The Comparative Analysis of Gold Prices and Exchange Rates on Indonesia's Composite Index During the Covid-19 Pandemic and Financial Crisis

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Abstract
This study focuses on the Indonesia Composite Stock Index (ICI) during the financial crisis (March-September for 1994-1995, 1995-1996, 1996-1997, and 1997-1998) and the COVID-19 pandemic (March-September for 2017-2018, 2018-2019, 2019-2020, and 2020-2021) based on the changes in world gold prices and the exchange rate "Rupiah," denoted as Rp. The period was chosen because it significantly negatively impacted Indonesia's economic growth. Quantitative methods using a secondary data set indicated different findings in a given period. Partial regression analysis resulted in various impact levels for each hypothesis. On the contrary, the multiple regression analysis showed a strong relationship between gold prices and exchange rates as independent variables and Indonesia's composite index as dependent variables. The limitation of this research is the short-term period of data collection to be included for further generating knowledge based on the phenomena to ensure reliable decision-making for investors, managers, or organizations in the Indonesian context.
Keywords: Indonesia Composite Index, Gold Price, Indonesian Exchange Rate, Partial Regression, Multiple Linear Regression

Introduction
Indonesia ultimately suffered the most dramatic depreciation of the 1997 financial crisis compared to other Southeast Asian countries. The crisis—which was brought on by the rupiah's unsustainable depreciation—has caused the worst recession the economy has ever known. According to data from Bank Indonesia, the GDP contracted by 13.68 percent in 1998, and the annual rate of inflation rose to 77.63 percent. Mullineux et al. (1999) stated that the recession marked by large-scale bank and business failures forced a large increase in

unemployment. Asian Development Outlook 1998 (ADO, 1998) contended that the absence of signs of excessive credit creation or reckless monetary expansion in the impacted nations meant that fiscal profligacy was not the root of the Asian crisis. Table I shows that from 1991 to 1996, all the impacted economies saw tiny budget surpluses; however, in 1997, there was a slight deficit. The unaffected economies, on the other hand, saw greater deficits from 1991 to 1996 but achieved balances in 1997. The impacted economies saw increases in growth, inflation, and savings rates, but there was evident trouble with their current account balances of payments, with deficits amounting to 5% of GDP in 1996, primarily due to the appreciation of their real exchange rates (Ryan, 2000).

Table 1
Major Economic Indicators: Affected and Non-Affected Economies, 1991 – 1997 (Percent)

Economic indicators	Affected economies			Non-affected economies		
	1991-95	1996	1997	1991-95	1996	1997
GDP growth	7.3	7.0	4.4	6.5	5.7	6.5
Inflation rate	6.1	5.8	5.1	4.9	3.7	2.5
Gross domestic saving/GDP	33.9	33.3	32.8	31.8	31.5	31.3
Current account balance/GDP	–3.0	–5.0	–3.0	4.1	4.9	4.2
Fiscal balance/GDP	0.3	0.4	–0.2	–0.7	–2.0	1.4
Money supply (M2) growth	19.5	18.6	18.5	14.5	9.8	8.1

Notes: Affected economies include Indonesia, South Korea, Malaysia, Philippines and Thailand. Non-affected economies include Hong Kong, China; Singapore and Tapei, China

Source: Asian Development Bank (1998, p. 25)

The value of the South Korean won, and the Malaysian ringgit had decreased by 42%, the Thai baht by 53%, the Indonesian rupiah by 80%, and the Philippine peso by 36% in January 1998 (Asian Development Bank, 1998). In addition to the currency crisis, these countries' stock and real estate markets saw significant losses, which negatively impacted banks and non-bank lending institutions that were already inundated with requests for panic withdrawals (Ryan, 2000). The prolonged economic crisis in Indonesia was caused by the government's decision to seek IMF assistance only after the rupiah exchange rate plummeted, as described by IMF (International Monetary Fund) agency. Foreign investors who have put their money into Indonesia have lost confidence in the market and sold their currencies and assets as quickly as possible, which has a significant influence on Indonesia as a country (Indonesia Investments, 2021). Faced with a collapsing exchange and stock market, the Indonesian government had little option but to concede to the demands of the IMF and Western governments (Robison & Rosser, 1998).

