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Implementation of Sustainable Growth Rate in Indonesia's Stock Market

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Abstract. The Indonesia financial market is facing a recession in 2020. The decline in the financial market has been started since 2018. The pandemic of Covid-19 worsens the condition. This paper examines the SGR, AGR, and DPR of five selective random sampling banks from the financial sector in the Indonesian capital market to find out what is happening. The findings show that even though the SGR value is decreasing, most banks show an increasing value of DPR. One possible cause is banks do not have other places for investments so that they give the profit to shareholders.

Keywords: Sustainable Growth Rate; Actual Growth Rate; Divident Payout Ratio

1. Introduction

The Indonesia financial market is facing a recession in 2020. The decline in the financial market has been started since 2018. The pandemic of Covid-19 worsens the condition.

This paper examines the SGR, AGR, and DPR of five selective random sampling banks from the financial sector in the Indonesian capital market. The value of SGR is calculated, then compared to the actual growth rate of the firms. Corporate actions related to the SGR that year are also studied, then the comparison chart is analyzed.

2. Literature Review

2.1 Babcock (1970)

Babcock (1970) is the first to study the concept of sustainable growth. The model is

$$SGR = \frac{1}{1 - r_b}$$

where SGR is the sustainable growth rate and r_b is the ratio of retained earnings to book value $\left(\frac{Retained\ earnings}{Book\ Value}\right)$. The result shows that it is not good if earnings grow too fast. Fortunately, it has good potential if earnings do not grow fast enough (Babcock, 1970).

2.2 Higgins (1977)

Higgins (1977) tries to test the consistency of financial policies and growth objectives using SGR. For firms that want to maintain a target dividend payout ratio and capital structure without issuing new equities and debts, the SGR should be consistent with the firm's established financial policies. This is the model

$$SGR = R \times P \times A \times T'$$

where SGR is the sustainable growth rate, R is the retention ratio $\left(\frac{Retained\ earnings}{Profit}\right)$, P is the profit margin $\left(\frac{Profit}{Sales}\right)$, A is the asset turnover ratio $\left(\frac{Sales}{Assets}\right)$, and T' is the leverage factor related to assets and opening equity $\left(\frac{Assets}{Opening\ equity}\right)$.

A simplified version of the model is

$$SGR\ (simplified\ version) = ROE \times b$$

where *SGR* is the sustainable growth rate and *b* is the retention ratio. The findings show that if the sales growth rate is bigger than SGR, then the firms must increase sales and get more profits. On the other hand, if the sales growth rate is lower than SGR, then firms can increase the payout ratio, reduce the leverages, or build more liquid assets (Higgins, 1977).

2.3 Ashta (2008)

Ashta (2008) tries to improve the clarity and financial analysis of Higgin's model (1977) for calculating SGR. This is the model

$$SGR = R \times P \times A' \times T^0$$

where: *SGR* is the sustainable growth rate, *R* is the retention ratio $\left(\frac{Retained\ earnings}{Profit}\right)$, *P* is the profit margin $\left(\frac{Profit}{Sales}\right)$, *A'* is the asset turnover ratio related to opening period assets $\left(\frac{Sales}{Opening\ assets}\right)$, and T^0 is the leverage factor related to opening assets and opening equity $\left(\frac{Opening\ assets}{Opening\ equity}\right)$.

The findings show that the SGR works consistently if opening assets are used in the asset turnover ratio. Then, the leverage ratio, assets, and equity must use begging of period values. For asset turnover ratio must use opening assets (Ashta, 2008).

2.4 Van Horne and Wachowicz (2008)

Van Horne and Wachowicz (2008) in his book say that the model of SGR is

$$SGR = \frac{b\left(\frac{NP}{S}\right)\left(1+\frac{D}{Eq}\right)}{\left(\frac{A}{S}\right)-\left[b\left(\frac{NP}{S}\right)\left(1+\frac{D}{Eq}\right)\right]}$$

where *A/S* is the total-assets-to-sales ratio, *NP/S* is the net profit margin (net profits divided by sales), *b* is the retention rate of earnings, *D/Eq* is the debt-to-equity ratio, S_0 is the most recent annual sales (beginning sales), and ΔS is the absolute change in sales from the most recent annual sales (Van Horne & Wachowicz, 2008).

