital
- TV = Terminal Value
- g = Growth Rate of the free cash flow after year n
- n = Number of years in explicit period

DCF Method is divided into four main sections

1. Estimating the Cost of Capital
2. Calculating Free Cash Flow
3. Computing Terminal Value
4. Discounting and Final Corporate Value

### 3. Discussion

There are three scenario that used in this research. which are Pessimistic, Most Likely and Optimistic. The CAGR for most likely scenario is 14.6%. For the pessimistic scenario author assuming the CAGR is 6.7% or about 46.47% from the most likely scenario. This condition may happened because the coal price decrease start from 2010 until 2015 and the demand in from China also decrease due to oversupply on the market . For the optimistic scenario. The amount of CAGR is 21% or about 150% from the most likely scenario. The author assumes that PT Adaro Energy Tbk can increase their market share because they have a lot of project from the PT Adaro Energy Tbk itself , its subsidiaries that have numerous competitive advantage and also Adaro and non-coal mining also contribute 37% of EBITDA in 2014 . By considering the use of corporate tax in the Indonesia by 25%, then the final result of the WACC is 6.3%.

**Table 1 – Pessimistic Scenario**

CAGR		6.7%	12%				
Year	2014	2015	2016	2017	2018	2019	2020
Revenue	3285	3505	3740	3991	4258	4543	4848
Cost of revenue	2605	2780	2966	3164	3376	3603	3844
	680	726	774	826	881	940	1003
FCFF							
EBIT*(1-TAX)=EBIT*(1-25%)	510	544	581	620	661	705	753
Depreciation	197	210	224	239	255	272	291
Capex	185	421	449	479	511	545	582
Working capital	-497	-455	-416	-381	-348	-319	-292
FCFF	1019	789	772	761	754	751	753
Present Value Of FCFF		547	535	527	522	521	522
Total Present Value of FCFF		3174					
Terminal value		8845					
Present TV		6131					
Present Corporate Value		9305					
Debt		1151					
Equity Value		8154					

**APPENDIX 2 – Moderate Scenario Result ( CAGR 14.6%)**

CAGR		14.6%	12%				
Year	2014	2015	2016	2017	2018	2019	2020
Revenue	3285	3765	4314	4944	5666	6493	7441
Cost of revenue	2605	2985	3421	3921	4493	5149	5901
	680	779	893	1023	1173	1344	1540
FCFF							
EBIT*(1-TAX)=EBIT*(1-25%)	510	584	670	768	880	1008	1155
Depreciation	197	226	259	296	340	389	446
Capex	185	452	518		680	779	893
Working capital	-497	-455	-416	-381	-348	-319	-292
FCFF	1019	813	827	852	888	937	1000
Present Value Of FCFF		564	573	590	615	649	693
Total Present Value of FCFF		3685					
Terminal value		9122					
Present TV		6323					
Present Corporate Value		10008					
Debt		1151					
Equity Value		8857					

**APPENDIX 3 – Optimistic Scenario Result ( CAGR 21%)**

CAGR		21.0%	12%				
Year	2014	2015	2016	2017	2018	2019	2020
Revenue	3285	3975	4810	5820	7042	8520	10310
Cost of revenue	2605	3152	3814	4615	5584	6757	8176
	680	823	996	1205	1458	1764	2134
FCFF							
EBIT*(1-TAX)=EBIT*(1-25%)	510	617	747	903	1093	1323	1601
Depreciation	197	238	288	349	422	511	618
Capex	185	477	577	698	845	1022	1237
Working capital	-497	-455	-416	-381	-348	-319	-292
FCFF	1019	833	874	935	1019	1130	1273
Present Value Of FCFF		578	606	648	706	783	883
Total Present Value of FCFF		4203					
Terminal value		9346					
Present TV		6478					
Present Corporate Value		10681					
Debt		1151					
Equity Value		9530					

### Firm and Equity Value

Firm value represents as the value of a company. Firm value can be obtained after all of the calculation processes in FCF and TV have been done. The values of FCF and TV used are both present value. Moreover, in order to obtain the firm value, thus these two present values are summed as described by **Equation 2.5**. Therefore, the results for pessimistic, moderate, and optimistic scenarios are as follows (in **USD million**) (see **Table 4.15**).

**Table 4.15 Firm Value**

Scenario	Firm Value
Pessimistic (6.7%)	<b>9305</b>
Moderate(14.6%)	<b>10008</b>
Optimistic(21%)	<b>10681</b>

*Source: Research findings*

**Table 4.15** shows the value of PT Adaro Energy Tbk, in the pessimistic, moderate, and optimistic scenarios. Furthermore, when each of these values minus total of net debt, then the equity value are obtain. Equity value is the actual value that is own by the shareholders. Unlike firm value, any kind of debt is not included in the equity value, so the value is really the net value of the company. Thus, the equity values of PT Adaro Energy Tbk, in three different scenarios are as follows (in **USD million**) (see **Table 4.16**).

**Table 4.16 Equity Value**

Scenario	Equity Value
Pessimistic (6.7%)	<b>8154</b>
Moderate(14.6%)	<b>8857</b>
Optimistic(21%)	<b>9530</b>

*Source: Research findings*

The numbers above are obtained by subtracted with 1151 (in **USD million**) as the most current total debt of PT Adaro Energy Tbk,.

### 5.1 Conclusion

The objectives of this research are to analyse the value of Vodafone Group PLC in the declining, stable, and inclining condition on the CAGR by -5%, 0%, and 5% respectively. By using these growths in the DCF method, then the fair values obtained of the company are as follows :

1. For the Growth by 6.7% (pessimistic scenario), the firm value is \$ **9,305 million**, where its equity value is \$ **8,154 million**.
2. For the Growth by 14.6% (moderate scenario), the firm value is \$ **10,008 million**, where its equity value is \$ **8,857 million**.
3. For the Growth by 21% (optimistic scenario), the firm value is \$ **10,681 million**, where its equity value is \$ **9,530 million**.

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