

Designing Risk Management Framework on Fundamental, Technical Variables of Normal Period and Crisis With Stock Return

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ABSTRACT

In the past two years, the global and Indonesian economies have been severely impacted by the COVID-19 pandemic, leading to below-target and negative growth rates worldwide. Indonesia declared the pandemic in March 2020, resulting in disruptions and lower-than-expected economic growth, with the first quarter of 2020 recording 2.97% growth compared to a consensus of 3.5-4.0%. Key sectors like manufacturing, retail, construction, and mining contracted, while household consumption dropped to 2.84% from 5.01% the previous year. This summary presents inflation and economic growth data in Indonesia as of October 2020 from the Central Statistics Agency. The research outcomes serve as reference material for government policy-making during crises, offer insights to infrastructure issuers in the capital market, assist investors in stock transactions and projections, and provide general knowledge about Indonesia's capital market.

INTRODUCTION

In the current period of global integration, investment is one of the important factors in encouraging a country's economic growth, one of which is through the capital market industry as a source of financing for the business world and a means of investment for the community (Guniarti, 2014). Investment is a commitment to a number of funds or other resources made with the aim of obtaining profits in the future. One popular form of investment is stocks. In 2021, there is an evaluation of changes in the stock sector conducted by the Indonesia Stock Exchange consisting of energy (alternative energy, oil, gas, & coal), basic materials, industrials (industrial goods, industrial services, multi-sector holdings), consumer non-cyclicals (food & beverage, food & staples retailing, nondurable household product, tobacco), consumer cyclicals (automobiles & components, consumer services, household goods, leisure goods, media & entertainment, retailing), healthcare (healthcare equipment & providers, pharmaceuticals & health care research), financials (banks, financing service, holding & investment companies, insurance, investment service), properties & real estate, technology (software & IT services, technology hardware & equipment), infrastructures (heavy constructions & civil engineering, telecommunication, transportation infrastructure, utilities) transportation & logistics (logistics & deliveries, transportation), listed investment product (bonds, investment trusts)(Anggarini, 2016).

(Indonesia Stock Exchange, n.d.). The object of research in this thesis is construction infrastructure industry companies, namely Acset Indonusa (ACST), Adhi Karya (ADHI), Bukaka Teknik Utama (BUKK), Nusa Raya Cipta (NRCA), PP Presisi (PPRE), PT PP (PTPP), Surya Semesta Internusa (SSIA), Total Bangun Persada (TOTL), Wijaya Karya Bangunan Gedung (WEGE), Wijaya Karya (WIKA), Waskita Karya (WSKT)(Husnan, 2018).

Acset Indonusa was established in 1995 which forged expertise especially in the field of foundation and demolition of buildings. Acset Indonusa is also part of Astra International's big family through its subsidiary, United Tractors. (Acset Member of Astra, n.d.) Adhi Karya is a company engaged in providing construction services. Its main business lines are divided into five: construction, engineering, procurement and construction (EPC), property, real estate, and investment. Adhi Karya's construction segment is civil and building construction services. Its EPC segment focuses on the power generation and oil and gas sectors (Zulkarnaen, 2017). Its property segment operates through Adhi Persada Properti, engaged in the construction of office buildings, apartments, and hotels (Robin, 2018). Its real estate segment operates through Adhi Persada Realti which is engaged in cluster housing development. Meanwhile, for the investment segment, the company invests in property such as highways, monorails, hotels, and power plants. Adhi Karya also has several subsidiaries such as Adhi Persada Bangunan, Adhi Persada Beton, Adhi Persada Properti, and Adhi Persada Realti (Reim, Parida, & Sjödin, 2016). (PT Adhi Karya (Persero) Tbk, n.d.) PT. Bukaka Teknik Utama is a company engaged in the engineering, procurement, and construction sectors. Its products include steel towers, steel bridges, boarding bridges, power plants, road construction equipment and oil and gas refineries. The company also provides offshore maintenance and services. Its subsidiaries include Bukaka Mandiri Sejahtera (nickel addition, processing and trading business), Bukaka Forging Industries (automotive components), Bukaka Energi (power generation sector). (Investing.com, n.d.)