2.5 Lockwood and Prombutr (2010)

Lockwood and Prombutr (2010) study the relation between SGR and stock returns from 1964 to 2007. This is the model

$$SGR = RR \times NPM \times ATO \times FL$$

where *SGR* is the sustainable growth rate, *RR* is the retention rate, *NPM* is the net profit margin, *ATO* is the asset turnover, and *FL* is the financial leverage of the firm.

The results show that high SGR is related with low default risk, low book-to-market ratios, and subsequent low returns. Of the four variables used in the paper to explain SGR, the net profit margin is the main factor of following returns. Additional findings tell that the SGR is related to risk, not to mispricing (Lockwood & Prombutr, 2010).

2.6 Amouzesh, Moeinfar, and Mousavi (2011)

Amouzesh, Moeinfar, and Mousavi [2011] study about SGR and its relation to liquidity and firm performance in Iran financial market during 2006-2009. The methodology used is linear regression to examine the association between the deviation of actual growth rate from SGR, ROA, PBV, CR, and Acid ratios. This is the model

$$AGR = (ROA \times b)(1 - ROA \times b)$$

$$SGR = \frac{(ROE \times b)}{(1 - ROE \times b)}$$

where *AGR* is the actual growth rate, *ROA* is return-on-asset, *ROE* is return-on-equity, *b* is the retention rate of earnings, and *SGR* is the sustainable growth rate.

The findings show that the deviation of the actual growth rate from SGR has a relationship with ROA and PBV, but no relation with CR and acid ratios (Amouzesh, Moeinfar, & Mousavi, 2011).

2.7 Fonseka, García Ramos, and Tian (2012)

Fonseka, García Ramos, and Tian (2012) compare SGR from Higgins model and Van Horne model, then estimate the divergence related to variations in common financial characteristics. This is the model

$$SGR = \beta_0 + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + \beta_4 X_4 + \beta_5 X_5 + \beta_6 X_6 + \beta_7 X_7 + \beta_8 X_8 + \beta_9 X_9 + \beta_{10} X_{10} + \beta_{11} X_{11}$$

where *SGR* is the sustainable growth rate, β_0 is constant, X_1 is liquidity, X_2 is profitability, X_3 is leverage, X_4 is debt-maturity, X_5 is working-capital-management, X_6 is cash-adequacy, X_7 is firm size, X_8 is capital investment,

X_9 is free cash, X_{10} is the tax rate, and X_{11} is financial distress. The findings show that Higgins SGR is more affected by variations in financial characteristics than Van Horne SGR. Higgins model gives a higher SGR than Van Horne model for more profitable firms. Firms with high leverage get even higher SGR in Van Horne model than Higgin's one. The result confirms that both Higgins and Van Horne's models are qualitatively and similar to common financial characteristics. The paper suggests that managers and researchers can preferably use both Higgins and Van Horne's models (Fonseka, García Ramos, & Tian, 2012).

2.8 Kijewska (2016)

Kijewska (2016) proposes that the growth of a company cannot be valued by itself. The growth must be compared to SGR and the ability to obtain funds that can finance the growth. The paper shows fundamental variables that management must take account of SGR. This is the model

$$SGR = b \times OPM \times CT \times FC \times FS \times TE$$

where *SGR* is the sustainable growth rate, *OPM* is operating profit margin, *CT* is capital turnover, *FC* is financial cost ratio, *FS* is the financial structure ratio, and *TE* is the tax effect ratio. The study took place in Polland on two companies from the mining and metallurgical sector. The findings show that in the surveyed companies, a drop in sales is followed by a decline in SGR (Kijewska, 2016).

