FINANCIAL PERFORMANCE AND VALUATION ASSESSMENT OF PT PERUSAHAAN GAS NEGARA IN COMPARISON TO PETRONAS GAS BERHAD

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ABSTRACT

Indonesia is ranked the 12th world's largest natural gas producer with production capacity of 2,371.58 BSCF in 2019. Domestic consumption has grown tremendously over the last 10 years. Indonesia gas domestic consumption increased from only 47 percent back in 2009 to 64 percent in 2019. PT Perusahaan Gas Negara (PGN) operates the gas transmission and distribution system and infrastructure in Indonesia, serving 92% of the domestic market. On the other hand, Petronas Gas Berhad (PGB) is the backbone of Malaysia's gas transportation system. Both companies are public company subsidiary of its respective country's National Oil Company, namely Pertamina and Petronas. This final project conducts financial ratio analysis based on companies' financial report year 2015-2019 to evaluate the historical performance. Meanwhile, valuation assessment was carried out on PGN to determine the company's fair value in relation to the COVID-19 pandemic which affects the company's business. Financial ratio analysis conducted in this project included profitability ratio, liquidity ratio, activity ratio, solvency ratio and DuPont analysis. Furthermore, PGN's company intrinsic value was analyzed using the free cash flow to the firm (FCFF) method. From the study, it is concluded that both PGN and PGB has good financial performance but PBG is more superior and PGN is recommended to improve its financial performance. Furthermore, the valuation using FCFF method result shows that the intrinsic value of PGN stock price is Rp 3,313 per share while the current stock price is Rp 1,805 per share (Dec 18, 2020), thus the stock price is undervalued.

Keywords: Financial ratio, company valuation, intrinsic value

INTRODUCTION

Indonesia is the largest economy country in Southeast Asia, with total population of around 270.9 million, Gross Domestic Product of US$1.119 trillion and ranking 7th in the world on Purchasing Power Parity according to the World Bank data on year 2019. Over the past decade, Indonesia's economic has been growing steadily around 5% yearly and this has brought up Indonesia from lower-middle income group to upper-middle income group as classified by the World Bank. The growth of Indonesia's economic was resulted from the master plan planning developed by the Government, which is 20-year development plan spans from 2005 to 2025.

Indonesia is ranked the 12th world's largest natural gas producer with net production capacity of 2,371.58 BSCF in 2019. Domestic consumption has grown tremendously over the last 10 years. Gas domestic consumption increased from only 47% back in 2009 to 64% in 2019. Through the Government Regulation No. 79 year 2014 regarding National Energy Policy, domestic gas utilization is targeted to be increased from 19% to 24% from the total energy mix by end of 2050. In contrary, the utilization of oil is expected to decrease from 42% to 20% from the total energy mix in 2050. The current domestic gas demand is utilized for various sectors as shown in Figure 1 below. Most of the domestic gas demand comes for the industry sector for more than 33%, then followed by electricity and fertilizer sectors by 30% and 24% respectively.

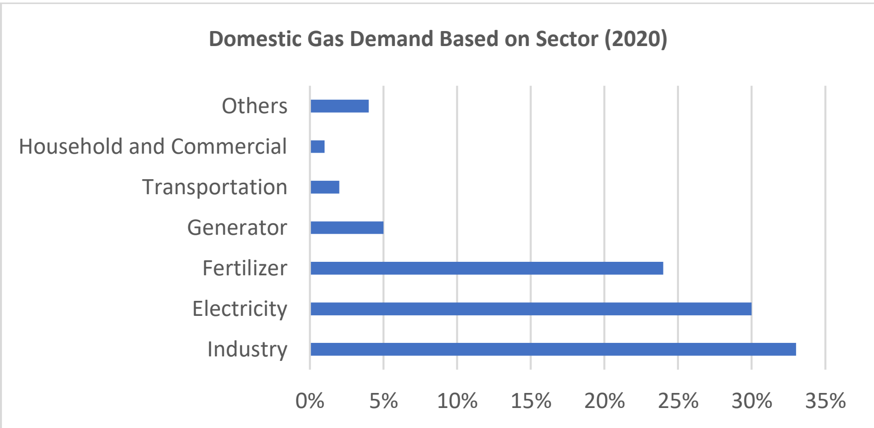


Figure 1 Domestic gas demand based on sector, year 2020 (Source: PGN's Company Data, 2020)

PT Perusahaan Gas Negara Tbk. (PGN)

PT Perusahaan Gas Negara Tbk. (PGN) is Indonesia’s largest natural gas transportation and distribution company. PGN plays major role in meeting domestic natural gas needs as integrated energy solution provider. Initially established as a Dutch private company named Firma LJN Eindhoven & Co Gravenhage, PGN then was set as a state-owned company on May 13, 1965. PGN entered the Indonesia Stock Exchange (IDX) list with stock code “PGAS” since December 15, 2003. The company is currently owned by the government through Series a Dwiwarna Shares; 56.96% Series B Shares by PT Pertamina (Persero) and 43.04% Series B Shares by public.

