Influence of Current Ratio (CR), Return on Equities (RoE) and Price Earning Ratio (PER) on Share Prices: Study of Companies in Various Industrial Sectors Listed on the Stock Exchange Indonesian Effects 2018-2021

Ade Maharini Adiandari[1], Ni Komang Ayu Astuti[2]
[1,2]Universitas Ngurah Rai, Bali, Indonesia
maharini.adiandari@unr.ac.id

Abstract

The aim of this research is to collectively explore the effects of the current ratio, return on equity, and price-earnings ratio on the stock prices of companies spanning various industries listed on the Indonesia Stock Exchange during the period from 2018 to 2021. This study involved a selection of 35 companies as samples, chosen through the purposive sampling method. The data employed in this research is of a secondary and quantitative nature. Data collection methods encompassed both observation and the analysis of documentary studies. The analytical approach used is multiple linear regression analysis. The findings indicate that, on the whole, the current ratio, return on equity, and price-earnings ratio exert a notable influence on stock prices. However, upon closer examination, it is evident that return on equity and price-earnings ratio individually demonstrate a favorable and substantial impact on stock prices.

Keywords: *Ratio of Current Assets to Current Liabilities, Equity Return, Earnings-to-Price Ratio, and Stock Price.*

A. INTRODUCTION

During the Covid-19 pandemic, several external elements have exerted a substantial influence on stock prices. (Liu, Choo & Lee, 2020). The inflation rate and symptoms of panic selling are some of the factors that have caused stock price fluctuations, which in turn encourage investors to sell their shares (Huynh & Xia, 2021). As the inflation rate increases, share prices tend to fall, and the phenomenon of panic selling, where investors sell their shares without regard to price, creates further selling pressure and lowers share prices. Thereby, as an investor or potential investor, it is important to investigate the conditions of corporation before making an investment. One useful approach to assessing a company's condition is through financial performance analysis (Bhunia, Mukhuti & Roy, 2011). Financial metrics are frequently employed for analysis because they offer a synopsis of a company's financial performance.

The financial performance of a company is shaped by a multitude of elements, including the current ratio, return on equity, and the price-to-earnings ratio, as noted by Dănescu and Stejerean in their 2022 study. The current financial ratios within different industry sectors may undergo diverse fluctuations, which can be attributed to the economic instability and the challenges some companies face in meeting their

debt obligations. Corporate returns on equity in various industrial sectors tend to be negative, indicating that fundamentally, the industrial sector from 2018 to 2021 experienced serious financial problems (Bocanet, Alpenidze, & Badran, 2021). Therefore, additional capital from shareholders is needed to strengthen the company's financial structure and prevent the possibility of bankruptcy (Sadiq, M., et al, 2021). Corporate price to earnings ratios in the industrial sector of various companies also experienced losses, which was reflected in the negative price to earnings ratio values. This indicates that the industrial sector is facing challenges in its business (Frank, A. G., et al, 2019).

This phenomenon has prompted several studies to examine the current ratio, as indicated by Rahmadewi & Abundanti (2018), which found that current *ratio,* whether it has a negative impact or not, significantly affectstock prices. On the other hand, research which is conducted by (Demor et al., 2021) shows that current *ratio* positively related to share prices. As for the research results by (Rahmadewi & Abundanti, 2018) and (Demor et al., 2021), they concluded that return on equity (ROE) has a significant negative influence on stock prices. However, research by (Pratama et al., 2019), (Ardiyanto et al., 2020), and (Kholifah, 2020) concluded that ROE has a significant positive impact on share prices. Additionally, research conducted by (Rahmadewi & Abundanti, 2018), (Lestari & Suryantini, 2019) and (Kholifah, 2020) state that the price earnings ratio (PER) has a positive and significant impact on price shares, temporary (Putra et al., 2021) concluded that PER has an insignificant negative impact on prices share.

Judging from the explanation above, this research was appointed with the title "The Influence of Current Ratio (CR), Return *on Equities* (ROE) and Price Earning Ratio (PER) Against Stock Prices (Study of Companies in Various Industrial Sectors Listed on the Stock Exchange Indonesia 2018-2021)".