2.9 Hartono and Utami (2016)

Hartono and Utami (2016) study the effect of SGR on current ratio, price-to-earnings ratio, and profitability ratio. The mean value of SGRs is then compared in IDX30 and Sri Kehati Index. The model is

$$Y_1 = \beta_0 + \beta_1 X_1 + \varepsilon$$
$$Y_2 = \beta_0 + \beta_1 X_2 + \varepsilon$$
$$Y_3 = \beta_0 + \beta_1 X_3 + \varepsilon$$
$$SGR = ROE \times b$$

where $Y_{1,\,2,\,3}$ are the *SGR*, β_0 is the intercept, $\beta_{1,\,2,\,3}$ are the coefficient of regression, and $X_{1,\,2,\,3}$ are the dependent variables (ROA, PER, CR), b is the retention rate of earnings, and ε is the error terms.

The findings show that in the IDX30 index, SGR has a positive and significant effect on ROA, insignificant negative effect on PER, and insignificant positive effect on CR. In Sri Kehati Index, SGR has a positive and significant effect on ROA and CR, negative and significant effect on PER (Hartono & Utami, 2016).

2.10 Arora, Kumar, and Verma (2018)

Arora, Kumar, and Verma (2018) try to develop two new formulas to calculate SGR. The ability of the model to explain SGR using the new variations of the model is also explained. This is the model

$$SGR = \left(\frac{BE_t}{BE_{t-1}}\right) - 1$$

where *SGR* is the sustainable growth rate and *BE* is the book-to-equity ratio.

The results show that four key ratios are robust in explaining the variations in SGR after adding new industry-specific factors in the model, like industrial growth and inflation. The net profit margin is the most vital driver toward SGR in the Indian manufacturing factor (Arora, Kumar, & Verma, 2018).

2.11 Mamilla (2019)

Mamilla (2019) tries to compare the actual growth rate (AGR) and the SGR, then investigate the independent variables on SGR. This is the model

$$AGR = ROA(1 - DPR)$$
$$SGR = ROE(1 - DPR)$$
$$SGR = \alpha_0 + b_1 DE + b_2 CR + b_3 ATR + b_4 LNA + b_5 TR + \varepsilon$$

where *AGR* is the actual growth rate, *ROA* is the return-on-asset ratio, *DPR* is dividend-payout-ratio, *SGR* is the sustainable growth rate, *DE* is the debt-to-equity ratio, *CR* is the current ratio, *ATR* is the asset-turnover-ratio, *LNA* is the natural log of assets, *TR* is the tax rate, and ε is the error term.

The findings show that firm size and debt-equity-ratio have a significant negative relationship with SGR. The study also identifies factors of firms' operating and financial structure that are important (Mamilla, 2019).

3. Methodology

SGR is the maximum annual percentage increase in sales that can be attained based on the target operating, debt, and dividend-payout-ratios. If actual growth exceeds the SGR, the firms must get extra funding into the company, either increase sales or debt level. On the other hand, if the SGR is above the actual growth, firms have extra money to invest or give to shareholders as dividends (Van Horne & Wachowicz, 2008).

3.1 Model

This paper uses the models that are used by Mamilla [2019] to calculate IGR and SGR

$$AGR = ROA(1 - DPR)$$
$$SGR = ROE(1 - DPR)$$

where *AGR* is the actual growth rate, *ROA* is the return-on-asset ratio, *DPR* is the dividend-payout-ratio, and *SGR* is the sustainable growth rate.

3.2 Data

This paper uses five firms of the financial sector in Indonesia's capital market. The firms are randomly picked that have at least ten years of active trading data from 2009, excluding the ones with the price of 50. The five firms are BBCA, BDMN, BMRI, BBNI, and BBRI. The annual financial income data are taken from the S&P website.

Figure 1
Sectors in Bursa Efek Indonesia

4. Analysis and Calculation

All of the ROAs, ROEs, and DRPs of the five firms are taken from the S&P websites, then all of them are compared. The results are shown in the graphic.

4.1 Calculation of AGR and SGR

This is the calculation of AGR and SGR from the five firms.