In transmission and transportation segment, PGN and its affiliation have developed more than 9,909 Km of natural gas pipeline networks in many locations, covering 95% of national natural gas pipeline, connecting the distribution line from natural gas source location to the end user. High pressure transmission pipeline is used to transport the natural gas from producer to customer. In the commercial and natural gas business segment, PGN purchases natural gas from various producers and sold it to end user segments such as industries, power plants, transportation sectors, etc. though pipelines, as CNG, or as LNG. In oil and natural gas business (upstream), PGN through its affiliate company, Saka Energi, manages ten domestic operational areas and one international operational area. Last, in other business segment, PGN also involves in fiber optic capacity leasing activities for network provision and construction and maintenance services.

Government assigned PGN as Gas Sub-holding, part of the SOE Holding, and the assignment is objected as the State strategic tool in speeding infrastructure development to improve the utilization of domestic natural gas. PGN officially acquired PT Pertamina Gas (Pertagas) in April 2018 through the transfer of all B Series shares own by the government in PGN to PT Pertamina (Persero). As Gas Sub-holding, since 2019, 100% market share of natural gas transportation business activities and 92% market share of natural gas trading business activities are controlled by PGN. The entire natural gas supply chain, from the procurement of gas supply, infrastructure management, up to the distribution of product to end users is managed by PGN.

Petronas Gas Berhad (PGB)

Petronas Gas Berhad (PGB) is Malaysia’s leading gas infrastructure and centralized utilities company. PGB was incorporated in 1983. PGB is currently headquartered at PETRONAS Twin Towers, Kuala Lumpur. It operates 8 sites across Malaysia, including 2 gas processing complexes in Kertih and Santong, Terengganu, 2 utilities in Kertih, Terengganu and Gebeng, Pahang, 2 LNG regasification terminals in Sungai Udang, Melaka and Pengerang, Johor. PGN operates 2,623 km of pipeline in Penisular Malaysia.

The core business of PGB is divided on four units; which are 1) gas processing, 2) gas transportation, 3) regasification, and 4) utilities. In gas processing, PGB process upstream natural gas produced by PETRONAS from the offshore Peninsular Malaysia into sales gas, ethane, propane, and butane. In the next unit, gas transportation, PGB transports the gas to the customers through pipeline network. In regasification, PGB receives imported LNG and store it in LNG Regasification Terminals storage tanks, and then convert LNG to sales gas. Last, in utilities segment, PGB produces, markets, and supplies electricity, steam, industrial gases, and other utility products to industrial area.

LITERATUR REVIEW

Financial ratio shows as relationship determined from a company’s financial information and can used for comparison purposes (Ross, et al, 2010). Using ratio comparison, financial information of companies with different sizes can be compared and analyzed because the numbers will be in form of percentages, multiples or time periods; the company size factor is not taken into account. Financial ratios are traditionally classified into the following categories: liquidity (short-term) solvency ratios, activity ratio, profitability ratio, long-term solvency ratios, market value ratios and DuPont analysis (Gitman, 2009).

The most fundamental approach to determine the company’s intrinsic value is absolute valuation using Discounted Cash Flow (DCF) valuation. This method is projected cash flow, based on analysis of how much money investor would receive from an investment. According to Damodaran (2010), in determining company value with this approach, there are four factors that acts as drivers, namely capacity to generate cash flows from the current assets, growth rates, duration for the company reach stable growth, and the cost of capital.

RESEARCH METHODS

Methodology used in this study is financial ratio analysis (FRA), such as liquidity ratio, activity ratio, profitability ratio, solvency ratio, market ratio, and DuPont analysis. Based on company financial statement from 2015 to 2019, various ratios are computed and analyzed. The FRA result for PGN is then compare to PGB, with analysis and evaluation. Discounted cash flow method - free cash flow to the firm (FFCF) is utilized to calculate PGN's intrinsic value.

a. Liquidity Ratio

- **Current Ratio**

The current ratio is used to measure the company's ability to pay off short-term liabilities with its current assets.

$$Current\ Ratio = \frac{Current\ Assets}{Current\ Liabilities}$$

- **Cash Ratio**

The cash ratio, also called cash coverage ratio, provide measurement that describe the company's ability to pay off current liability using cash and cash equivalents.

$$Cash\ Ratio = \frac{Cash + Cash\ Equivalents}{Current\ Liabilities}$$

b. Activity Ratios

- **Collection Period**

Collection period indicates the number of days company need to convert the accounts receivable into cash. This ratio shows the company's effectiveness grants credits and collects from customer.

$$Collection\ Period = \frac{Accounts\ Receivables}{Net\ Sales} x\ 365\ days$$

- **Inventory Turnover**

This ratio measures the how many days company takes to sell their products.

$$Inventory\ Turnover = \frac{Cost\ of\ Revenues}{Inventory}$$

- **Total Asset Turnover**

This ratio indicates how effective company utilizes its capital to generate revenues. The higher the result means that assets are used effectively.

$$Total\ Asset\ Turnover = \frac{Net\ Sales}{Average\ Total\ Asset}$$

c. Profitability Ratio

Profitability ratio shows measurement of company's ability to generate profits from sales, assets and capital share.