B. LITERATURE REVIEW

1. Financial Management

Financial management encompasses a wide range of activities undertaken by a company with the goal of acquiring funds at favorable terms. It also involves the strategic allocation and efficient utilization of these financial resources to support the company's operations and objectives. These activities are essential to ensure the financial health and sustainability of the organization (Sutrisno, 2012).

Efficient financial management is crucial for a company's success. It not only involves acquiring funds at low costs but also entails making informed decisions about how to allocate and utilize these funds effectively (Gardi, B., et al, 2021). Proper allocation of financial resources ensures that a company can invest in its growth, manage its day-to-day operations, and plan for future expansion. Additionally, efficient financial management helps in reducing unnecessary expenses, optimizing profitability, and mitigating financial risks, all of which contribute to the overall financial well-being of the organization (Hendrawan, M. H., et al, 2023).

2. Capital market

The capital market serves as a vital platform for individuals or entities with surplus funds to engage in transactions with those in need of financial resources. These transactions typically involve the buying and selling of various securities. This market plays a significant role in facilitating the allocation of funds from investors to borrowers, enabling the efficient flow of capital within the financial system (Tandelilin, 2017).

Furthermore, the capital market encompasses a broader perspective, serving as the arena where long-term financial instruments issued by various entities, including governments, public institutions, and private companies, can be traded. These financial instruments take the form of both debt and equity securities (Bertoldi, P., et al, 2021). This dual nature of the capital market allows a diverse range of stakeholders to access the necessary capital for their operations or projects, promoting economic growth and development (Tian, H., 2018).

3. Signal Theory

Signal theory highlights the importance of achieving a delicate equilibrium of information between the information issuer and the interested parties. According to this theory, management of an information issuer, typically a company, takes deliberate actions to convey their perspective on the company's future to potential investors. These signals are often conveyed through the dissemination of financial information, including financial reports and statements (Brigham & Houston, 2021).

A key concept associated with signal theory is the book value, which represents the intrinsic value of the company. Interestingly, as per this theory, the lower the company's actual value, the more appealing it becomes for potential investors to infuse additional capital into the company. This is because a lower book value might indicate undervaluation, creating an attractive opportunity for investors to provide the company with the necessary funds for its growth and development (Ilham, R. N., et al, 2022). In this way, signal theory underscores the significance of transparent and informative communication between companies and investors, as it can influence investment decisions and shape the company's financial future (Friske, W., et al, 2023).

4. Share Price

Investors naturally desire stock prices that exhibit consistency and a tendency to rise over time. However, the reality is that stock prices frequently undergo fluctuations. These fluctuations pose a risk that investors must confront as an inherent part of participating in the stock market. Consequently, investors must equip themselves with a comprehensive understanding of the factors that can impact these share price fluctuations (Setiyawan & Pardiman, 2014).

In essence, share price fluctuations are primarily attributable to the performance of the companies or issuers whose stocks are being traded. Positive or negative developments within these companies, such as financial results, management decisions, or market competition, can significantly influence stock

prices. Additionally, share price fluctuations are closely intertwined with various inherent risks, including market sentiment, economic conditions, and geopolitical events (Wu, F., et al, 2021). Therefore, for investors to navigate the stock market successfully, they need to not only monitor the performance of the companies they invest in but also remain attuned to the broader external factors that can drive fluctuations in share prices.

5. Current Ratio

The current ratio serves as a valuable financial metric employed to evaluate an entity's capability to fulfill its immediate short-term obligations and settle its debts in full when they become due. In essence, it quantifies the proportion of current assets that can be readily harnessed to cover the entirety of the short-term debts that are due. This ratio is a significant tool in assessing a company's liquidity and its ability to meet its financial responsibilities without facing the risk of insolvency (Kashmere, 2021).

A higher current ratio implies a greater capacity to meet short-term obligations comfortably, while a lower ratio might suggest potential liquidity challenges. Understanding the implications of the current ratio is crucial for both investors and management as it provides insights into the financial health and stability of the organization, guiding decisions regarding financial management and investment strategies (Olayinka, A. A., 2022).

6. Return on Equities

Return on equity (ROE) is a critical financial metric used to assess a company's performance by measuring its net profits after taxes in relation to its capital. This ratio serves as a reflection of how efficiently a company utilizes its equity. A higher ROE is generally considered more favorable, indicating more efficient utilization of the issuer's equity. This, in turn, signifies a stronger position for the company's owners (Kashmere, 2021).