Table 1
The calculation of AGR and SGR

		2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
BBCA	**ROA**	2.6%	2.8%	3.1%	2.8%	3.0%	3.1%	3.1%	3.2%	3.3%	3.3%	3.3%
	ROE	26.6%	27.4%	28.4%	25.0%	24.6%	23.6%	21.8%	20.4%	19.1%	18.3%	17.5%
	DPR	50.1%	32.3%	25.6%	23.6%	20.1%	18.7%	20.9%	20.9%	22.2%	24.8%	30.6%
	AGR	1.30%	1.90%	2.31%	2.14%	2.40%	2.52%	2.45%	2.53%	2.57%	2.48%	2.29%
	SGR	13.27%	18.55%	21.13%	19.10%	19.66%	19.19%	17.24%	16.14%	14.86%	13.76%	12.15%
BDMN	**ROA**	1.6%	2.8%	2.6%	2.8%	2.4%	1.4%	1.3%	1.5%	1.9%	2.0%	2.0%
	ROE	11.9%	17.3%	15.4%	15.1%	13.8%	8.4%	7.4%	7.9%	9.0%	8.8%	8.9%
	DPR	58.2%	28.0%	32.6%	26.4%	29.8%	41.1%	34.0%	28.6%	27.0%	34.2%	35.5%

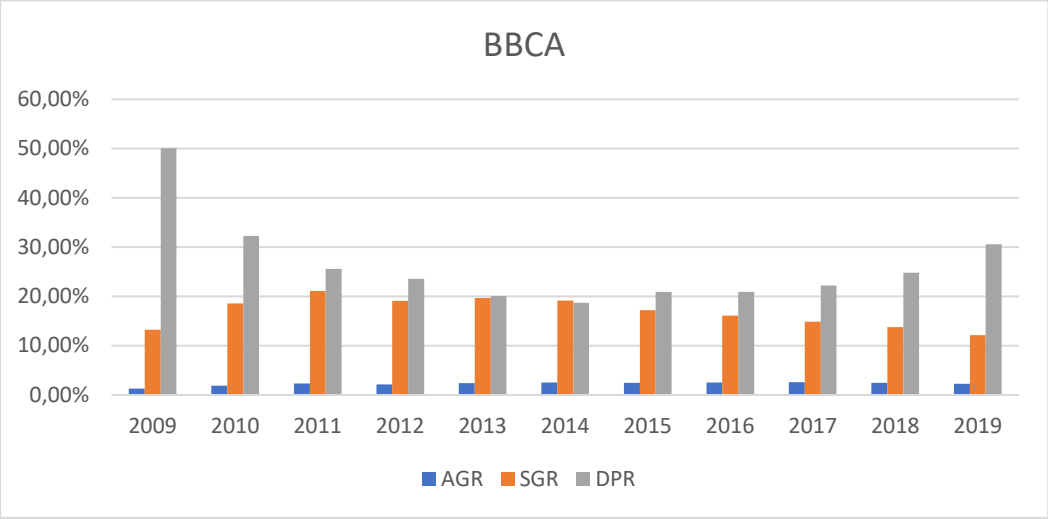
	AGR	0.67%	2.02%	1.75%	2.06%	1.68%	0.82%	0.86%	1.07%	1.39%	1.32%	1.29%
	SGR	4.97%	12.46%	10.38%	11.11%	9.69%	4.95%	4.88%	5.64%	6.57%	5.79%	5.74%
BMRI	**ROA**	1.9%	2.2%	2.5%	2.7%	2.8%	2.6%	2.4%	1.5%	2.0%	2.2%	2.3%
	ROE	21.9%	24.2%	24.2%	23.2%	22.9%	21.3%	18.9%	10.7%	13.3%	14.6%	14.4%
	DPR	31.6%	27.3%	23.0%	15.8%	25.6%	27.5%	24.4%	44.2%	30.1%	37.1%	41.0%
	AGR	1.30%	1.60%	1.93%	2.27%	2.08%	1.89%	1.81%	0.84%	1.40%	1.38%	1.36%
	SGR	14.98%	17.59%	18.63%	19.53%	17.04%	15.44%	14.29%	5.97%	9.30%	9.18%	8.50%
BBNI	**ROA**	1.2%	1.7%	2.1%	2.2%	2.5%	2.7%	2.0%	2.1%	2.1%	2.0%	1.9%
	ROE	14.4%	15.7%	16.4%	17.3%	19.9%	19.9%	13.1%	13.6%	14.5%	14.3%	13.2%
	DPR	6.9%	21.2%	21.1%	16.5%	23.3%	25.2%	29.7%	20.0%	29.1%	31.7%	24.4%
	AGR	1.12%	1.34%	1.66%	1.84%	1.92%	2.02%	1.41%	1.68%	1.49%	1.37%	1.44%
	SGR	13.41%	12.37%	12.94%	14.45%	15.26%	14.89%	9.21%	10.88%	10.28%	9.77%	9.98%
BBRI	**ROA**	2.6%	3.2%	3.5%	3.7%	3.6%	3.4%	3.0%	2.8%	2.7%	2.7%	2.5%
	ROE	29.5%	35.9%	34.9%	32.6%	29.6%	27.4%	24.1%	20.2%	18.4%	18.4%	17.5%
	DPR	36.3%	21.0%	18.3%	19.4%	26.0%	26.2%	28.6%	29.1%	36.2%	40.3%	47.1%
	AGR	1.66%	2.53%	2.86%	2.98%	2.66%	2.51%	2.14%	1.99%	1.72%	1.61%	1.32%
	SGR	18.79%	28.36%	28.51%	26.28%	21.90%	20.22%	17.21%	14.32%	11.74%	10.98%	9.26%