- **Gross Profit Margin**

This ratio shows the percentage of remaining cash that the company has, after all cost and expenses have been paid. Higher gross profit margin is preferred.

$$Gross\ Profit\ Margin = \frac{Gross\ profits}{Sales}$$

- **Operating Profit Margin**

This ratio measures the percentage of remaining cash that the company has, after expenses but excluding interest, taxes, and preferred stock dividend.

$$Operating\ Profit\ Margin = \frac{Operating\ profits}{Sales}$$

- **Net Profit Margin**

This ratio measures the percentage of remaining cash that the company has, after expenses including interest, taxes, and preferred stock dividend.

$$Net\ Profit\ Margin = \frac{Net\ Income}{Sales}$$

- **Return on Asset (ROA)**

ROA, or also called as Return on Investment (ROI) indicates profits as percentage of cost, or in other word, shows the efficiency of investment employed by company.

$$ROA = \frac{Net\ Income}{Total\ Asset}$$

- **Return of Equity (ROE)**

ROE indicates company's profitability compared to its total equity.

$$ROE = \frac{Net\ Income}{Shareholder's\ Equity}$$

d. Long-Term Solvency Ratio

- **Debt to asset**

Total debt ratio measures all debts compared to the company's total assets.

$$Debt\ to\ Asset\ Ratio = \frac{Total\ Assets - Total\ Equity}{Total\ Assets}$$

- **Debt to Equity**

Total debt ratio measures all debts compared to the company's equity.

$$Debt\ to\ Equity\ Ratio = \frac{Total\ Assets - Total\ Equity}{Total\ Equity}$$

- **Interest Coverage Ratio**

Interest coverage ratio, or also known as Times Interest Earned (TIE) ratio, shows how well interests' obligation is covered by the company.

$$Interest\ Coverage\ Ratio = \frac{EBIT}{Interest}$$

- **Cash Coverage Ratio**

Cash coverage ratio is similar with interest coverage ratio. While the interest coverage ratio is based on EBIT, cash coverage ratio is based on the cash flow from operation, which is the earnings before interest, taxes, depreciation, and amortization.

$$Cash\ Coverage\ Ratio = \frac{EBITDA}{Interest}$$

e. DuPont Analysis

DuPont analysis is a tool used to evaluate financial performance by decomposing the drivers of Return on Equity (ROE). This framework is originally introduced by DuPont Corporation. ROE is driven three components, which are profit margin, total asset turnover, and financial leverage.

$$ROE = Net\ Profit\ Margin\ x\ Total\ Asset\ Turnover\ x\ Finanical\ Leverage$$

f. Company Valuation

- **Free Cash Flow to the Firm (FCFF)**

Free Cash Flow to the Firm (FCFF) shows the amount of cash available to investors (creditors and owners) after the firm has met all operation need and paid for operating needs and paid for investment in net fixed assets and net current assets. The calculation considers all cash inflows, outflow, and reinvested cash or all capital investment activities.

$$\begin{aligned} FCFF = {} & Net\ income + Non\ cash\ charges + (Interest\ x\ (1 - Tax\ Rate) \\ & - Longterm\ Investment - Investment\ in\ Working\ Capital \end{aligned}$$

- **Growth**

For FCFF, the growth rate assumption is taken for projecting operating earnings. The expected growth in operation income is estimated with reinvestment rate with return of capital. Reinvestment rate is the proportion of after-tax operating income invested in capital expenditure and non-cash working capital. Over the time as the company become more mature, reinvestment rate usually decreases. For this case, reinvestment rate is better to be taken from the industry average rates. Using the industry average is preferable than using the current return on capital for the forecasted return on capital when the calculation result shows substantial higher number the industry average.

- **Discount rates**

For FCFF, discount rate used for the calculation is the cost of capital, which is the return expected from the capital or investment placed. In most cases, companies use combination of equity and debt for their financing. The cost of capital is then derived from Weighted Average Cost of Capital (WACC). The calculation is written in the following structure:

$$WACC = \frac{E}{V}K_e + \frac{D}{V}K_d\ (1 - t)$$

Where E = market value of equity, V = risk-free rate of return, Ke = cost of equity, D = market value of debt, Kd = cost of debt, t = tax rate.

Cost of debt is defined as the return company pays to debtholders and creditors. The calculation is written in below equation:

$$Cost\ of\ Debt = (Rf + default\ spread)(1 + tax\ rate)$$

Cost of equity is defined as the return company required by shareholders. The rate is associated with risk and historical volatility of returns. It is calculated with Capital Assets Pricing Model (CAPM). The calculation is written in below equation:

$$Cost\ of\ Equity = Rf + \beta\ (Rm - Rf)$$

Where Rf = risk-free rate of return, B = beta, Rm = market rate of return

- **Terminal Value**

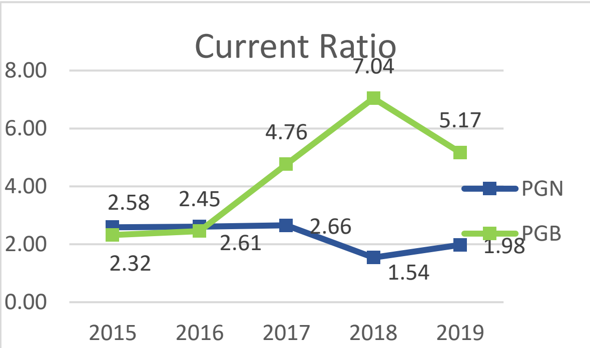
Terminal value is the value after the forecast period, which assumes that the business will grow at a sustainable set growth rate forever after the forecast period.

RESULT AND DISCUSSION

a. Liquidity Ratios

Liquidity ratio indicates the company's ability to meet its current liabilities or short-term liabilities obligation. Liquidity ratios for PGN and PGB for the period of 2015 to 2019 are shown in Figure below.

