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Effect of leverage, company growth and operating cash flow on bond ratings with firm size as moderation

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ABSTRACT

This study aims to analyze the effect of leverage, company growth and operating cash flow on bond ratings with firm size as a moderating variable. The type of research used is quantitative. Applies data from financial sector companies listed on the Indonesian Stock Exchange. Data collection method using purposive sampling method. There are 18 company objects during the 2016-2021 period so that 108 samples were obtained. The data analysis method uses interaction analysis, namely moderation regression analysis with the using of SmartPLS 3. The results of this research show that leverage has a negative impact on bond ratings. Company growth and operating cash flow have no impact on bond ratings. Firm size has a positive impact on bond ratings. Firm size can moderate the relationship between leverage and bond ratings. Firm size cannot moderate the relationship between company growth and bond ratings. Firm size cannot moderate the relationship between operating cash flows and bond ratings.

INTRODUCTION

Economic growth and globalization have an impact on increasing business competition. So the company must be able to enhance the value of the company. One way to increase the value of the company is by doing business development. Especially businesses in the financial sector. The financial sector is one of the drivers of economic growth (Rasbin et al., 2015). In Indonesia, the financial sector consists of several sub-sectors. Then the financial industry sub-sectors include banking, financing institutions, insurance, securities companies, pension funds and other financial service institutions (Otoritas Jasa Keuangan, 2020). Therefore, to be able to develop a business requires funds. In order to be able to get funds without having to go into debt and issue new shares is to issue bonds (Hakim & Putra, 2019).

A bond is a type of bond that is traded on the capital markets. The Indonesian Stock Exchange (IDX) defines bonds as a traded medium- to long-term liabilities instrument in which the publisher commits to pay coupons in the form of interest and repay the principal to the purchaser for a specified period of time, contains promises and specified time of binding (Bursa Efek Indonesia, 2021). Commercial bonds are issued by companies to evade risk. When the company is incapable to pay interest on its bonds, the bonds can still be transferred into shares or other forms (Hakim & Putra, 2019). This transfer mechanism is pursued by negotiating with the issuer to bond investors in the form of coupons that are paid periodically (Hakim & Putra, 2019).

Based on the issuer, bonds are grouped into four namely corporate bonds, government bonds, green bonds and local government bonds. Bonds when viewed from the industrial sector on the Indonesia Stock Exchange (IDX) are dominated by businesses in the financial sector (Bursa Efek Indonesia, 2021). Many companies in this sector issue bonds on the Indonesia Stock Exchange (IDX) with the aim of obtaining funding for corporate cash. Funding from the investor is needed for the sustainability of the company's activities (Pamungkas & Herawaty, 2021).

Bond growth in Indonesia is currently increasing. This can be seen from the value of the Indonesian bond index which is increasing every year (Otoritas Jasa Keuangan, 2020). If predicted, bonds have the potential to continue to increase in the future.

Based on the previous explanation, in general it can be said that the increase in investment in bonds has continued to occur in the last few years. This shows that investments in bonds are increasingly favored by investors. Investors who tend to avoid investment risk are suitable for investing in bonds

(Pamungkas & Herawaty, 2021). Bonds are considered safer than stock investments. However, investing in bonds also has risks, one of which is if the company is unable to refund the principal of every bonds and the coupon of the bonds.

Before being offered to investors, bonds must be rated by a bond rating agency or agency. Bond rating agency is an independent institution that provides risk rating information, one of which is the security of bonds as an indication of the extent to which a bond is secure for investors (Dewi & Mahardika, 2019). Bond security is indicated by the company's ability to pay bond interest and pay off the principal price of the bond. So that investors can use the services of bond rating agencies to obtain bond rating information. This rating is carried out to measure the company's performance to enable bond rating agencies to determine whether the bond is investable (Dewi & Mahardika, 2019).

One of the bond rating agencies, namely PT. Pefindo. Bonds of PT. Pefindo provides information on an objective, independent and accountable credit risk rating for the issuance of bonds traded to the public at large (Kepramareni et al., 2021).

Bond ratings are generally fall into two classification: investment grade (AAA, AA, A, BBB) and non-investment grade (BB, B, CCC, D) (Pardosi & Budyastuti, 2021). Bonds rated in the investment rating category announce that the bond is accessible for investment. In general, bonds that have an investment grade rating are the main choice for investors who want to find safe investments (Linawati & Wibowo, 2020). Meanwhile, bonds that are classified as non-investment grade have a high risk of failing to pay off the principal and coupon bonds (Hamid et al., 2019). Bond issuing businesses that are belonging in the non-investment grade ratings usually tend to find it difficult to get funding (Hafidania & Hakiman, 2020). However, there is a phenomenon in which a company that issues bonds and enters the investment grade rating can experience the risk of default. For example, the case of failure to pay a company that applicative to investment grade category is the underpayment of interest on Medium Term Notes (MTN) of PT Sunprima Nusantara Financing (SNP Finance) for the period December 2015 to November 2017, even though it has already occupied the A- predicate from Pefindo. Then in March 2018, the title of Medium Term Notes (MTN) was increased again to predicate A. However, in May 2018 Pefindo lowered its predicate twice in a row. The first to become a CCC predicate occurred in May 2018. Then the second, in the same month, became an elementary school. The decline in the predicate was due to the obligor's failure to pay interest on Medium Term Notes (MTN) (Yudistira, 2018).

The occurrence of defaults that occur is generally caused by non-disclosure of material information or facts (Kaltsum & Anggraini, 2021). Issuers who issue bonds should provide true material information or facts. As a result, the ratings of bonds issued by bond rating company are distorted because the company is not publicly available about material information within the company. In connection with the example case, there are questions that arise, namely what factors are suspected to have an influencing a bond's rating by a rating agency to the bond issuing company (Hidayat, 2018).

In Indonesia, research on bond ratings has been carried out by many previous researchers. The determinants that are predicted to affect bond ratings include leverage (Pamungkas & Herawaty, 2021), company growth (Rianto et al., 2021) and operating cash flow (Kepramareni et al., 2021). As well as the size of the company as a moderation (Dewi & Suaryana, 2017).