Based on the calculation in Table 1, all banks show their SGRs > AGRs, which means that all banks have extra funds for reinvestment or give to shareholders as dividends. By roughly looking at the data, all SGRs are getting smaller, which implies that the ability of firms to make a profit is getting weaker. It is a bad signal for the long term economy since the financial sector is one of the strongest pillars of economic in Indonesia.

4.2 Graphical Presentation of AGR and SGR

4.2.1 BBCA

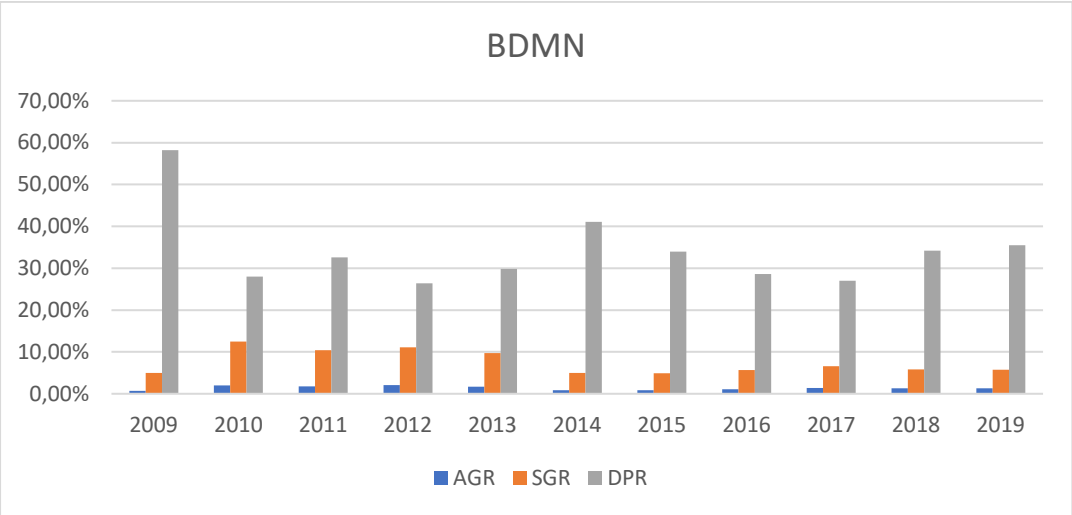
Figure 1
AGR/SGR of BBCA



The AGR of BBCA does not show any significant growth. Instead, the AGR keeps decreasing, slowly but sure. Meanwhile, since 2014 the SGR of BBCA is getting lower. The lowest point is at the end of the year 2019. On the contrary, the DPR since 2014 is getting bigger. The decrease of SGR in BBCA should have been followed by a reduction in DPR too.