(a) (b)



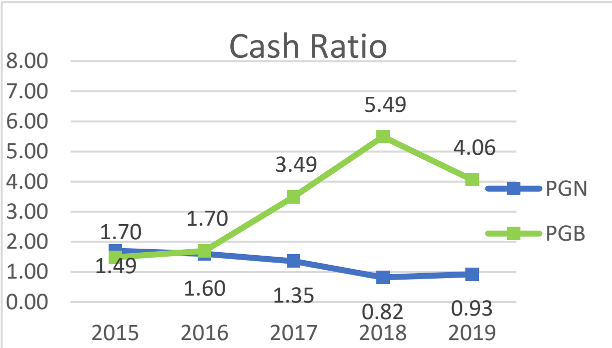
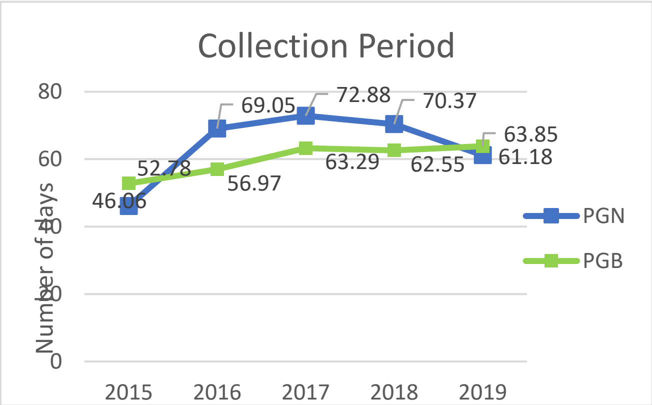


Figure 2 Liquidity ratio (a) Current Ratio and (b) Cash Ratio of PGN and PGB during 2015-2019

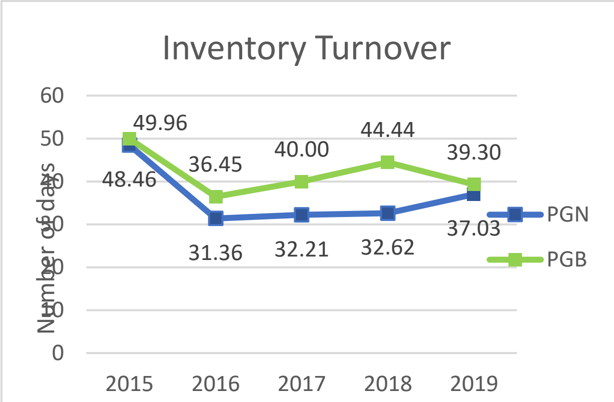
Current ratio and cash ratio of PGN and PGB in 2015 and 2016 are comparably in the similar positions. But in 2017 to 2018, PGN ratios declines, but then slightly increases in 2019. For the current ratio and cash ratio, value above 1 would be preferable because it indicates that the company is able to pay its current liabilities with its current asset or cash. If the ratio is less than 1, it indicates that the current asset (for current ratio) or cash (for cash ratio) is insufficient to pay the short-term liabilities. Meanwhile, very high ratio cannot directly indicate whether the company is effective or ineffective in managing its cash or current asset. Overall, both companies have good current ratios for period 2015-2019 with all ratios above 1. While PGB has much higher current ratios in 2017, 2018, and 2019 than PGN, further analysis of the PGB management's effectiveness in managing cash is needed.

b. Activity Ratios

Activity ratio indicators are consisted of collection period, inventory turnover and total asset turnover. The collection period for PGN changes throughout 2015-2019. In 2015, PGN can collect receivables in 46 days but then the performance decreases in 2016 and 2017 as the number of days increases to 69 and 73 days for respective year. The number of days slightly decreases to 70 days in 2018, and again in 2019 to 61 days to collect receivables. On the other hand, collection period of PGB in 2015 is 53 days and it increases over the period to 64 days in 2019. Inventory turnover indicates the number of days the products held in inventory before being sold. Comparing inventory turnover of PGN and PGB as shown in figure 3.4 above, PGB has considerably higher ratio than PGN. Overall, lower ratio is preferable because it indicates the effectiveness of management in managing their inventory and product.



(a)



(b)

Figure 3 Activity Ratio (a) Collection Period and (b) Inventory Turnover of PGN and PGB during 2015-2019

Total asset turnover indicates the company's ability to generate revenues from its asset, or in other words, shows company's effectiveness in managing their asset to generate revenues. Figure 4 below shows total asset turnover of PGN and PGB during 2015-2019. PGB total asset turnover ratio is higher than PGN. Higher ratio is preferable because it indicates that the company manage its asset well. PGN has 0.53 total asset turnover ratio in 2015. Even though the trend is positive over time, the improvement from 2015 to 2019 is still below PGB.