Leverage is a form of financial ratio that describes the company's debt relationship contained in capital expenditures as well as company assets as a source of funds intended to increase the company's potential profits (Darmawan et al., 2020). This ratio is used to degree how tons a agency makes use of its debt to finance its investments. A higher ratio means most assets are financed by liabilities. This condition causes the company to be faced with the risk of default or low bond ratings (Kepramareni et al., 2021). This suggests that companies with large amounts of debt tend to be less able to repay their bonds. Therefore, the lower the leverage of company, the higher the valuation of company (Kepramareni et al., 2021). Many companies use leverage to accelerate the value of the company, this is due to the benefits of leverage, namely it can reduce the tax burden charged to the company (Ramdani & Iswanaji, 2018). And than previous research results by Hidayat (2018), Rivandi & Gustiyani (2021), Pamungkas & Herawaty. (2021), Kaltsum & Anggraini (2021), Rialdy (2021), Setiawati et al. (2019), Kurniawan & Suwarti (2017), Suprapto & Aini (2019), Sulistiani & Meutia (2021), Anom (2021), Hafidania & Hakiman (2020), Tan (2018), Ruspriono & Santoso Marsoem (2021) and Felicia & Sufiyati (2020) which shows that the leverage has a significant and negative impact on bond ratings. But it is different with the research conducted by Ariansyah & Oetomo (2018), Darmawan et al. (2020),

Azani et al. (2017), Azani & Khairunnisa (2019), Ni'mah et al. (2020), Hung et al. (2021), Dwitayanti (2018) and Pardosi & Budyastuti (2021) shows that the leverage has a significant and positive impact on bond ratings. Then another research conducted by Pratama & Andhitiyara (2020), Pramesti (2022), Parulian & Suprihatin (2020), Fachreza et al. (2020), Permana et al. (2020), Faizah (2019), Safitri et al. (2020), Pradnyawati & Widhiastuti (2022), Kepramareni et al. (2021), Barus & Tarihoran (2020), Linawati & Wibowo (2020), Arifian et al. (2020), Hafiz et al. (2021), Utami et al. (2017), Hamid et al. (2019), Darma & Sulistiyani (2019), Setiawati et al. (2020), Aji et al. (2019), Kumala Sari et al. (2018), Setiawan et al. (2022), Kurniawan et al. (2019), Rahmah et al. (2021), Pangestuti et al. (2022), Dewi & Mahardika (2019) dan Ramdani & Iswanaji (2018) said leverage doesn't affect on bond ratings.

Company growth is the ability of a company to increase the size of its business through increased assets, sales, or profits (Rianto et al., 2021). This growth indicator represents economic growth and ability of the company to maintain its economic position within the industry. The company's growth is also highly expected by parties inside the company and outside the company because it can provide a positive aspect for them. All parties, both internal and external, see the company's growth often from the company's financial condition. Generally, a good company growth will give an investment grade bond rating (Dewi & Suaryana, 2017). The higher the growth rate of the company, the higher the bond rating. In previous studies conducted by Dewi & Suaryana (2017) says corporate growth has a positive and significant impact on bond ratings. However, another study conducted by Azani et al. (2017), Azani & Khairunnisa (2019) dan Wendy & Sianturi (2017) shows that the company's growth has a negative and significant impact on bond ratings. Then another research conducted by Rianto et al. (2021), Dewi & Mahardika (2019), Ni'mah et al. (2020), Ismayana et al. (2019), Hafidania & Hakiman (2020) and Hakim & Putra (2019) shows mixed results that corporate growth has no impact on bond ratings.

Operating cash flow is the cash flow from operating the company (Kepramareni et al., 2021). Operating cash flow is one of the references for investors in choosing bonds, because operating cash flow describes the ability of company to generate cash from its operating activities. The higher the operating cash flow, the better the company's performance and is predicted to generate better profits in the coming period and can attract investors (Hakim & Putra, 2019). The level of positive operating cash flow indirectly reflects the ability of the bond issuer to meet its commitments, leaving the potential for bond ratings to become investment grade (Kepramareni et al., 2021). If the operating cash flow of company is positive, it shows the good ability of company to generate cash from the company's operating activities, so that the bond rating obtained by the company is higher (Pradnyawati & Widhiastuti, 2022). In previous research conducted by Hakim & Putra (2019) stated that operating cash flow had a significant impact on bond ratings. However, a result of studies conducted by Kepramareni et al. (2021), Pardosi & Budyastuti (2021) dan Wendy & Sianturi (2017) shows different results, namely operating cash flow has no impact on bond ratings.

Firm size is a measure of how big or small a company is (Fachreza et al., 2020). This can be measured by converting the total assets of a company into the form of a natural logarithm (Suharmadi & Suripto, 2021). Asset express that the asset is used in the company's operating activities. The higher the number of assets, the larger the company. The greater the assets of company, the greater the capital invested in company (Darmawan et al., 2020). An enhance in assets followed by an enhance in operating results will further enhance the confidence of outsiders in the company, the possibility that creditors or investors are interested in investing capital in one company (Fachreza et al., 2020). In making investments, creditors or investors are certainly more interested in investing in companies that are stable and able to pay off their bond obligations in the form of principal payments and bond coupons tersebut (Utami et al., 2017). Large businesses are considered less risky than small businesses (Darmawan et al., 2020). Company size also has a relationship with the level of risk of bankruptcy and failure in this case can affect bond ratings (Rialdy, 2021). In previous research conducted Hafidania & Hakiman (2020), Darma & Sulistiyani (2019), Sulistiani & Meutia (2021), Hamid et al. (2019), Suprapto & Aini (2019), Felicia & Sufiyati (2020), Barus & Tarihoran (2020), Dewi & Mahardika (2019), Rianto et al. (2021), Safitri et al. (2020), Permana et al. (2020), Suharmadi & Suripto (2021) dan Parulian & Suprihatin (2020) states that firm size has a positive and significant effect on bond ratings. Then the results of other studies that show different results based on research from Kumala Sari et al. (2018), Setiawati et al. (2020), Hafiz et al (2021), Rialdy (2021), Kaltsum & Anggraini (2021), Darmawan et al. (2020), Utami et al. (2021), Fachreza et al. (2020), Ariansyah & Oetomo (2018) dan Pratama & Andhitiyara (2020) it

says company size does not significantly impact bond ratings. Furthermore, research conducted by Dewi & Suaryana (2017) shows that company size can moderate the impact of corporate growth on bond ratings.