4.2.2 BDMN

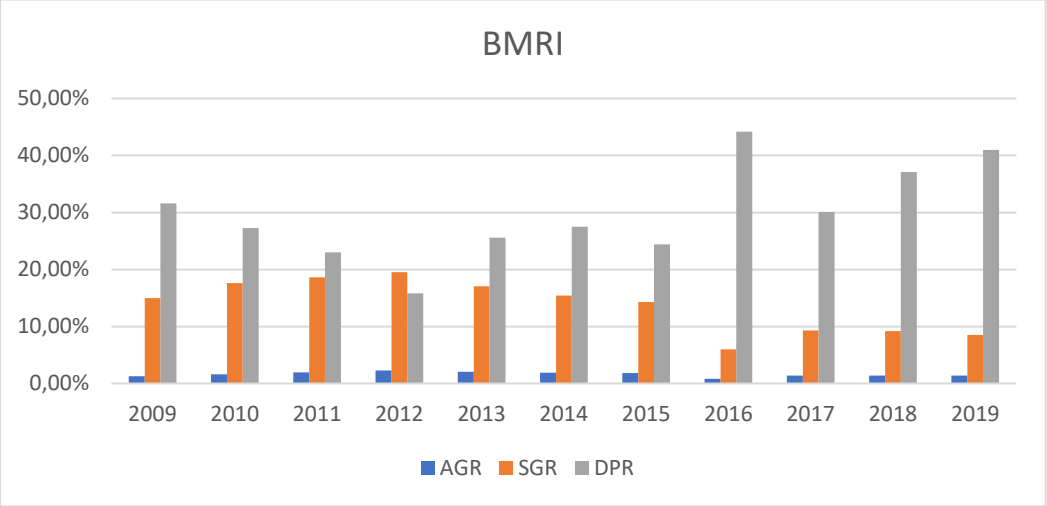
Figure 2
AGR/SGR of BDMN



The AGR of BDMN in 2019 is lower than its highest value in 2010 and 2012. In the year 2019, the AGR does not show any growth compares to 2018. Meanwhile, checking at the SGR value of BDMN is getting lower since 2017. The DPR of BDMN is getting higher since 2017. The decrease of SGR in BDMN should have been followed by a reduction of DPR too.

4.2.3 BMRI

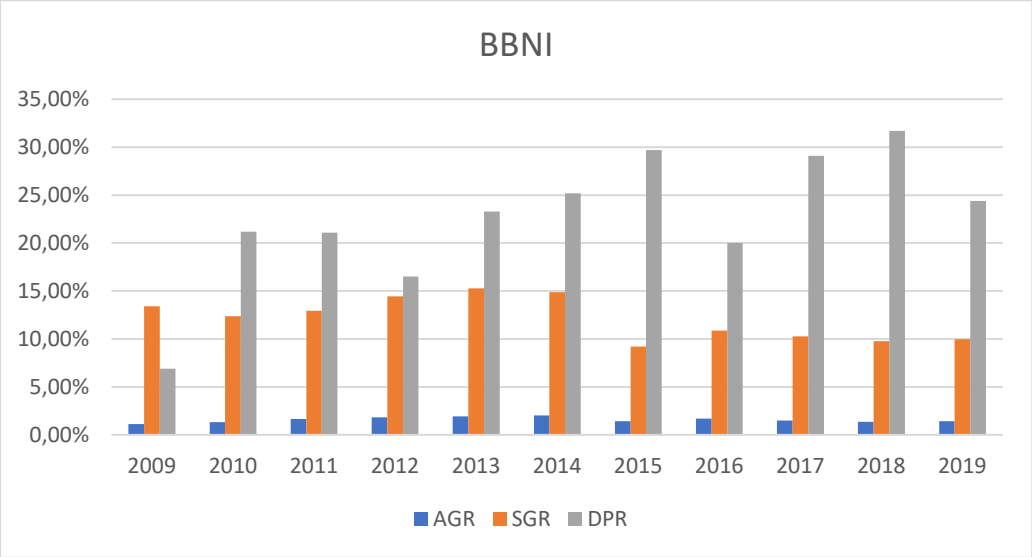
Figure 3
AGR/SGR of BMRI



The AGR of BMRI in 2019 is lower than its highest value in 2013. Then the AGR is increasing again from 2016 to 2019. In the year 2019, the SGR value of BDMN is getting lower since 2017, and it is even lower than its highest value in 2012. The decrease of SGR in BMRI should have been followed by a reduction of DPR too.