Conversely, a lower ROE suggests a less efficient use of equity and a relatively weaker position for the company's owners. Understanding and analyzing ROE is crucial for investors and management as it offers insights into the company's profitability, its ability to generate returns for its shareholders, and the overall strength of the company's ownership position (Olayinka, A. A., 2022).

7. Ratio of Price to Earnings

The Price to Earnings Ratio (P/E Ratio) is a vital financial metric that plays a significant role in assessing market conditions and evaluating potential issuers. This ratio is employed to gauge the growth prospects of a company and is indicative of the price that investors are willing to pay for each unit of income generated by the issuer (Sumarsan, 2013).

The P/E Ratio helps investors understand the market's perception of a company's future growth potential. A higher P/E Ratio often suggests that investors anticipate stronger growth, and they are willing to pay a premium for the company's

shares. Conversely, a lower P/E Ratio may signify a more cautious market outlook, with investors valuing each unit of income generated by the company at a lower price (Nukala, V. B., & Prasada Rao, S. S., 2021). Therefore, the P/E Ratio serves as a valuable tool for investors to make informed decisions about investing in a particular issuer based on market sentiment and growth expectations (Anwar, M. B., et al, 2022).

C. METHOD

This study was conducted by examining multiple issuers representing various industries listed on the Indonesia Stock Exchange (IDX) throughout the period from 2018 to 2021. Data was acquired by accessing the IDX website. For this research, a sample of 35 issuers was chosen using the purposive sampling method. The data employed in this study is of a secondary nature, primarily consisting of quantitative data. Data collection involved the use of observation and documentation studies. The analytical approach used in data analysis is multiple linear regression analysis.

D. RESULTS AND DISCUSSION

1. Test Assumption Classic

a. Normality test

Table 1. Normality Test Results

One-Sample Kolmogorov-Smirnov Test

			Unstandardized Residuals
N			140
Normal Parameters, b	Mean		0.0000000
	Std. Deviation		1.32749358
Most Extreme Differences	Absolute		0.115
	Positive		0.115
	Negative		-0.067
Statistical Tests			0.115
Asymp. Sig. (2-tailed)			0.003c
Monte Carlo Sig. (2-tailed)	Sig.		0.143d
	99% Confidence Interval	Lower Bound	0.134
		Upper Bound	0.152

a. Test distribution is Normal.
b. Calculated from data.
c. Lilliefors Significance Correction.
d. Based on 10000 sampled tables with starting seed 299883525.

Source: Data processed (2023)

The table above shows the monte numbers *Carlo. sig (2-tailed)*, namely 0.143. This reference can be interpreted as a distribution that is close to normal. This can be seen from the Monte numbers *Carlo. sig (2-tailed)*, namely 0.143 that exceeds 5%, then this research data can be considered normally distributed.

b. Multicollinearity Test

Table 2. Multicollinearity Test Results

Model		Unstandardized Coefficients B	Unstandardized Coefficients Std. Error	Standardized Coefficients Beta	Collinearity Statistics Tolerance	Collinearity Statistics VIF
1	(Constant)	7,332	0.350			
	CR	-0.072	0.143	-0.049	0.991	1,009
	ROE	0.460	0.124	0.424	0.714	1,400
	PER	0.198	0.088	0.257	0.715	1,399

Source: Processed data (2023)

Referring to the table above, it is observed that the tolerance figures for these three factors have a value of >0.10. On the other hand, the VIF figures for these three factors are <10, so that the conclusion of the regression equation is that there is no multicollinearity problem.

c. Heteroscedasticity Test

Table 3. Heteroscedasticity Test Results

Coefficients[a]

Model		Unstandardized Coefficients B	Unstandardized Coefficients Std. Error	Standardized Coefficients Beta	t	Sig.
1	(Constant)	1,303	0.190		6,861	0,000
	CR	-0.104	0.078	-0.138	-1,342	0.183
	ROE	0.045	0.067	0.080	0.662	0.510
	PER	0.005	0.048	0.012	0.101	0.920

a. Dependent Variable: ABS_RES

Source: Processed data (2023)

The table above indicates that if the significance figures for all factors have exceeded the alpha figure of 5%, the conclusion of the research model is that the data do not experience heteroscedasticity.