This study was conducted with the aim of examining the effect caused by leverage, firm growth and operating cash flow on bond ratings with firm size as the moderating variable. As well as providing explanations to investors and companies regarding what factors affect the ups and downs of bond ratings.

The practical benefit of this research is for businesses as consideration for applying the variables of this study to help improve bond ratings and as consideration for obligors to evaluate and improve bond payment performance in the future. And than the results of this research are intended to serve as a benchmark or reference for investors in making investment decisions in fixed income. Furthermore, theoretically as literacy material for further researchers who will conduct further research on bond ratings.

Based on several previous studies, where there are discontinuities and there are also some differences from the results of studies or research gaps, this becomes the background for re-examination of the factors that impact on bond ratings. Then the author will re-examine the factors that impact on bond ratings.

This research uses signal theory. Signal theory explains that the sender (the owner of the information) gives a signal or signals in the form of information reflecting the capacity of the company that is beneficial to the acceptor (the investor) (Handoko, 2021). Signals theory explains that a ability of a company to communicate financial statement information to external parties is related to the existence of information asymmetries among senior management and an outside party whose management have place well informed and knows the company's future prospects. This theory is designed to allow investors to develop the capital needed by the company to guide the future direction of the company's prospects. Signal theory explains why companies want to share balance sheet information with outsiders, one of which is for the purposes of the capital market (Mariani & Suryani, 2018). The assumption behind signal theory is that the information received by each party is not the same. To put it another way, signal theory is related to information asymmetry. Information asymmetry between business management and people interested in information is proven by signal theory. For this reason, managers must provide interested parties with information through the issuance of financial information. Signals theory proposes ways for companies to send signals to users of their financial statements. This signal takes the form of details about what the management had to do to satisfy the wishes of the owner (Mayangsari, 2018).

Leverage is the source of debt capital that a company applies to account assets different than equity or equity funds (Dwitayanti, 2018). In this study, Leverage is used as an independent variable. The leverage has a negative impact on bond ratings (Pamungkas & Herawaty, 2021). This means that the higher the leverage, the lower the bond rating. Calculations using the debt-to-equity ratio (DER), it is shown that the higher the debt-to-equity ratio (DER), the higher the possibility of the company not being able to pay or fulfill its obligations and the risk of company bankruptcy will be high (Darmawan et al., 2020). The high risk of bankruptcy greatly affects the bonds of the company (Anom, 2021). Effect of leverage on bond ratings shows a negative effect on bond ratings. This indicates that companies with high leverage tend to have little capacity to meet their bonds. Based on previous studies regarding the determinants of bond ratings using leverage, it shows that the leverage has a negative and significant impact on bond ratings (Hidayat, 2018), (Rivandi & Gustiyani, 2021), (Pamungkas & Herawaty, 2021), (Kaltsum & Anggraini, 2021), (Rialdy, 2021), (Setiawati et al., 2019), (Kurniawan & Suwarti, 2017), (Suprapto & Aini, 2019), (Sulistiani & Meutia, 2021), (Anom, 2021), (Hafidania & Hakiman, 2020), (Tan, 2018), (Ruspriono & Santoso Marsoem, 2021) and (Felicia & Sufiyati, 2020). So the results of hypothesis testing one (H1) prove that leverage has a significant and negative impact on bond ratings.

Company growth is the company's ability to enhance the size of the company through increasing assets, sales or profits (Rianto et al., 2021). Company growth describes and becomes an indicator for the success of an entity. The growth of a company can be seen from the growth of net profit (Sulbahri, 2020). The higher the increase in net income indicates that the higher the increase in company growth. Generally, a good company growth will give an investment grade bond rating (Dewi & Suaryana, 2017). Companies with high year-on-year growth rates are more likely to have high bond ratings than companies with low growth rates, because companies with high growth rates are more

attractive to investors (Azani et al., 2017). The higher the growth grade of the companies, the higher the bond rating. According to previous research, it is stated that company growth has a positive and significant impact on bond ratings (Dewi & Suaryana, 2017). So the outcomes of the second hypothesis test (H2) attest that the company's growth has a positive and significant impact on the bond rating.

Operating cash flow is the cash flow from operating the company (Kepramareni et al., 2021). Operating cash flow is one of the references for investors in choosing bonds, because operating cash flow describes the ability of company to generate cash from its operating activities. The higher the operating cash flow, the better the company's performance and is predicted to generate better profits in the coming period and can attract investors (Hakim & Putra, 2019). The amount of positive operating cash flow indirectly shows the ability of the bond issuing company to meet its obligations so that the potential for bond ratings to become investment grade is higher (Kepramareni et al., 2021). If the company's operating cash flow is positive, it shows the good ability of company to generate cash from the company's operating activities, so that the bond rating obtained by the company is higher (Pradnyawati & Widhiastuti, 2022). So the outcomes of the third hypothesis test (H3) prove that the Operating cash flow has a significant and positive impact on bond ratings.