4.2.4 BBNI

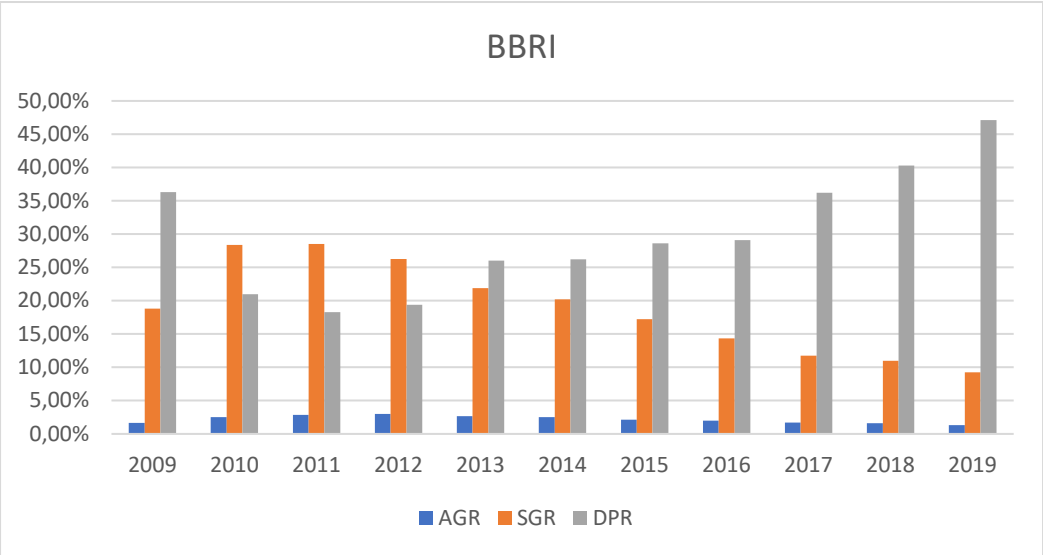
Figure 4
AGR/SGR of BBNI



The AGR of BBNI in 2019 is lower than its highest value in 2014. Then the AGR is fluctuating from 2016 to 2019. In the year 2019, the SGR value of BBNI is getting a bit higher since 2018, but it is still lower than its highest value in 2013. Even though the reduction of DPR already follows the decrease of SGR in BMRI, the DPR is still too high.