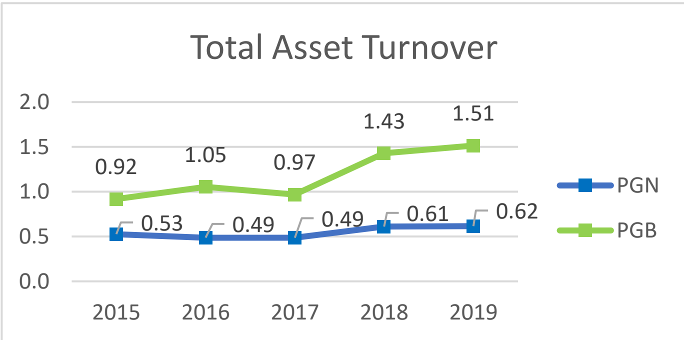


Figure 4 Total Asset Turnover of PGN and PGB during 2015-2019

c. Profitability Ratio

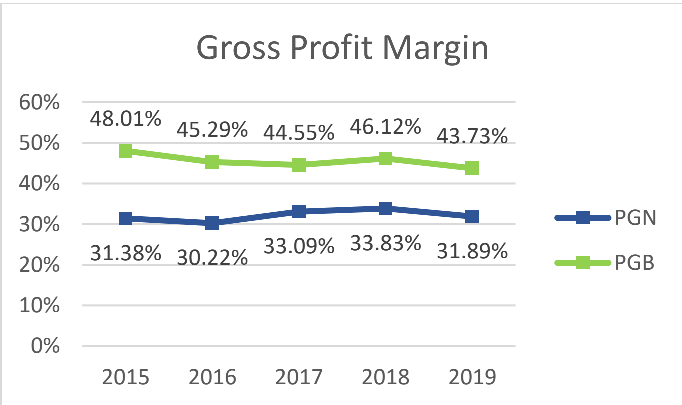


Figure 5 Gross Profit Margin of PGN and PGB during 2015-2019

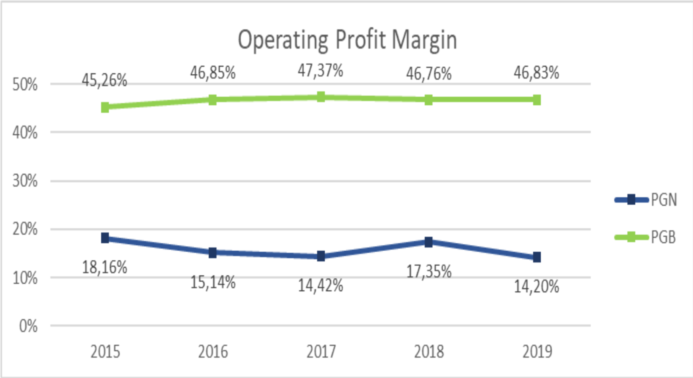


Figure 6 Operating Profit Margin of PGN and PGB during 2015-2019

From the Figures 5, 6, and 7, in overall, gross profit margin, operating profit margin, and net profit margin of PGB is higher than PGN, which indicates that PGB generates more profits from their sales. PGN's gross profit margin is comparably lower than PGB. This indicates that cost of revenue of PGN is still high. Operating profit margin of PGN is also lower, which indicates that the operating expenses such as distribution and transmission expenses, general and administrative expenses, and other expenses are still high.

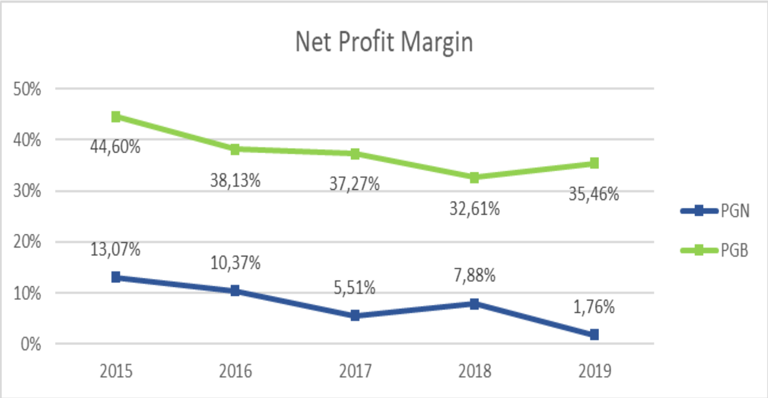
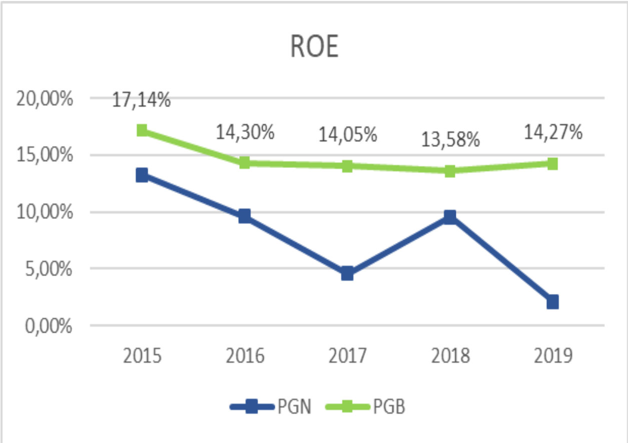
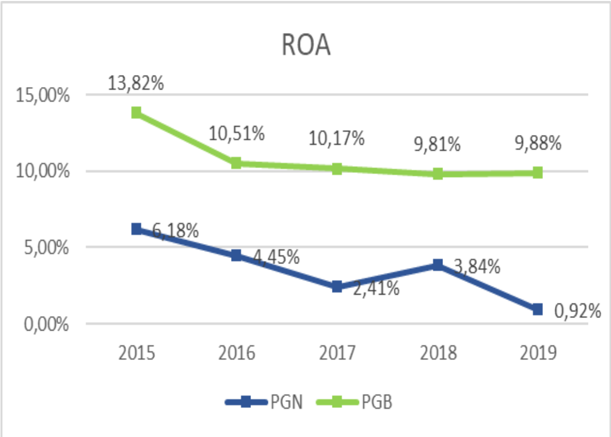


Figure 7 Net Profit Margin of PGN and PGB during 2015-2019

ROA is an indicator that measures the company's efficiency in using the total assets to generate profit. ROE is defined as profit attributable to shareholders divided by the average shareholder's equity for the financial year.