d. Autocorrelation Test

Table 4. Autocorrelation Test Results

Model Summary b

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Durbin-Watson
1	0.790a	0.624	0.611	1.69921	2,130

a. Predictors: (Constant), PER, CR, ROE

b. Dependent Variable: Share Price

Source: Processed data (2023)

The statistical examination reveals that the DW (Durbin-Watson) statistic is 2.130. In this study, the Durbin Upper (dU) value is determined to be dU = 1.7678, and (4-dU) has a value of 2.2322. The statistical analysis demonstrates that 1.7678 < 2.130 < 2.2322. These results indicate the absence of autocorrelation in the research model.

2. Analysis Involving Multiple Linear Regression

Table 5. Outcomes of Analysis Utilizing Multiple Linear Regression

Coefficientsa

Model		Unstandardized Coefficients B	Unstandardized Coefficients Std. Error	Standardized Coefficients Beta	t	Sig.
1	(Constant)	7,332	0.350		20,959	0,000
	CR	-0.072	0.143	-0.049	-0.502	0.617
	ROE	0.460	0.124	0.424	3,714	0,000
	PER	0.198	0.088	0.257	2,255	0.026

a. Dependent Variable: Share Price

Source: Processed data (2023)

The table above shows the regression structure in the research model presented below: Y = 7.332 - 0.072X1 + 0.460X2 + 0.198X3 + e. The constant value of 7.332 indicates that when the current ratio, return on equity, and price-to-earnings ratio are all set to zero, the stock price is expected to increase by 7.332. The current ratio coefficient is -0.072 (negative) indicating that if the current ratio grows, the share price will decrease, assuming other factors remain constant/zero. The return on equity coefficient of 0.460 (positive) indicates that if return on equity grows, the share price will also grow, assuming other factors remain constant/zero. The price to earnings ratio coefficient of 0.460 (positive) indicates that if the price to earnings ratio grows, the share price will also grow, assuming other factors remain constant/zero.

3. Analysis of the Coefficient of Determination

Table 6. Results of Coefficient of Determination Analysis

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	0.790a	0.624	0.611	1.69921

a. Predictors: (Constant), PER, CR, ROE

Source: Processed data (2023)

Statistical testing after observation, interprets the number of R Square equals to 0.624, meaning that 62.4% of stock price factors can be explained by factors *current ratio, return on equity* as well as price to earnings ratio, while the remaining 37.6% is due to factors other than the research model.

4. Statistical Analysis T-test (Partial)

Table 7. Analysis Results T-test Statistics (Partial)

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	7,332	0.350		20,959	0,000
	CR	-0.072	0.143	-0.049	-0.502	0.617
	ROE	0.460	0.124	0.424	3,714	0,000
	PER	0.198	0.088	0.257	2,255	0.026

a. Dependent Variable: Share Price

Source: Processed data (2023)

Sig Number. The fact that 0.617 is greater than 0.05 suggests that the influence of the current ratio on stock prices is negative and lacks statistical significance when examined separately. Judging from the negative coefficient number (-0.072), it can be seen that as the current ratio increases or decreases, it does not have an impact on decreasing or increasing the current ratio,thus indicating the first hypothesis (H1) is rejected. An increase in the current ratio does not always have a positive impact on the company, because an increase in the current ratio can reflect excess funds that are not used productively, which in the end can minimize the issuer's capability to create profits. The decline in the issuer's capability to create profit will be responded to by investors with falling share prices. If this situation occurs, then repercussions of the current ratio for stock prices depends on the extent the issuer can use the information to effectively assess assets. Similarly, because investors seldom employ this ratio as a decisive factor in stock pricing, the current ratio does not exert a substantial impact on stock prices.

Sig Number. 0.000<0.05, partially identifies the price factor shares are positively influenced and significantly by return on equity. Judging from the positive coefficient figure (0.460), it can be seen that growing stock prices cause returns on equity to grow too, and vice versa, thus indicating that the second hypothesis (H2) is accepted. The Return on Equity (ROE) is a metric employed to evaluate the net profits after taxes in relation to the company's own capital. When ROE is high, it signifies strong company performance and can potentially lead to an increase in stock prices. This is because it piques the interest of investors who are looking to invest their capital, so demand for shares of the issuer is high.