Company size is a measure of how big or small a company is (Fachreza et al., 2020). This can be measured by transforming the total assets of company to the natural logarithm (Suharmadi & Suripto, 2021). Asset indicates that the asset is used in the company's operating activities. The higher the number of assets, the larger the company. The greater the wealth, the greater the capital invested (Darmawan et al., 2020). An enhance in assets followed by an enhance in operating results will further enhance the confidence of outsiders in the company, the possibility that creditors or investors will be extracted in investing their funds in the company (Fachreza et al., 2020). In making investments, creditors or investors are certainly more interested in investing in companies that are stable and able to pay off their bond obligations in the form of principal payments and bond coupons (Utami et al., 2021). Large companies are considered to have less risk than smaller companies (Darmawan et al., 2020). Company size also has a relationship with the level of risk of bankruptcy and failure in this case can affect bond ratings (Rialdy, 2021). This is in accordance with the Signaling Theory which states that the size of the company can give a good signal to investors, the larger the size of the company, the higher the bond rating, the better (Suprapto & Aini, 2019). Based on previous studies, firm size has a positive and significant impact on bond ratings (Hafidania & Hakiman, 2020), (Darma & Sulistiyani, 2019), (Sulistiani & Meutia, 2021), (Hamid et al., 2019), (Suprapto & Aini, 2019), (Felicia & Sufiyati, 2020), (Barus & Tarihoran, 2020), (Dewi & Mahardika, 2019), (Rianto et al., 2021), (Safitri et al., 2020), (Permana et al., 2020), (Suharmadi & Suripto, 2021) and (Parulian & Suprihatin, 2020). Thus, the results of testing the fourth hypothesis (H4) show that firm size has a positive and significant impact on bond ratings.

Firm size has a relationship with the level of risk of bankruptcy and failure in this case can affect bond ratings (Rialdy, 2021). The bigger the company and the higher the bond rating, the better (Suprapto & Aini, 2019). Based on previous studies, firm size has a positive and significant impact on bond ratings (Hafidania & Hakiman, 2020), (Darma & Sulistiyani, 2019), (Sulistiani & Meutia, 2021), (Hamid et al., 2019), (Suprapto & Aini, 2019), (Felicia & Sufiyati, 2020), (Barus & Tarihoran, 2020), (Dewi & Mahardika, 2019), (Rianto et al., 2021), (Safitri et al., 2020), (Permana et al., 2020), (Suharmadi & Suripto, 2021) and (Parulian & Suprihatin, 2020). Leverage is then used to measure how much debt the company uses to finance its investments. This suggests that highly leveraged companies tend to have little capacity to meet their bonds. Therefore, the lower the leverage of the company, the higher the valuation of the company (Kepramareni et al., 2021). This will affect the bond rating. Based on previous studies regarding the determinants of bond ratings using leverage, it shows that leverage has a negative and significant impact on bond ratings (Hidayat, 2018), (Rivandi & Gustiyani, 2021), (Pamungkas & Herawaty, 2021), (Kaltsum & Anggraini, 2021), (Rialdy, 2021), (Setiawati et al., 2019), (Kurniawan & Suwarti, 2017), (Suprapto & Aini, 2019), (Sulistiani & Meutia, 2021), (Anom, 2021), (Hafidania & Hakiman, 2020), (Tan, 2018), (Ruspriono & Santoso Marsoem, 2021) and (Felicia & Sufiyati, 2020). Therefore, it can be seen that leverage and company size have a strong correlation. That is, the larger the company, the greater the likelihood or ability of the company to pay its bonds (Dewi & Suaryana, 2017). Then the results of hypothesis testing five (H5) prove that firm size can moderate the impact of leverage on bond ratings.

A larger company size indicates the ability of company to dominate the market and better credibility so that it can improve bond ratings (Dewi & Suaryana, 2017). With the ability of company to dominate the market, the company can create market value that can increase company growth. Growing businesses tend to increase the size of the business. Large businesses are considered to have less risk than smaller businesses (Darmawan et al., 2020). Based on previous studies, firm size has a positive and significant impact on bond ratings (Hafidania & Hakiman, 2020), (Darma & Sulistiyani, 2019), (Sulistiani & Meutia, 2021), (Hamid et al., 2019), (Suprapto & Aini, 2019), (Felicia & Sufiyati, 2020), (Barus & Tarihoran, 2020), (Dewi & Mahardika, 2019), (Rianto et al., 2021), (Safitri et al., 2020), (Permana et al., 2020), (Suharmadi & Suripto, 2021) and (Parulian & Suprihatin, 2020). When the company can increase the growth of the company, the size of the company is said to be large, so that it increasing the company's bond rating. For a large company, reinforce the impact of company growth on the company's bond rating. According to previous research, corporate growth is said to have a positive and significant impact on bond ratings (Dewi & Suaryana, 2017). So it can be seen that company size and company growth have a strong correlation. This means that the greater a company's growth, the greater the company's potential or ability to increase the size of the company. Thus, the results of the test of hypothesis six (H6) prove that firm size can moderate the impact of firm growth on bond ratings.

Companies that are classified as large have a higher operating cash flow than companies that are classified as small. So that operating cash flow becomes one of the references for investors in choosing bonds. This is because large companies have positive cash flows. Therefore, it has good long-term prospects, good enterprise stability, and better earning power make profits compared to small enterprises. That is, the larger the company, the greater the positive operating cash flow and the better the company's performance. This concerns the company's highest bond rating (Pradnyawati & Widhiastuti, 2022). According to previous research, firm size has a positive and significant impact on bond ratings (Hafidania & Hakiman, 2020), (Darma & Sulistiyani, 2019), (Sulistiani & Meutia, 2021), (Hamid et al., 2019), (Suprapto & Aini, 2019), (Felicia & Sufiyati, 2020), (Barus & Tarihoran, 2020), (Dewi & Mahardika, 2019), (Rianto et al., 2021), (Safitri et al., 2020), (Permana et al., 2020), (Suharmadi & Suripto, 2021) dan (Parulian & Suprihatin, 2020). So the results of hypothesis testing seven (H7) prove that firm size is able to moderate the impact of operating cash flow on bond ratings.

RESEARCH METHODS

In this study using quantitative research methods. The reason for using this type of quantitative research is because this type of research is a method that aims to explain the influence between one variable and another, or how one variable affects other variables (Sugiyono, 2016).

The population that is the object of this research are companies in the financial sector listed on the Indonesia Stock Exchange (IDX) for the 2016–2021 observation period. The research population consisted of 94 companies, consisting of 4 sub-sectors including 46 banking, 17 financing, 15 securities companies, and 16 insurance companies, then selected into several samples so that it became easier for researchers to conduct research.