By the end of 2019, the next catastrophe occurred in Indonesia; the outbreak of the COVID-19 virus was confirmed in Wuhan and impacted almost every country in the world by early 2020, as seen in Figure 1, by the development of cases globally. This pandemic first appeared and was confirmed as an outbreak in Indonesia in March 2020 (World Health Organization, 2021). Prevention programs have been carried out in many affected countries in the world, including Indonesia, which issued Government Regulation Number 21, 2020 concerning Large Scale Social Restrictions (PSBB), which require people to only carry out activities such as school, work, and religious activities at home (Ministry of Foreign Affairs, 2020). The empirical

findings demonstrate that the initial local detection announcement of the COVID-19 pandemic has a mixed influence on the major Asian stock market indices (Adnan, 2022).
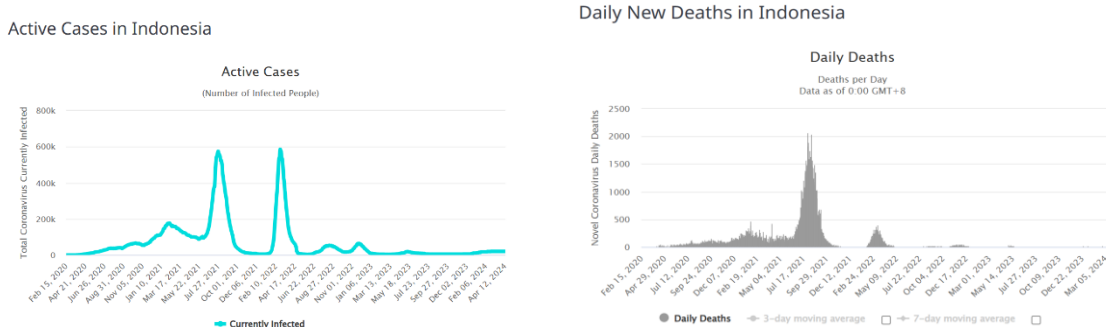

Figure 1. Global and Indonesia's COVID-19 New Cases and Total Number of Deaths (Worldometers, 2024)

The performance of the Indonesian capital market is reflected in the movement of the Composite Stock Price Index, which represents all stock prices listed on the Indonesia Stock Exchange. Macroeconomic indicator variables such as inflation, the rupiah exchange rate against the dollar, and GDP have proven to affect the movement of stock indices. Investor activity and commodity prices also have an impact on stock index movements (Martalena & Malinda, 2019). Inarno Djajadi, President Director of the Indonesia Stock Exchange, stated that the Jakarta Composite Index (JCI) reached its highest level at 740.83 in July 1997. Furthermore, the index plunged to reach its lowest level in December, to 339.54. Figure 2 shows a decrease of 54.7% within the year. The following year, in 1998, the Composite Index strengthened again to the highest level of that year, reaching 554.11 in February 1998. Then, in September 1998, the index experienced a drastic decline, reaching the lowest level of 256.83, where the decline reached 53.65%. This can be seen in Figure 2, which shows the shift in the Composite Stock Price Index in 1997–1998, which was very volatile.

Figure 2. Jakarta Composite Index 1997–1998 (Investing.com)

The Indonesia Stock Exchange issued a press release on March 12, 2020, stating that it had temporarily suspended trading (trade halt) for 30 minutes at 16:05:58 JATS time during the early days of the COVID-19 epidemic in Indonesia (Jakarta Automated Trading System) as a result of a 5% decline in the Composite Stock Price Index (Indonesia Stock Exchange, 2020). On March 23, 2020, at 14:52:09 JATS (Jakarta Automated Trading System) time, this also happened, for the same reason, the decline in the Composite Stock Price Index to 5%, which closed with the weakening of the Composite Stock Price Index to 3,989.52. A trading halt occurred 7 times; in addition to those already mentioned, it also occurred on March 13, 17,

19, and 30, 2020, and September 10, 2020, based on press releases (Indonesia Stock Exchange, 2020). Due to the increase in victims infected or dying from COVID-19, the weakening of the index is still dominant (Indonesia Stock Exchange, 2020). The composite stock price index peaked at 5,151.24 in August 2020 before rising to 6,279.80 in March 2021 (Investing.com, 2021).