(a)



(b)

Figure 8 (a) Return on Equity and (b) Return on Asset Ratio of PGN and PGB during 2015-2019

ROA and ROE of PGB is relatively more stable than PGN. PGN provides decreased return during 2015 to 2017 due to the decrease of net profit. In 2018, both ratios increase due to the consolidation with Pertagas, but in 2019, the ratios decrease due to the significant fall in net profit due to challenge faced by PT Kalimantan Jawa Gas, one of PGN's affiliation.

d. Solvency Ratio

Solvency ratio is used as to measure company's ability to meet its long-term obligations including the interests. The indicators used are debt to asset, debt to equity ratio, interest coverage ratio and cash coverage ratio.

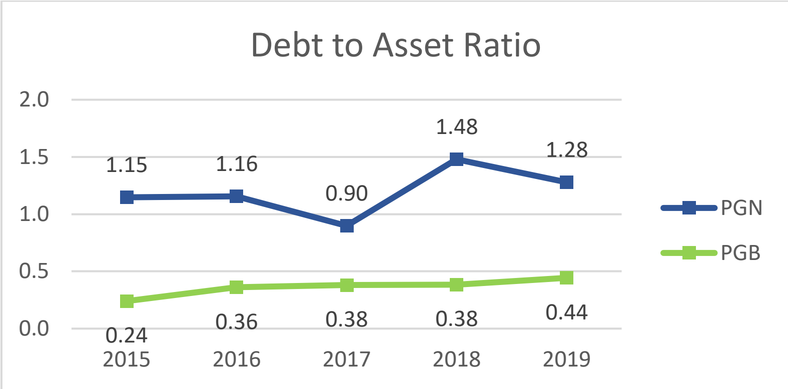


Figure 9 Total Debt Ratio of PGN and PGB during 2015-2019

Higher ratio indicates higher debt. PGN has comparably higher total debt ratios than PGB. Total debt ratio of PGN in 2018 increases from 0.47 to 0.6 compared to the previous year due to the Pertagas share transfer activities from Pertamina to PGN which requires PGN to issue promissory note.

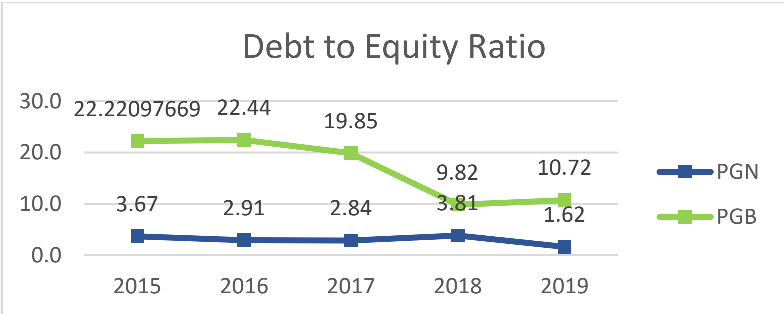
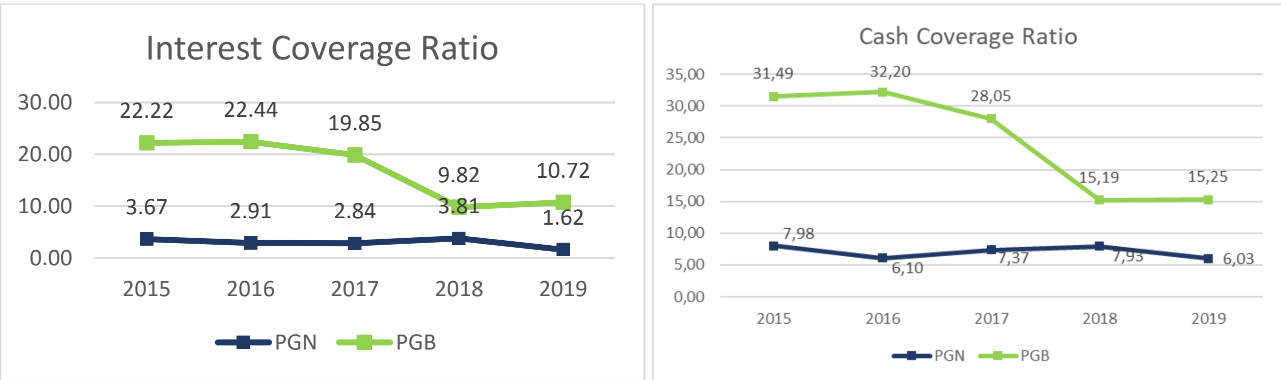


Figure 10 Debt to Equity Ratio of PGN and PGB during 2015-2019

The ratio above measures debt in comparation to equity. Debt to equity ratio higher than 1 means that the company use debts and loans more than the equity in financing their business. Comparing debt to equity ratio between PGN and PGB, PGN has higher ratio, which means that PGN uses more portion of liabilities or debt than equity in financing their business. Meanwhile, PGB has lower ratios, which indicates that PGB uses more equity portion than liabilities.