Sig Number. 0.026 < 0.05, partially identifying the factor that share prices are significantly positively influenced by the price to earnings ratio. Judging from the positive coefficient figure (0.198), it shows that the stock price that grows causes *price to earnings ratio* to increase , and vice versa, thus showing that the third hypothesis (H3) is accepted. Corporations that own good performance usually has a quite high PER value, and if PER rises then stock price will also rise, thereby attracting investors' interest to invest the funds with the issuer.

5. F-Test Analysis (Simultaneous)

Table 8. F Test Results (F-Test)

ANOVA[a]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	26,110	3	8,703	4,785	0.004b
	Residual	169,175	136	1,819		
	Total	195,285	139			

a. Dependent Variable: Ln_Share Price

b. Predictors: (Constant), PER, CR, ROE

Source: Processed data (2023)

Having a considerable F value of 0.004, which is less than the significance level of 0.05, we reject the null hypothesis (Ho). This suggests that stock prices are indeed significantly influenced by the combined effects of the current ratio, return on equity, and price-to-earnings ratio. Consequently, it can be inferred that as stock prices rise, the current ratio, return on equity, and price-to-earnings ratio also increase.

E. CONCLUSION

The analysis outcomes indicate the following: 1) On an individual basis, the current ratio has a non-significant negative impact on stock prices. This implies that fluctuations in stock prices do not result in corresponding fluctuations in the current ratio; 2) Individually, share prices are significantly and positively influenced by return on equity. This means that the increasing share price causes it to increase*return on equity* and vice versa; 3) Individually, share prices are significantly and positively influenced by the price to earnings ratio. This means that the increasing share price causes the price to earnings ratio to grow and vice versa; and 4) When considered collectively, stock prices are notably affected by the current ratio, return on equity, and the price-to-earnings ratio.

REFERENCES

1. Anwar, M. B., Stephen, G., Dalvi, S., Frew, B., Ericson, S., Brown, M., & O'Malley, M. (2022). Modeling investment decisions from heterogeneous firms under imperfect information and risk in wholesale electricity markets. *Applied Energy, 306*, 117908.
2. Ardiyanto. A, Santoso. A, & Wahdi. N, (2020). The Influence of Return on Assets, Return on Equity, Earning Per Share and Price to Book Value on Stock Prices. *Elements Journal of Business and Accounting, 5*(1).
3. Bertoldi, P., Economidou, M., Palermo, V., Boza-Kiss, B., & Todeschi, V. (2021). How to finance energy renovation of residential buildings: Review of current and emerging financing instruments in the EU. *Wiley Interdisciplinary Reviews: Energy and Environment, 10*(1), e384.
4. Bhunia, A., Mukhuti, S. S., & Roy, S. G. (2011). Financial performance analysis-A case study. *Current Research Journal of Social Sciences, 3*(3), 269-275.