Figure 3. Jakarta Composite Index, March 2020 – September 2021 (Pandemic Covid-19)

Among macroeconomic factors, as commodities, gold and silver proved to be the most suitable incorporation of the real monetary standard unit for many decades. Price fluctuations for gold, oil, and other energy sources, including gas, have a significant impact on Indonesia's mining industry and, ultimately, the country's economic growth (Ady, 2021). Previous research on the gold price and its effect is more focused on the impact on the sectoral composite index. The limited amount of research has become a gap explored in this paper. All classical economists, without exception, expected gold and/or silver money, either explicitly or implicitly. Karl Marx, who cannot be regarded as a supporter of gold money, stated that he approached the problem of determining the objective value of commodities (independent of surplus value) as a scientist rather than a political ideologue and wrote, "Throughout this work, I assume, for simplicity, gold as the money commodity." (Marx, 1967) (Mccormick, n.d.). As gold is one of the investment instruments, diversification of the investment portfolio should be done with full knowledge of the minimum risk level.

Based on the variations found in preliminary research by scholars, various market segments must be able to make an effective decision to react to market stress. Furthermore, this study intended to develop a deeper understanding of dynamics investment instrument among the variables to mitigate the impact of future crises and mitigate the risk for investor, governments, or other policymakers following two major events in Indonesia.

Literature Review
Indonesian Composite Index and Exchange Rate Volatility
Global financial crises not only cause increased volatility but also have a negative effect on the informational efficiency of foreign exchange markets because of the uncertainties created by recessions, rising inflation, and slowing economic growth (Hooper and Kohlhagen, 1978; Kandil et al., 2007). This research offers some intriguing findings from its comparison of the pre- and post-financial-crisis periods. When comparing the level of efficiency for countries with free-floating exchange rates to their pre-crisis period, there was a noticeable decline following the financial crisis (between 31.25% for Mexico and 77.14% for Sweden). It is noteworthy that, notwithstanding this deterioration, countries with free floating exchange rates remain more efficient than those with managed floating exchange rates. Following the financial crisis, Brazil, Colombia, India, the Philippines, South Africa, Thailand, and Turkey—all

of which have managed floating exchange rate regimes—saw increases in exchange rate efficiency. On the other hand, it worsened for Indonesia, Israel, and Korea (Diniz-Maganini et al., 2021). Many developing nations decreased their exposure to external debt after the 1997 Asian exchange crisis by issuing bonds denominated in their own currencies (Hofmann et al., 2021). When examining the relationship between exchange rates and stock markets in Asian countries, the evidence suggested a mixed picture for Japan and Indonesia; no link was established (Granger, 2000). During the pandemic, event study testing found that only events related to the first confirmed case of COVID-19 and the implementation of large-scale social restrictions in Indonesia affected the composite index (Ghazali & Faturohman, 2022). Following the different previous research and the increasing uncertainty of the global situation, this study compared the relationship between the Indonesian composite index and exchange rate Rupiah (Rp) based on two major critical events: the monetary crisis and pandemic COVID for further knowledge.