(a) (b)

Figure 11 (a) Interest Coverage and (b) Cash Coverage ratio of PGN and PGB during 2015-2019

Overall, PGB has higher ratios in both interest coverage and cash coverage, which means that PGB has more capabilities in meeting its interest payment. From 2015 to 2016, PGB ratio slightly increased, but from 2016 to 2018, it declines. During this period, PGB take more debts than the previous years. Meanwhile, PGN interest coverage ratios and cash coverage ratios remain stable over the period.

e. DuPont Analysis

DuPont analysis is a tool used to evaluate financial performance by decomposing the drivers of Return on Equity (ROE).

Table 1. DuPont Analysis of PGN

DUPONT ANALYSIS	PGN				
	2015	**2016**	**2017**	**2018**	**2019**
Profit Margin	0.13	0.10	0.06	0.08	0.02
Assets Turnover	0.47	0.43	0.44	0.49	0.52
Financial Leverage	2.15	2.16	1.90	2.48	2.28
ROE	**13.27%**	**9.60%**	**4.57%**	**9.53%**	**2.09%**

During 2015-2019, PGN has significant decrease in profit margin. PGN has profit margin of 13,07% in 2015, but in 2019, the profit margin is only 1.76%. Comparing data from 2015 to 2019, the profit margin is decreasing by 86.57% in 5 years. The decrease of profit margin has significantly driven the decreasing performance in ROE. While the asset turnover ratios are relatively stable throughout the years, the financial leverage is slightly more dynamic.

Table 2. DuPont Analysis of PGB

DUPONT ANALYSIS	PGB				
	2015	**2016**	**2017**	**2018**	**2019**
Profit Margin	0.45	0.38	0.37	0.33	0.35
Assets Turnover	0.31	0.28	0.27	0.30	0.28
Financial Leverage	1.24	1.36	1.38	1.38	1.44
ROE	**17.14%**	**14.30%**	**14.05%**	**13.58%**	**14.27%**

ROE drivers of PGB are analyzed. Profit margin decreased during the 5-year period, from 44.6% in 2015 to 35.5% in 2019. On the other hand, assets turnovers are comparably stable while financial leverage ratios slightly increase over the years. In summary, the main drivers of ROE for PGB are profit margin and financial leverage. The same factors also drive PGN's ROE, but PGN has higher variance.

f. Company Valuation with FCFF Method

- **Macroeconomic Overview**

Since the Covid-19 pandemic has been announced as global pandemic by World Health Organization (WHO) in March 2020, until the writing of this paper, governments around the globe are in their best effort to implement various regulation such as social distancing and travel restriction to push the spread of the Covid-19 outbreak. As of December 8, 2020, the WHO has recorded globally 67,210,778 of confirmed cases with 1,540,777 confirmed deaths (covid19.who.int). Action taken by governments includes physical distancing, travel restriction, and social restrictions impacts on the decrease of productivity in most industries. According to World Trade Organization, manufacture, transportation and tourism industry is the most affected industry with significant decrease in productivity reaching 80%. According to Indonesia's Central Bureau of Statistics (2020), the Covid-19 pandemic impacts to the decrease of economic performance globally, including Indonesia. In Q1 2020, Indonesia's -economic growth only reached 2.97% y-o-y and continue to further decrease in Q2 2020 to -5.32% y-o-y. The World Bank projects that Indonesia economy is expected to start rebounding in 2021 and to gradually strengthen in 2022. Growth in projected to rebound to 4.4% in 2021 driven by recovery in private consumption. Moreover, the growth would strengthen in 2022 to 4.8% as confidence improves provided an effective and safe vaccine in available to a large part of the population.

- **Industry Overview**

During 2013-2019 period, domestic gas demand and consumption keep increases as customers from manufactures, electricity, and fertilizer industries take the 94.3% of total domestic gas demand. Government continues to look forward for another increase in domestic natural gas consumption by the implementation of regulation from Ministry of Energy and Mineral Resources No. 89K/10/MEM/2020 regarding natural gas users and price in certain industries. Regulated tariff of the gas price to US$ 6 per MMBTU for listed industries, including fertilized, petrochemical, oleochemical, glass, ceramic, and plastic gloves.

Due to Covid-19 pandemic that affected global economic and productivity, gas demand also negatively impacted in early 2020. According to IEA report, Gas consumption is expected to fall by 4% in 2020 and the Covid-19 crisis will have long-lasting impacts on natural gas markets. However, IEA projected that in 2021, Asia Pacific region such as China and other emerging market in Asia, will recover economically and benefit from the attractive gas price, unlike mature markets like Europe, Eurasia, and North America, where expected to continue facing loses in 2021 as demand from industrial sectors and power generation gradually returns. Asia, such as China, India, and emerging Asian countries are projected to be the primary driver of global demand growth until 2025, mainly because of the supportive government policies, improved infrastructure and demand in power sector.