The sample was selected using purposive sampling technique. The criteria for determining the sample in this study include: (1) Companies that are listed on the Indonesia Stock Exchange and have never experienced delisting in the period 2016-2021. (2) The Company issues financial statements as of December 31 in rupiah currency. (3) The annual financial statements selected are those financial statements of companies that issue bonds and are rated by PT. Pefindo. (4) Financial sector corporate companies whose bonds are still outstanding in 2016-2021. (5) Financial sector corporations that did not experience negative profit (loss) in the research period.

Based on the research population consisting of 94 companies, there were 8 companies that experienced negative profits (losses) and there were 68 companies that did not issue bonds during the observation period rated by PT Pefindo. So there are as many as 18 samples of companies used in this study. So that 108 samples data were obtained.

Then this research uses secondary data obtained from the annual financial statements of companies in the financial sector listed on the Indonesia Stock Exchange (IDX) during the 2016-2021 observation period. As well as a rating report on corporate bonds in the financial sector rated by PT. Pefindo during the observation period.

Bond Rating

Bond rating is a comprehensive review of a company's creditworthiness in meeting all of its financial obligations (Pefindo, 2020). Information released by rating agencies will make it easier for investors to choose the right bond securities (Setiawati et al., 2020). The following is the bond rating used by PT Pefindo:

Table 1. Bond Rating

No	Bond Rating	Score	No	Bond Rating	Score
1	idAAA	18	10	idBBB-	9
2	idAA+	17	11	idBB+	8
3	idAA	16	12	idBB	7
4	idAA-	15	13	idBB-	6
5	idA+	14	14	idB+	5
6	idA	13	15	idB	4
7	idA-	12	16	idB-	3
8	idBBB+	11	17	idC	2
9	idBBB	10	18	idD	1

Source: Pefindo (2020)

Leverage

Leverage is a financial measure that represents a company's existing liability in capital expenditures and corporate assets as a source of funds designed to increase the company's potential profits (Darmawan et al., 2020). This ratio is used to measure a company's leverage to raise investment funds. The ratio used in this study is the DER (Debt to Equity Ratio) (Hafidania & Hakiman, 2020).

$$\boldsymbol{DER = \frac{Total\ Liability}{Total\ Equity}} \text{..... (1)}$$

Company Growth

Company growth is the ability of a company to increase the size of its business through increased assets, sales, or profits (Rianto et al., 2021). In general, the better the growth of the company, the better the bond rating will be (Hafidania & Hakiman, 2020). Company growth in this research is proxied by net profit (Sulbahri, 2020).

$$\boldsymbol{Growth} = \frac{\text{Net profit for the year} - \text{Net profit for the previous year}}{\text{Previous year's net profit}} \text{..... (2)}$$

Operating Cash Flow

Operational cash flow is cash flow that comes from the company's operating activities (Kepramareni et al., 2021). Operating cash flow in this research is represented by operating cash ratio (Hidayat et al., 2020).

$$\boldsymbol{Operating\ Cash\ Flow\ Ratio} = \frac{\text{Operating Cash Flow}}{\text{Total Liability}} \text{..... (3)}$$

Firm Size

Firm size is a measure that can be used to categorize Firm size in a number of ways, including: total assets, log size, market cap (Rianto et al., 2021). This can be measured by transforming the company's total assets to the natural logarithm (Suharmadi & Suripto, 2021). Firm size in this study is determined by total assets (Sulistiani & Meutia, 2021).

Company Size = Ln (Total Assets)..... (4)

Data analysis technique

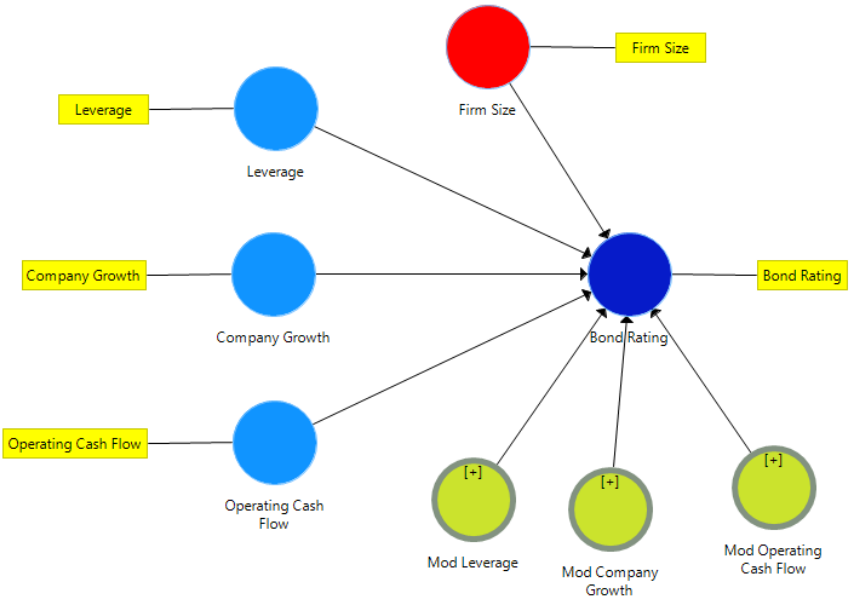
This study uses SEM analysis based on variate, namely SEM based on Partial Least Square. This Partial Least Square-based SEM analysis does not require many very strict requirements such as starting from the adequacy of the number of samples, data measurement scale, model fit, and fulfilling other assumptions such as normality, linearity, and multicollinearity (Muhson, 2022). To get data that meets all these requirements is often difficult to fulfill. But the resulting model is reliable enough to use

digunakan (Hamid & Anwar, 2019). One of the popular programs used is SmartPLS. This research uses the SmartPLS 3 program.

The process of testing the hypothesis with SmartPLS 3 is as follows: (1) Testing the quality of the measurement model (PLS algorithm) and (2) testing the hypothesis (bootstrapping).

The phases of the interpretation of the results of the SmartPLS analysis include 3 phases, namely: (1) The external model testing phase is the measurement model testing phase and is intended to test the adequacy of indicators and structures. (2) a goodness-of-fit model testing phase aimed at testing the predictive power of the model and the feasibility of the model; (3) The test phase of the internal model serves to test the significance of the effect of exogenous variables on endogenous variables.