Indonesian Composite Index and Gold Price
It is stated in the article that stock investments can also be influenced by the gold price and result in a positive relationship (Kusumawati & Asandimitra, 2017). Gold is considered a risk-free investment in the long term (Ady, 2021). Supports this statement and opines that investors' wealth will remain intact by investing in gold (Apriyanti, 2012). The price of gold is high as it is rare and possesses corrosion-resistant properties (Wahyudi et al., 2017). The world gold prices show a significant influence on the performance of the Composite Stock Price Index (ICI), with a significant value of 0.022 < 0.05. The regression coefficient value obtained shows a unidirectional or positive relationship between world gold prices and IHSG performance (Rotinsulu et al., 2021). Investigates the dynamic connectedness and volatility transmission between precious metals futures, Brent oil futures, and ASEAN stock markets, including Indonesia, Malaysia, the Philippines, Singapore, Thailand, and Vietnam. Indonesia and Malaysia spill over to the rest of the ASEAN stock markets as well as to crude oil and precious metals during bearish market conditions. The Indonesian market is the highest transmitter of spillovers, irrespective of market conditions (Mensi et al., 2021). In the study between gold and stock returns, with a focus on the United States market, the study found a small and negative relationship between the prices of gold (Smith, 2001). The price of gold does not affect the Indonesia Composite Index (Lawrence, 2013). With the limited research subject of the relationship between gold price volatility and the Indonesian composite index and the various results, this research will reveal within a set period the gap found by the researcher.

Research Methodology
Data
Data collection is based on secondary data released by data collection agencies, namely the investing.com site for the composite stock price index, the Bank Indonesia site for the rupiah exchange rate, and the FRED (Federal Reserve Economic Data) website for global gold price data. The population used is the Composite Stock Price Index of all companies listed on the Indonesia Stock Exchange, with the sample criteria used based on monthly average data for the period before and during the financial crisis (March 1994–September 1995, March 1995–September 1996, March 1996–September 1997, and March 1997–September 1998), as well as before and during the COVID-19 pandemic in Indonesia (March 2017–September 2018,

March 2018–September 2019, March 2019–September 2020, and March 2020–September 2021).

Mean Calculating Formula
The data observation for each variable consists of a daily data set. In this research, the measurement used the mean of independent and dependent variables on a monthly basis with the following formula. The mean monthly dataset is divided based on two events, which are the period before and after the financial crisis, and before and after COVID.

$$\underline{x} = \Sigma x / n$$
(1)

Explanation:
$\underline{x}$ = mean of monthly dataset
Σx = sum all of daily dataset values
n = the total number of daily dataset values

Research Framework
World gold prices and the rupiah exchange rate are independent variables, and the Composite Stock Price Index is the dependent variable in this research. The framework was applied during the period before and during the monetary crisis, as well as before and during the COVID-19 pandemic. Simple linear regression was used to measure hypotheses H1 to H8.
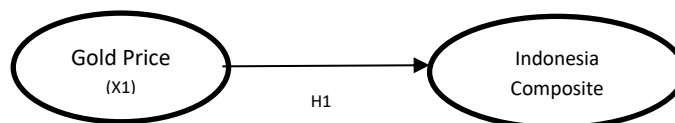

Figure 4. The Research Framework 1

Hypotheses derived from the research framework 1
H1: There is a relationship of world gold prices and the Indonesia Composite Index before the financial crisis
H2: There is a relationship of world gold prices and the Indonesia Composite Index during the financial crisis
H3: There is a relationship of world gold prices and the Indonesia Composite Index before the COVID-19 pandemic
H3: There is a relationship of world gold prices and the Indonesia Composite Index during the COVID-19 pandemic
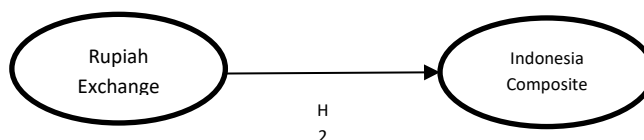

Figure 5. Research Framework 2

Hypotheses derived from the research framework 2

H5: There is a relationship of the rupiah exchange rate and the Indonesia Composite Index before the financial crisis

H6: There is a relationship of the rupiah exchange rate and the Indonesia Composite Index during the financial crisis

H7: There is a relationship of the rupiah exchange rate and the Indonesia Composite Index before the COVID-19 pandemic