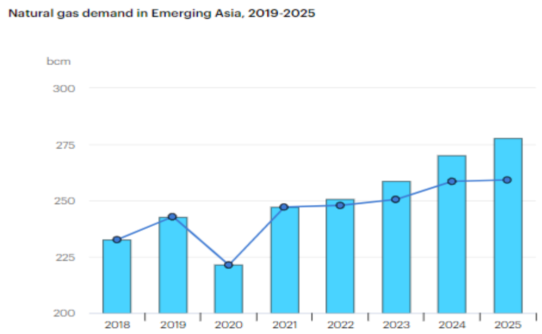


Figure 12 Natural gas demand in Emerging Asia, 2019-2025 (Source: EIA, 2020)

- **Company Overview**

Due to Covid-19 pandemic, it is projected that total distribution volume in 2020 will decreased, compared to the previous year as the impact from low gas consumption rate in industrial sector. Based on PGN Q3 2020 financial statement, revenue decreases by 23.5% y-o-y. However, since June 2020, the market has started to recover, and the demand started to increase. PGN as the leading gas distribution and transportation company is one of the key players to support the government in recovering national economic. As part of SOE Oil and Gas holding as the sub-holding gas, PGN supports government in various programs such as 4 million household gas network and regulated gas price of $6 per MMBTU for several industries and electricity.

- **Weighted Average Cost of Capital (WACC)**

Discount rate used for the calculation is the Weighted Average Cost of Capital (WACC), which is the return expected from the capital or investment placed that is combination of equity and debt.
Cost of Equity is estimated with the following inputs: Risk free rate is 6.056%, obtained from 10-year Indonesia Government Bond yield. Market premium risk used in this calculation is 2.80%, obtained from Damodaran's country risk premium for Indonesia. Beta of the investment used is 1.876, based PEFINDO Beta Stock dated 11 December 2020. Cost of equity is calculated, and the result is 6.07%.

Cost of Debt is estimated with input as follows: Default spread used is credit ratings with Baa2 by Moody's Investors Service as on Jun 2020, spread is 1.81%. Income tax rate is 25%. The cost of debt is calculated, and the result is 5.89%.
Market value of equity is estimated by by multiplying number of common stock outstanding with its share price which is currently Rp 1,805 (equals to USD $0.12815) dated Dec 18,2020. The market value equity is $ 3,106,561,753.
Market value of debt is estimated with thinking that the debt as a single coupon bond, and interest expenses as the coupon, maturity as average maturity of the debt. The calculation is resulting $ 2,574,915,801 for the market value of debt.
Finally, WACC is calculated based on inputs above and the result is 7.01%.

- **Growth Rate**

DCF calculation is conducted for 10 years using multiple growth approach. It is expected to see decrease in growth in 2020 compared to the previous year due to Covid-19. However, as projected by EIA and described in industry overview above, in 2021-2015, gas market in Asian emerging countries will recover and even take economical advantage of the price and from government regulation support. Thus, assumption taken based on the above information for revenue growth in 2020 is -25%, then 20% rebound growth in 2021, and during 2022-2029, the growth rate projection is 5.07%, based on the average growth of PGN year 2015 to 2019.

- **Terminal Growth Rate**

Terminal growth rate is the assumption taken that company will continue to grow at steady, constant rate into perpetuity. The terminal growth rates typically range between the historical inflation rate and the average GDP growth rate. For this valuation, the terminal growth rate used is is 4.6%, based on average projected Indonesia's economic growth 2021-2022 by World Bank.

Table 3. Key Assumption of Valuation

Key Assumption	
Beta	1.876
Risk Market Premium	2.8%
Risk Free Rate	6.056%
Cost of Equity	7.99%
Cost of Debt	5.89%
Tax Rate	25%
Weight of Equity	54.68%
Weight of Debt	45.32%
WACC	7.01%
Terminal Growth	4.6%

Table 4. Summary of PGN's Valuation

Terminal value	**$**	**10,364,201,738**
PV (Terminal value)	$	5,262,937,209
PV (CF over next 10 years)	$	1,868,559,076
Value of equity	$	5,702,377,218
Number of shares		24,241,508,196
Value per share	$	0.2352

Based on the valuation using Discounted Cash Flow of FCFF, the terminal value of PGN after 10 years is $10,364,201,738. Furthermore, the intrinsic value per share of PGN is $0.23523 (Rp 3,313). Meanwhile, the stock was traded on the market at $0.12815 (Rp 1,805) in Dec 18, 2020. This shows that there is current market value is below intrinsic value, thus it is undervalued.

LIMITATIONS

Other aspects such as technical, operational, legal, administrative and marketing were not included in this study. Further, this valuation is based on assumptions taken in limited available data and information, in the midst of uncertainty due to Covid-19 pandemic that to date still happening. There market is volatile and changes daily, thus further observation on the market is highly needed.

CONCLUSIONS AND RECOMMENDATION

The purpose of this research is to evaluate the financial performance of PT Perusahaan Gas Negara Tbk. and compare the result to Petronas Gas Berhad's financial performance based on the financial data for period of 2015 to 2019 and to assess PT Perusahaan Gas Negara Tbk. valuation using FFCF method. Based on the Financial Ratio Analysis, almost all the indicators show that Petronas Gas Berhad performs better than PT Perusahaan Gas Negara Tbk. This indicates that management of PT Perusahaan Gas Negara Tbk. should reevaluate and improve their performance and operation efficiency in the future. The intrinsic value per share of PT Perusahaan Gas Negara Tbk. is $ 0.23523 (Rp 3,313). Meanwhile, the stock was traded on the market at $ 0.12815 (Rp 1,805) in Dec 18, 2020. This shows that there is current market value is below intrinsic value, thus it is undervalued and investors can consider to invest on PGN.

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