Research path diagram using SmartPLS



Picture 1. Path Diagram That Has Been Designed

Hipotesis

H1: Leverage has a negative and significant effect on bond ratings.
H2 : Company growth has a positive and significant effect on bond ratings.
H3 : Operating cash flow has a positive and significant effect on the Bond rating
H4 : Firm size has a positive and significant effect on bond ratings.
H5 : Firm size is able to moderate the effect of leverage on bond ratings.
H6 : Firm size is able to moderate the effect of firm growth on bond ratings.
H7 : Firm size is able to moderate the effect of operating cash flow on bond ratings.

RESULTS AND DISCUSSION

Descriptive statistics used in this research include minimum, maximum, mean, and standard deviation values for each variable in the research. The descriptive statistics result is:

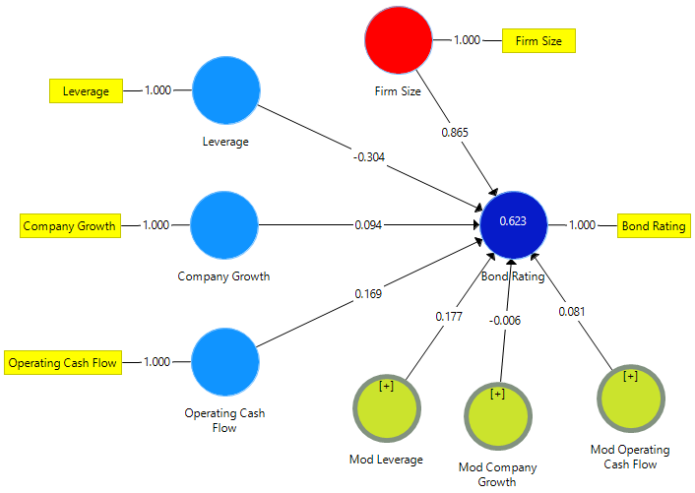
Table 2. Descriptive Data Analysis

	No.	mean	median	Min	Max	Standard Deviation
Bond Rating	1	16,037	18	11	18	2,361
Leverage	2	5.795	5.591	0.482	16,079	2,955
Company Growth	3	0.217	0.123	-0.925	6.657	0.883
Operating Cash Flow	4	0.061	0.031	-0.471	0.912	0.170
Firm Size	5	32,519	32,786	28,799	35.084	1,592

Validity Test

Evaluation of the Outer Model of Partial Least Square (PLS)

When evaluating outer models using data analysis techniques in SmartPLS, there is: convergent validity.



Picture 2. Variable Measurement with Outer Loadings

Convergent Validity

Table 3. Convergent Validity (Outer Loading) Values

	Lev	Growth	Cash Flow	Bond Rating	Size	Lev*Size	Growth*Size	Cash Flow* Size
Lev	1							
Lev*Size						1.212		
Growth		1						
Growth*Size							0.853	
Cash Flow			1					
Cash Flow* Size								1.826
Bond Rating				1				
Size					1			

The loading factor value for each indicator of each variable has a loading factor value greater than 0.7. This means that each variable has a good convergent validity.

Inner Model Assessment Partial Least Square (PLS), measured by Q-Square's predicted relevance value, measures how well the observations are produced by the model and the estimated parameters. Goodness tests use predicted relevance values.

The adjusted R-squared value is a measure of the proportion of variation in the value of the affected variable (endogenous) that can be explained by the affected variable (exogenous). This helps to see if the model is good or bad. The value of Adjusted R Square has several criteria, among others, 0.75 model is said to be substantial (strong), 0.50 model is said to be moderate (moderate), and 0.25 model is said to be weak (Sugiyono, 2016). Below are the results of the Adjusted R-Square analysis.

Table 4. Adjusted R Square Analysis Results

	R Square	Adjusted R Square
Bond rating	0.623	0.596

It can be seen that the R Square value is 0.623 and the Adjusted R Square value is 0.596. With the Adjusted R Square value of 0.596, it shows that the ability of the leverage, company growth and operating cash flow as well as the firm size as a moderator in explaining bond rating is 59.6%. This

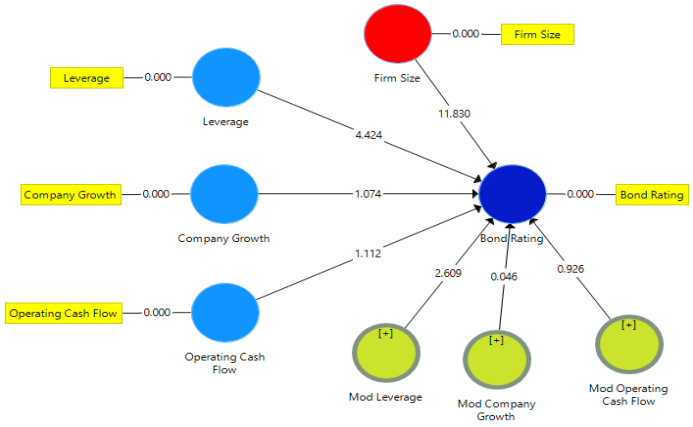
value can be classified as a moderate model (medium). While 40.4% are explained by other variables not considered in this research.

The Goodness of fit model testing phase aims to test the predictive power of the model and the feasibility of the model. The criteria that must be met are Model Fit to see whether the model is feasible or not and the data to test the impact of variables. The condition is that the SRMR must be less than 0.10 or the NFI must be more than 0.90.

Table 5. Model Fit Analysis Results

	Estimated Model
SRMR	0.013
d_ULS	0.002
d_G	0.001
Chi-Square	0.772
NFI	0.994

We can see that the SRMR value is 0.013, which is less than 0.10. In that case, the NFI value is 0.994, which exceeds 0.90. From this we can conclude that the model satisfies the Goodness of fit.



Picture 3. Model path coefficient with bootstrapping

In testing this hypothesis, researchers use the method of total effect analysis. This analysis helps to test hypotheses of the effects of all variables having an (exogenous) influence on the affected (endogenous) variables. There are several criteria for this overall impact analysis. First, if the path coefficient values are positive, the influences between the variables are in the same direction. Second, if the value of the path coefficient is negative, the effects between the variables are in opposite directions. Third, for negative values, the effects between variables are opposite. Fourth, the effect between variables is not significant when the P-value is greater than 0.05. Below are the results of the overall impact analysis.