H8: There is a relationship of the rupiah exchange rate and the Indonesia Composite Index during the COVID-19 pandemic

Hypotheses derived from the research framework 3
The researcher applied multiple linear regression to find the relationship between gold price (X1) and rupiah exchange rate (X2) as independent variables and Indonesia's Composite Index (Y) as a dependent variable.
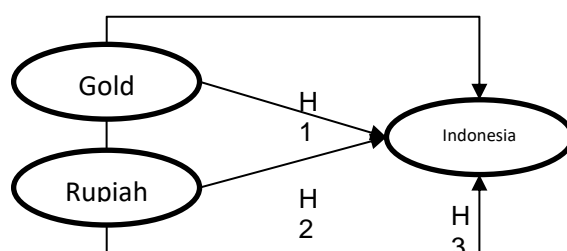

Figure 6. The Research Framework 3

$$\grave{Y} = b0 + b1X1 + b2X2 + ….+ bnXn \tag{2}$$

Explanation:

$\grave{Y}$ = Dependent Variable (Indonesia's Composite Index/ICI)

$b0, …bn$ = Regression Coefficient

$X1, …Xn$ = Independent Variable (Gold Price and Rupiah Exchange Rate)

H9: There is a relationship of world gold prices and the rupiah exchange rate simultaneously with the Indonesia Composite Index before the financial crisis

H10: There is a relationship of world gold prices and the rupiah exchange rate simultaneously with the Indonesia Composite Index during the financial crisis

H11: There is a relationship of world gold prices and the rupiah exchange rate simultaneously with the Indonesia Composite Index before the COVID-19 pandemic

H12: There is a relationship of world gold prices and the rupiah exchange rate simultaneously with the Indonesia Composite Index during the COVID-19 pandemic

Results and Discussions

Test of Measurement Model
The classical assumption test was carried out, consisting of the normality test with *one sample Kolmogorov-Smirnov,* resulting in a significant value >0.05; the multicollinearity test with *variance inflation factors (VIF)*, resulting in a VIF value < 10; the heteroscedasticity test using the Spearman test and scatter plot graphs; and the autocorrelation using the Durbin-Watson (DW) test, which followed the run-test to solve the autocorrelation in the data. The classical assumption test met the requirement test before conducting the regression analysis (Kline, 2023).

Hypothesis Test
The relationship of world gold prices and the Indonesia Composite Index before and during the financial crisis
The partial hypothesis test (t-test) results in differences related to the period of the financial crisis. The previous two years before and during the event were higher than t-table (2.120), which resulted in rejecting the hypothesis that there is no significant relationship between variables. On the contrary, a few months before the crisis, the gold price had a significant negative relationship with Indonesia's composite index, with a t-test 6.993. This result is contradiction with Kusumawati and Asandimitra (2017), and it is because of the differences in the period of analyses.

The relationship of world gold prices and the Indonesia Composite Index before and during the COVID-19 pandemic
Related to the pandemic COVID, the results find that there was no significant influence of world gold prices on the ICI during the pandemic (t-test 0.410<2.120), but various relationships existed before the pandemic. The results from March 2019 to September 2020 showed a t-test of 4.667>2.120, meaning that accepting the Ha with the negative relationship between gold price and ICI. The opposite result (Twite, 2002) argued that changes in the world gold price will have a positive influence on stock market indices in Australia. The differences in period and country of analyses became the main factors that made the result different.

The relationship of the rupiah exchange rate and the Indonesia Composite Index before and during the financial crisis
Following the rupiah currency exchange as the independent variable, two periods accept the Ha with a significant positive relationship with t-tests of 6.571 (two years before the monetary crisis) and 4.211 (during the crisis). This result, in contradiction with Desfiandi et al. (2017), resulted in the USD/IDR rate having a negative correlation and being significant to the IHSG movement. But it is relevant to the period of March 1996–September 1997; the t-test was -5.481, meaning that the rupiah exchange rate has a significant negative effect on the ICI.