5. Bocanet, A., Alpenidze, O., & Badran, O. (2021). Business analysis in post-pandemic era. *Academy of Strategic Management Journal, 20*(4), 1-9.
6. Brigham & Houston. (2021). *Basics of Financial Management*. Jakarta: Salemba Empat.
7. Cashmere. (2021). *Financial Report Analysis*. Jakarta: Raja Grafindo Persada.
8. Dănescu, T., & Stejerean, R. M. (2022). Companies' behavior in measuring the quality of financial reports: Pre-and post-pandemic research. *Frontiers in Psychology, 13*, 1005941.
9. Demor, N.C., Van Rate, P., & Baramuli, D.N. (2021). The Influence of Current Ratio, Debt to Equity Ratio, Return on Equity, Net Profit Margin and Earning Per Share on Share Prices of Companies in the Food and Beverage Sub Sector on the Indonesian Stock Exchange for the 2015-2019 Period. *EMBA Journal: Journal of Research in Economics, Management, Business and Accounting, 9*(3).
10. Frank, A. G., Mendes, G. H., Ayala, N. F., & Ghezzi, A. (2019). Servitization and Industry 4.0 convergence in the digital transformation of product firms: A business model innovation perspective. *Technological Forecasting and Social Change, 141*, 341-351.
11. Friske, W., Hoelscher, S. A., & Nikolov, A. N. (2023). The impact of voluntary sustainability reporting on firm value: Insights from signaling theory. *Journal of the Academy of Marketing Science, 51*(2), 372-392.
12. Gardi, B., Abdalla Hamza, P., Sabir, B. Y., Mahmood Aziz, H., Sorguli, S., Abdullah, N. N., & Al-Kake, F. (2021). *Investigating the effects of financial accounting reports on managerial decision making in small and medium-sized enterprises*.
13. Hendrawan, M. H., Defung, F., & Wardhani, W. (2023). Un/desired impact of capital buffers: Evidence from Indonesian bank profitability and risk-taking. *Cogent Economics & Finance, 11*(2), 2245217.
14. Huynh, T. D., & Xia, Y. (2021). *Panic selling when disaster strikes: Evidence in the bond and stock markets*. Management Science.
15. Ilham, R. N., Irawati, H., Nurhasanah, N., Inuzula, L., Sinta, I., & Saputra, J. (2022). Relationship of Working Capital Management and Leverage on Firm Value: An Evidence from the Indonesia Stock Exchange. *Journal of Madani Society, 1*(2), 64-71.
16. Kholifah, S. (2020). The Influence of Price Earning Ratio, Return on Equity, and Debt to Equity Ratio on Share Prices in the Property and Real Estate Sub-Sector on the Indonesian Stock Exchange. *E-Journal of Business Administration, 8*(4).
17. Liu, M., Choo, W. C., & Lee, C. C. (2020). The response of the stock market to the announcement of global pandemic. *Emerging Markets Finance and Trade, 56*(15), 3562-3577.
18. Nukala, V. B., & Prasada Rao, S. S. (2021). Role of debt-to-equity ratio in project investment valuation, assessing risk and return in capital markets. *Future Business Journal, 7*(1), 13.
19. Olayinka, A. A. (2022). Financial statement analysis as a tool for investment decisions and assessment of companies' performance. *International Journal of Financial, Accounting, and Management, 4*(1), 49-66.

20. Pratama, CA, Azizah, DF, & Nurlaily, F. (2019). The Influence of Return on Equity (ROE), Earning Per Share (EPS), Current Ratio (CR) and Debt to Equity Ratio (DER) on Stock Prices (Study of Jakarta Islamic Index Companies Listed on the Indonesia Stock Exchange 2014-2017). *Journal of Business Administration (JAB), 66*(1), 10-17.
21. Putra, AHEA, Mendra, NPY, & Saitri, PW (2021). Analysis of the Influence of CR, ROE, ROA, and PER on Banking Share Prices on the IDX 2017-2019. *Collection of Accounting Student Research Results (KHARISMA), 3*(1).
22. Rahmadewi, WP & Abundanti (2018). The Influence of EPS, PER, CR, and Roe on Share Prices on the Indonesian Stock Exchange. *Unud Management E-Journal, 7*(4).
23. Sadiq, M., Alajlani, S., Hussain, M. S., Ahmad, R., Bashir, F., & Chupradit, S. (2021). Impact of credit, liquidity, and systematic risk on financial structure: comparative investigation from sustainable production. *Environmental Science and Pollution Research*, 1-13.
24. Setiyawan, I., & Pardiman, P. (2014). The Influence of Current Ratio, Inventory Turnover, Time Interest Earned and Return on Equity on Share Prices in Manufacturing Companies in the Consumer Goods Sector Listed on the IDX for the 2009-2012 Period. *Nominal Barometer of Accounting and Management Research, 3*(2), 117-133.
25. Sumarsan, T. (2013). *Management Control Systems Application Concepts and Performance Measurement*. Jakarta: Index.
26. Sutrisno, A. (2012). *Financial Management Theory, Concepts and Applications*. Yogyakarta: Ekonisia.
27. Tandelilin, E. (2017). *Capital Markets: Portfolio and Investment Management*. Yogyakarta: Kanisius.
28. Tian, H. (2018). Role of capital market to accelerate the transition to low-carbon energy system. *Financing for Low-Carbon Energy Transition: Unlocking the Potential of Private Capital*, 211-238.
29. Wu, F., Zhang, D., & Ji, Q. (2021). Systemic risk and financial contagion across top global energy companies. *Energy Economics, 97*, 105221.