Table 6. Total Effects Analysis Results

	Original Sample	Sample Mean	Standard Deviation	T Statistics	P Values
Leverage	-0.304	-0.315	0.069	4.424	0.000
Company Growth	0.094	0.125	0.087	1.074	0.142
Operating Cash Flow	0.169	0.175	0.152	1.112	0.133
Firm Size	0.865	0.853	0.073	11.83	0.000
Mod Leverage	0.177	0.178	0.068	2.609	0.005
Mod Company Growth	-0.006	-0.037	0.122	0.046	0.482
Mod Operating Cash Flow	0.081	0.085	0.087	0.926	0.177

Discussion

Effect of leverage on bond ratings

From these results of the total effect analysis performed, we find that the original sample has a leverage value of -0.304. From these results, we can conclude that the leverage variable has negative values. This means that the effects between the leverage variable and the bond valuation variable are opposite. The resulting value for the P-value shown in the table is 0.000. From this value we can see that the value 0.000 is less than 0.05. These results show that the leverage variable has a negative and significant impact on bond ratings, suggesting that the H1 hypothesis is accepted.

The results of this study are consistent with the hypothesis that leverage has a negative impact on bond ratings. The impact of leverage on a bond's rating means that the higher the leverage, the more debt a company will incur and the greater the risk that the company will experience financial problems and sometimes bankruptcy. So if a company's leverage is high, the company's bond rating will be low. The high level of leverage (the ratio between the composition of debt to capital) will increase the risk profile of the business which will affect the assessment of the bank's ability to repay principal when it falls tempo and interest (coupon). This condition exposes the company to the risk of default or a lower bond rating. Therefore, the lower the leverage, the higher the company's valuation. According to signal theory, a bond rating offer should provide a signal about the financial condition of the company and describe the opportunities that may arise in relation to the debt it holds. Therefore, in this case, investors can use the leverage ratio as an indicator when making investment decisions in financial companies as it affects the rating of the bond (Tan, 2018).The more debt capital used by the company to fund the majority of the company's operations, the greater the risk of default affecting the company's bond rating downgrade. So if the capital the company owns is greater than the total debt, this shows that the company is in good shape as the company will be able to pay its debt with its capital if the company will one day go into liquidation. So that it can increase the bond rating of a company.

The findings of this study are also supported by previous research that states that leverage negatively impacts bond ratings (Hidayat, 2018), (Rivandi & Gustiyani, 2021), (Pamungkas & Herawaty, 2021), (Kaltsum & Anggraini, 2021), (Rialdy, 2021), (Setiawati et al., 2019), (Kurniawan & Suwarti, 2017), (Suprapto & Aini, 2019), (Sulistiani & Meutia, 2021), (Anom, 2021), (Hafidania & Hakiman, 2020), (Tan, 2018), (Ruspriono & Santoso Marsoem, 2021) and (Felicia & Sufiyati, 2020).

The effect of company growth on bond ratings

Based on the results of the total effect analysis achieve, the original sample value indicates that the company growth is 0.094. From these results, we can conclude that the company growth variable has a positive value. This means that the influence between the company growth variable and the bond rating variable will go in the same direction. The resulting value for the P-value shown in the table is 0.142. From this value we can see that the value 0.142 is greater than 0.05. These results show that the impact of the company growth variable on bond ratings is positive and non-significant, leading to the conclusion that the H2 hypothesis is rejected.

The result in this study suggests that company growth may not be taken into account when determining bond ratings. This means that there is no distinction between companies whose bonds fall into the high investment grade and low investment grade categories. From the overall sample studied, we can conclude that there is no significant difference in the growth of companies with a high investment grade rating and those with a low investment grade rating. The company's growth in the future may increase or decrease but will not affect the payment of bonds payable. Even though the company is experiencing poor growth, the company must still pay its obligations. Therefore, no matter how high or low the company's growth rate, we cannot guarantee that the company will be able to meet all its bonds, and it will not affect the bond rating increase or decrease.

The findings of this study are also supported by previous research showing that corporate growth does not affect bond ratings (Rianto et al., 2021), (Dewi & Mahardika, 2019), (Ni'mah et al., 2020), (Ismayana et al., 2019), (Hafidania & Hakiman, 2020) dan (Hakim & Putra, 2019).

Effect of operating cash flow on bond ratings

Based on the results of the overall effect analysis performed, it shows that the operating cash flow value for the original sample is 0.169. From these results, we can conclude that the operational cash flow variables have positive values. This means that the influence between the operating cash flow

variable and the bond rating variable is one-way. The resulting value for the P-value shown in the table is 0.133. From this value we can see that the value 0.133 is greater than 0.05. These results show that the impact of the operating cash flow variable on bond ratings is positive and non-significant, leading to the conclusion that hypothesis H3 is rejected.

The analysis concludes that increased operating cash flow will have no impact on investment grade and non-investment grade credit upgrades. The results of this study show that operating cash flow is not considered in determining bond ratings. This means that bonds do not distinguish between companies falling into the "high investment grade" and "low investment grade" categories. From this study, we can conclude that there is no significant difference in operating cash flow between companies with high investment grade ratings and those with low investment grade ratings. High operating cash flow in the current period does not necessarily guarantee that the company's cash flow will be even higher in the future. In addition, the rating agency is not allowed to use an operational cash flow rating, but rather the overall cash flow rating of the company, as this only represents the operational side and does not include any financing or investing activities.

The results of this research are also supported by previous research which states that operating cash flows have no impact on bond ratings (Kepramareni et al., 2021), (Pardosi & Budyastuti, 2021) and (Wendy & Sianturi, 2017).

Effect of firm size on bond ratings

Based on the results of the overall effect analysis we performed, we find that the original sample has a firm size value of 0.865. From these results, we can conclude that the variable firm size has a positive value, this means that the effect between the firm size variable and the bond rating variable goes in the same direction. The results of the P-values shown in the table have a value of 0.000. From this value we can see that the value 0.000 is less than 0.05. These results show that firm size has a positive and significant impact on bond ratings, suggesting that hypothesis H4 is acceptable.