The relationship of the rupiah exchange rate and the Indonesia Composite Index during the COVID-19 pandemic
The result has a significant negative effect on the ICI, with t-test -4.097 > 2.120. Its support comes from Desfiandi et al. (2017), which means that if the rupiah currency depreciates by 1, the ICI will decline to 1.034 (coefficient) basis point. It supports the result from Desfiandi et al. (2017).

The relationship of world gold prices and the rupiah exchange rate simultaneously with the Indonesia Composite Index before and during the financial crisis and Covid-19 pandemic
From the multiple regression test, the result accepted the hypothesis (Ha) that the world gold prices, and the rupiah exchange rate simultaneously influence the ICI with F-value > F-table (3.59). Exception, in the period of March 1994 – September 1995 with F-test (1.233) > F-table (3.59) shows that world gold prices and the rupiah exchange rate simultaneously do not influence the ICI. Using the square of the correlation coefficient, the coefficient of determination (R) is obtained with degree level of relationship between the world gold price and the rupiah exchange rate, together with the ICI, resulting in a strong R coefficient > 0.50.

Relevant to the F-test, the March 1994–September degree level of the relationship is normal with R value of 0.365.

Table 2
The Linier Regression Test

	Pre -Financial Crisis			Financial Crisis	Pre – Covid – 19 Pandemic			Covid – 19 Pandemic
	March 1994 – September 1995	March 1995 – September 1996	March 1996 – September 1997	March 1997 – September 1998	March 2017 – September 2018	March 2018 – September 2019	March 2019 – September 2020	March 2020 – September 2021
T-test (X1=Gold Price)	1.227 < 2.120	2.061 < 2.120	6.993 > 2.120	0.011 < 2.120	4.585 > 2.120	1.220 < 2.120	4.667 > 2.120	0.410<2.120
Sig > α (0.05)	0.200	0.056	0.000	0.992	0.000	0.240	0.000	0.687
T-test (X2 = Exchange Rate)	0.908 < 2.120	6.571 > 2.120	5.481 > 2.120	4.211 > 2.120	2.282 > 2.120	-2.095 > 2.120	4.872 > 2.120	4.097>2.120
Sig > α (0.05)	0.377	0.000	0.000	0.001	0.037	0.052	0.000	0.001
F-test	1.233 < 3.59	26.264 > 3.59	24.613 > 3.59	27.772 > 3.59	10.600 > 3.59	6.381 > 3.59	41.928> 3.59	9.249>3.59
Sig > α (0.05)	0.318	0.000	0.000	0.000	0.001	0.009	0.009	0.002

Conclusions

The results based on partial and multiple regression tests to measure the relation between gold price, rupiah exchange rate, and Indonesia composite index before and during the financial crisis of 1998 and the pandemic COVID-19 2020 are varied. After two dramatic events, since the gold price has no significant relationship, it can be considered an alternative investment for individual investors who encounter global uncertainty. In terms of rupiah currency, a significant relationship to the composite index signals to investors the current and future outlook of the Indonesian economy. The government must control inflation to improve the performance of companies listed on the stock market that can attract foreign investment.

Limitations

Scholars and other researchers can include other variables such as inflation, interest rates, oil prices, and others that have not been analysed in this research. Furthermore, the data series can be expanded to include more comprehensive phenomena that can influence these variables and to provide clearer direction in terms of decision-making for investors or organizations.

Acknowledgments

References

Adnan, A. T. M. (2022, June 28). Asian perspective of capital market performance amid the COVID 19 pandemic. *Asian Journal of Accounting Research*, *8*(3), 210–235. ISSN: 2459-9700. 10.1108/AJAR-10-2021-0223 JEL

Ady, S. U. (2021, 6–11). The effect of world oil prices, gold prices, and other energy prices on the Indonesian mining sector with the exchange rate of the Indonesian Rupiah as the moderating effect. *International Journal of Energy Economics and Policy*, *11*(5), 369-376.