Nusa Raya Cipta is engaged in providing construction services. The projects include the construction of hotels and resorts, office buildings, apartments, hospitals, commercial buildings, industrial plants, toll roads, and infrastructure for the mining sector (Iin & Tjahyanto, 2017). Its subsidiary Sumbawa Raya Cipta is engaged in providing consulting and management services for hotels, laundries, restaurants, and related businesses (Haryani & Risnawati, 2018). (Investing.com, n.d.) PP Presisi is engaged in construction. Its business activities include the provision of heavy equipment rental for construction, the provision of ready-mixed concrete, civil engineering work, foundation work and formwork. (Lam, 2014) PT PP is a company engaged in providing building and civil construction services. The company focuses on its four business lines: construction: building and infrastructure; engineering, procurement and construction; property and housing, as well as investment. The company is engaged in the construction of buildings and power plants, bridges, roads and ports. PT PP when viewed from the property and housing segment, this company builds office buildings, apartments, to shopping malls. PT PP when viewed from the EPC segment provides EPC services related to power plant projects for state-owned companies (SOEs) or companies engaged in the energy sector. Meanwhile, in terms of investment, it is investing in infrastructure projects and power plants. (PT PP Persero Tbk, n.d.)

PT. Surya Semesta Internusa is engaged in providing construction services. Through its subsidiaries, the company runs three business units: property development and management, construction, and hospitality (Awalianti & JAKA, 2013). The company operates property business through Surya Cipta Swadaya, TCP Internusa, and Siti Agung Makmur. The construction business is operated by Nusa Raya Cipta, Suryalaya Anindita International, Ungasan Semester Resort, and Surya Internusa Hotels. The company also invests in other companies through Enercon Paradhya

International. (Investing.com, n.d.) Total Bangun Persada is a company engaged in the construction of commercial buildings and skyscrapers, office space, vertical settlements, shopping centers, hotels, schools, universities, hospitals, religious buildings, and others. Its subsidiaries include Adhiguna Utama, Total Persada Development, Total Camakila Development, which is engaged in property development. (Investing.com, n.d.)

Wijaya Karya Bangunan Gedung is a company engaged in construction. Its main business activities include the construction of residential, commercial and institutional buildings such as residential, office, hospitality, warehouse, and others. The Company also provides electrical and mechanical building services such as spatial planning and air conditioner, transportation equipment installation services and telecommunication equipment installation. In addition, the company also provides planning services, building management and building rental, and rental of facilities and infrastructure. (Investing.com, n.d.) Wijaya Karya is a company engaged in providing construction services. Its business lines are divided into five, namely construction, machinery and electricity industry, real estate, and mining. Its construction segment consists of civil construction, including roads, bridges, airports, ports and barrages (dams), and building construction, including residential and commercial buildings. The machinery and electricity segment consists of two business units: energy which consists of the provision of engineering, procurement and construction services and investment in power plants and industrial plants. Its industrial segment consists of industrial precast concrete production and steel fabrication. The real estate segment includes the development of residential buildings and commercial buildings, property management and the provision of construction services (Griffin, 2016). Meanwhile, the mining sector is run through PT Sarana Karya, which is engaged in asphalt mining on Buton Island. (PT Wijaya Karya (Persero) Tbk, n.d.) Waskita Karya is a company engaged in the construction industry.

The company's business lines are divided into construction including construction and other related services such as design and construction; management consulting services; building management; fabrication of building materials and components; precast concrete at its factories in Cibitung, Pasuruan, Benoa, Sadang, and Palembang; property, which includes the construction of office buildings, hotels, apartments, and condominiums; energy related mini-hydro power plant operations in West Sumatra, and investment in toll roads (Bahrudin, 2016). On June 23, 2014, the company announced that it had formed a new subsidiary PT Waskita Toll Road to manage future toll road projects. (PT Waskita Karya (Persero) Tbk, n.d.) Eleven large companies are included in the construction infrastructure sector which is likely to be greatly affected in terms of its business industry in the midst of a crisis, in addition to other reasons such as hampered development, temporarily shifting concentration from business lines to health management, limited mobility so that development cannot be carried out directly in the field.