In theory, measure of company has a positive relationship, the larger the company size, the higher the bond rating and the smaller the company size, the lower the bond rating. The results of this study show that larger companies achieve higher bond ratings, reflecting a higher level of investor confidence in large companies. Larger companies will have a stronger position in the industrial sector, thus supporting the bond rating obtained. Given that a large number of assets can be used as collateral for bond issuance, the company's total assets are expected to be able to meet it is bonds in the future, allowing investors to assess the ability of company to pay its debt can enhance a company's bond rating.

The findings of this study are supported by previous research showing that firm size has a positive impact on bond ratings (Hafidania & Hakiman, 2020), (Darma & Sulistiyani, 2019), (Sulistiani & Meutia, 2021), (Hamid et al., 2019), (Suprapto & Aini, 2019), (Felicia & Sufiyati, 2020), (Barus & Tarihoran, 2020), (Dewi & Mahardika, 2019), (Rianto et al., 2021), (Safitri et al., 2020), (Permana et al., 2020), (Suharmadi & Suripto, 2021) and (Parulian & Suprihatin, 2020)..

The effect of leverage on bond ratings with firm size as moderating

Based on the results of the total effects analysis performed, the results for the original sample values (Mod Leverage) show that firm size moderates the effect of leverage on bond rating by 0.177. These results suggest that firm size variables amplify the leverage effect on bond ratings. The resulting value for the P-value shown in the table is 0.005. From this value we can see that the value 0.005 is less than 0.05. These results demonstrate that firm size can moderate the impact of leverage on bond ratings. From this we can conclude that hypothesis H5 was accepted.

The results of the study prove that the firm size variable moderates the impact of leverage on bond ratings or in other words the hypothesis is accepted. Company size has a relationship with the level of bankruptcy risk and failure in this case can affect bond ratings (Rialdy, 2021). In terms of leverage, company size and research results, it is concluded that company size that reveals good company financial performance, in turn, will increase public and investors' confidence to keep their money in banks. Additional public savings in the form of savings, current accounts, time deposits and additional capital will be included in the debt component. The high debt component causes the bank's financial risk profile to increase which in turn causes the bond rating agency to lower the bond rating (strengthening the negative relationship between leverage and bond ratings).

The effect of company growth on bond ratings with firm size as moderating

Based on the results of the total effect analysis that has been carried out, it shows the results of the value of the original sample (Mod Company Growth) firm size moderates the company growth on bond ratings by -0.006. These results suggest that the firm size variable weakens the impact of company growth on bond ratings. The resulting value for the P-value shown in the table is 0.482. From this value we can see that the value 0.482 is greater than 0.05. These results show that firm size does not moderates the impact of company growth on bond ratings. From this we can conclude that hypothesis H6 is rejected.

Because the company's growth is not taken into account in determining the bond rating. So that the measure of the company is additionally incapable to ensure the company's development will increment. So the bond rating is not affected by the company's growth. The company's growth in the future may increase or decrease but it will not affect the payment of bonds payable, even though the company is experiencing poor growth but the company must still pay its obligations. In terms of company size, company growth and bond ratings, it can be understood that company growth does not originate from the relationship between company growth and bond ratings, but rather on the company's obligation to fulfill its obligation to pay bond coupons. This is possible because of the good reputation of the company. Although the company's growth is small, but has a good reputation, the company's growth will not cause the risk of default to increase. If the company has a good reputation where the company always pays its bond obligations to all of its investors even if the company's growth is not that great, the risk of the company failing can be reduced as it makes investors feel more secure. Invest in the company.

Effect of operating cash flow on bond ratings with firm size as moderation

It shows the result of the original sample value (Mod Operating Cash Flow) based on the result of the total effect analysis performed. Firm size moderates the operating cash flow on bond ratings by 0.081. From these results, we can conclude that the firm size variable amplifies the impact of operating cash flow on bond ratings. The resulting value for the P-value shown in the table is 0.177. From this value we can see that the value 0.177 is greater than 0.05. These results show that firm size does not moderates the impact of operating cash flows on bond ratings. From this we can conclude that hypothesis H7 is rejected.

In this study, operating cash flow has no impact on bond ratings. This could be due to the fact that total current assets containing higher liquid assets were not matched by the availability of adequate cash flows to pay bond interest. Company size cannot mitigate the relationship between operating cash flow and bond ratings. This is because the total assets that support a company's earnings are not all cash, but some borrowings. That's because the ability to generate cash flow is important to a healthy business. Companies cannot survive in the long run without generating operating money. Cash flow indicates the company's ability to raise cash during the current period and estimates and assumptions of future cash flows. High operating cash flow in the current period does not necessarily guarantee that the company's cash flow will be even higher in the future. Also, the rating agency may not use a operating cash flow rating but rather the company's overall cash flow rating as it only shows the operating side and does not include any financing or investing activities. As such, the company's size cannot increase the company's cash flow.

CONCLUSION

After the results of the discussion from the analysis above, the authors conclude several conclusions in accordance with the formulation of the problem sought as follows: Leverage has a negative and significant effect on bond ratings. Company growth has a positive and insignificant effect on bond rating. Operating cash flow has a positive and insignificant effect on bond rating. Firm size has a positive and significant effect on bond ratings. Firm size can moderate the relationship between leverage on bond ratings. Firm size cannot moderate the relationship between company growth on bond ratings. Firm size cannot moderate the relationship between operating cash flows on bond ratings. A possible limitation to influence the results of the study is that there are issuers that are listed on the Indonesian stock exchange but have not yet been rated by Pefindo, which makes it quite difficult for the author to obtain financial information from the company. From a theoretical point of view, it is recommended to add variables other than financial metrics, increase the population sample so that it

can clearly describe the state of the population, and add a study period so that the rating predictions for bonds are better. In the meantime, in terms of practice, this research is useful as material for forecasting bond ratings, to enable companies to make appropriate bond issuance decisions and investors to consider investment decisions in order to maximize return and minimize risk.

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