4.2.5 BBRI

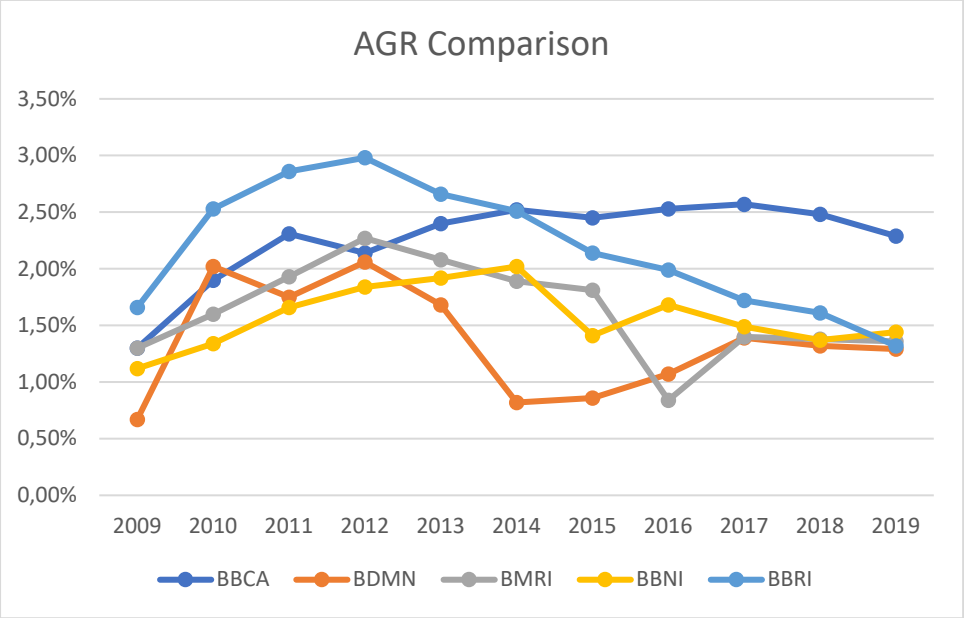
Figure 5
AGR/SGR of BBRI



The AGR of BBRI keeps on decreasing since 2012. The firm's growth is declining. Since 2011 the SGR of BBRI is getting lower. The lowest point of the SGR is in the year 2019. Surprisingly, the DPR since 2011 is getting bigger. The decrease of SGR in BBRI should have been followed by a reduction of DPR too.

4.3 AGR Comparison

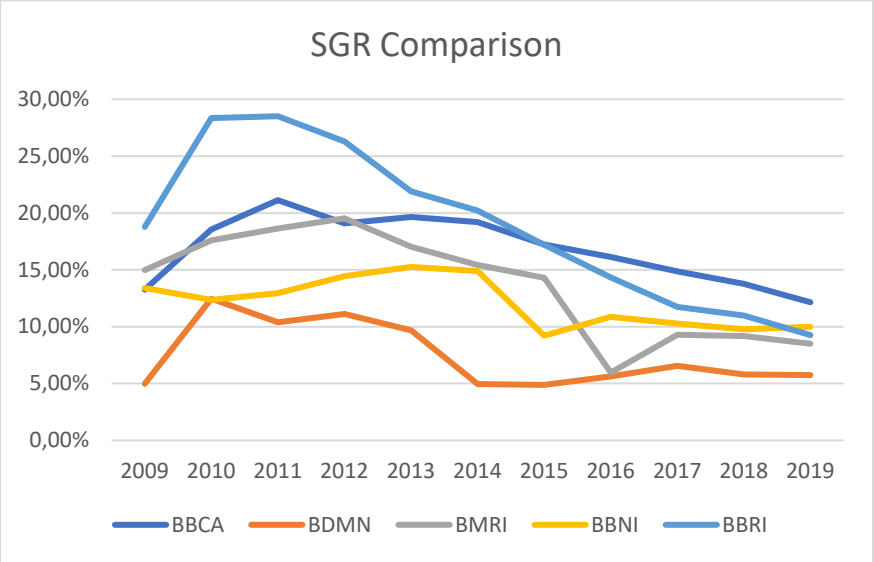
Figure 6
AGR comparison of five banks



The AGR comparison chart shows that BBCA has the most vigorous growth of five banks, while BBRI has the worst development. Currently, BBRI has lots of problems from the BRI Syariah and BRI Agro that affects the overall performance of BBRI. There are lots of hidden non-performing loan (NPL). Another challenge came from the acquisition of PT Danareksa Sekuritas during the end of 2018 .

4.4 SGR Comparison

Figure 7
SGR comparison of five banks



All five banks show declining SGR over ten years, while the DRP is increasing. This fact is quite shocking since, usually, with the decreasing of SGR, the DPR should decrease too. The possible explanation is banks do not have other places for investments. Then they just give the profit with shareholders.

5. Conclusion and Suggestion

SGR is the maximum annual percentage increase in sales that can be attained based on the target operating, debt, and dividend-payout-ratios. If actual growth exceeds the SGR, the firms must get extra funding into the company, either increase sales or debt level. On the other hand, if the SGR is above the actual growth, firms have extra money to invest or give to shareholders as dividends (Van Horne & Wachowicz, 2008).

The calculation and comparison of AGR, SGR, and DPR of five banks in Indonesia show that with a slow growth rate, even though most SGR values are declining, the DRP values are increasing. The possible explanation is banks do not have other places for investments. Then they just give the profit with shareholders. However, the suggestion needs further study with a more thorough model.

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