METHOD

Basically, this research is a combination of quantitative and qualitative research. Quantitative is used to calculate the influence of fundamental factors of financial ratios DER, OPM, ROA, ROE, NPM and technical factors of trading volume, individual stock price indices related to stock returns so as to use secondary data obtained from IDX Annual Statistics, Annual Report of Research Objects, Yahoo Finance, Investing, and some from capital market and securities websites (Badan Pusat Statistik, n.d.)(Abidin, Suhadak, & Hidayat, 2016). The data obtained will be processed with SPSS & RStudio software using panel data regression tests (ANDRIANTI, 2017). Meanwhile, qualitative testing is used in designing a risk management framework from the

influence of variables in statistical tests of panel data regression that have been carried out previously (Mojtahedi, Mousavi, & Makui, 2010)(Hanafi, 2014). The analytical descriptive study approach is carried out in collecting and revealing various problems and research objectives to be achieved (Fuady, 2014). Descriptive qualitative research is a research method based on the philosophy of postpositivism which is used to examine natural objective conditions where researchers act as key instruments (Sugiyono, 2010).

RESULTS AND DISCUSSION

Data Description

Descriptive Statistical Results

Descriptive statistics are used to describe data that can be seen from minimum, maximum, mean, and standard deviation. Based on sampling criteria or limitations, the sample used was 11 construction infrastructure sector companies with a four-year period (Manab, Othman, & Kassim, 2012). This sample will also distinguish normal conditions and samples of crisis conditions that are each two year period (Horton & Kleinman, 2015).

This study uses seven independent variables to determine ROA, ROE, NPM, OPM, DER, Trading Volume, and Individual Stock Price Index on stock return (Exchange, 2021). The dependent variable in this study is stock return which is measured using the annual closing price. to provide an overview of stock returns as dependent variables and ROA, ROE, NPM, OPM, DER, Trading Volume, and Individual Stock Price Index as independent variables.

Descriptive Statistical Analysis

ACST stock descriptive statistics show that there is no missing data for all variables, with ranges (minimum-maximum) for Stock Return 11.47, ROA 45.81, ROE 1395.55, NPM 115.17, DER 11224.05, OPM 104.16, Trading Volume 22.92 and Individual Stock Price Index 108.63. Meanwhile, for the results of the standard deviation compared to the mean value, it is found that all variables show standard deviation > the mean, which means that the data is increasingly diverse (Munawir, 2010).

Test the Difference Between Normal Stock Returns and Crisis Times

Panel data regression model selection testing is done so that we can determine the model to be used whether it is a common effect model (CEM), fixed effect model (FEM) or random effect model (REM).

Classical Assumption Test

Classical assumption testing is a test that must be fulfilled in conducting analysis using panel data regression including residual assumptions that are normally distributed, identical, and independent (Artha, Achsani, & Sasongko, 2014). Assuming normality, OLS estimators are unbiased, efficient, and consistent. On the other hand, the probability distribution for the OLS estimator can be obtained easily, since the normal distribution properties of each linear function of a normally distributed variable are themselves normally distributed. Classical assumption tests include the Normality test, the Multicollinearity test, and the Heterokedasticity Test.

CONCLUSION

The conclusions drawn from the research, conducted according to the planned methodology, can be summarized as follows: Firstly, there is a statistically significant difference in the average return between normal stocks (average return of -2.5986) and stocks during times of crisis (average return of 3.2988), indicating a distinction in their performance. Secondly, in normal conditions, various financial variables such as ROA, ROE, NPM, DER, OPM, Trading

Volume, and Individual Stock Price Index collectively influence stock returns, as their p-value of 0.00028133 is less than 0.05. Conversely, during crisis conditions, these variables no longer significantly affect stock returns, with a p-value of 0.53414 exceeding 0.05. Furthermore, both in normal and crisis conditions, the Individual Stock Price Index is the sole independent variable influencing Stock Return, given its p-values of 3.435e-06 (normal conditions) and 0.0480 (crisis conditions), both below the 0.05 threshold. Lastly, the research identified seven financial risks categorized as low risk (return on equity, debt to equity ratio), medium risk (net profit margin, individual stock price index), and high risk (operating profit margin, return on assets, and trading volume), each accompanied by specific risk mitigation solutions (Ernawati & Nugroho, 2012). These findings offer valuable insights into the relationship between financial variables, stock returns, and risk management, applicable in both normal and crisis periods.

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