Aini, I. N., Wardani, M. K., Rika, Amalia, Z., & Afridayani. (2020). Pengaruh inflasi, nilai tukar rupiah dan tingkat suku bunga terhadap indeks harga saham gabungan. *Proceeding Universitas Pamulang*, *1*(1), 135–145.

Anisa, I., & Darmawan, A. (2018). Pengaruh ekonomi makro dan harga komoditas tambang dunia terhadap indeks harga saham sektor pertambangan di Indonesia. *Jurnal Administrasi Bisnis, 56*, 197-206.

Artha, A. W., & Paramita, R. S. (2021). Pengaruh makroekonomi dan indeks global terhadap indeks harga saham gabungan selama pandemi covid-19 di Indonesia. *Jurnal Ilmu Manajemen, 9*(2).

Apriyanti, M. (2012). *Anti rugi dengan berinvestasi emas: Sederhana, mudah, dan untung luar biasa* (1st ed.). Pustaka Baru Press.
https://opac.perpusnas.go.id/DetailOpac.aspx?id=1065342#

Basit, A. (2019). *Pengaruh harga emas dan minyak dunia terhadap indeks harga saham gabungan* 42–51.

Biro Komuniksasi. (2021, July 25). *Kementrian koordinator bidang kemaritiman dan investasi*. Retrieved from Website Kementrian Koordinator Bidang Kemaritiman dan Investasi: https://maritim.go.id/ppkm-level-empat-tiga-diberlakukan-mulai-26-juli-2/

Brigham, E. F., & Houston, J. F. (2011). *Dasar-dasar manajemen keuangan terjemahan (Edisi 10).* Jakarta: Salemba Empat.

Bursa Efek Indonesia. (2020). *BEI terapkan ketentuan mengenai trading halt atas perdagangan di bursa*. Retrieved from Indonesia Stock Exchange Website:https://www.idx.co.id/berita/press-release-detail/?emitenCode=1244

Bursa Efek Indonesia. (2020, Maret 13). *Press release pembekuan sementara perdagangan*. Retrieved from Web Site Bursa Efek Indonesia: https://idx.co.id/berita/press-release-detail/?emitenCode=1250

Bursa Efek Indonesia. (2020, Maret 24). *Static data, news, and announcements*. Retrieved from Web site BursaEfekIndonesia:https://www.idx.co.id/StaticData/NewsAndAnnouncement/ANNOUNCEMENTSTOCK/From_EREP/202003/d6037b8f4f_abce94bb5c.pdf

Connelly, B. L., Certo, S. T., Ireland, R. D., & Reutzel, C. R. (2011). Signaling theory: A review and assessment. *Journal of Management*, *37*(1), 39–67. https://doi.org/10.1177/0149206310388419

Desfiandi, A., Desfiandi, A., & Ali, H. (2017). Composite stock price index (IHSG) macro factor in investment in stock (Equity Funds). *International Journal of Economics and Financial Issues*, *7*(3), 534-536.

Diniz-Maganini, N., Rasheed, A. A., & Sheng, H. H. (2021). Exchange rate regimes and price efficiency: Empirical examination of the impact of financial crisis. *Journal of International Financial Markets, Institutions, and Money*, *73*, 101361. https://doi.org/10.1016/j.intfin.2021.101361

Dwiati, A. R., & Ambarwati, Y. B. (2016). Pengaruh harga emas terhadap indeks harga saham gabungan indonesia dengan nilai kurs sebagai variabel moderating. *National Conference & Call for Papers*.

Fred Economic Data. (2020). *Gold fixing price 10:30 a.m. (London time) in the London bullion market, based on British Pounds*. Retrieved from EconomicResearch: https://fred.stlouisfed.org/series/GOLDAMGBD229NLBM

Ghazali, M. H., & Faturohman, T. (2022). In W. A. Barnett (Ed.), *Quantitative analysis of social and financial market development*. Emerald Publishing Limited. https://doi-org.ezproxy.utm.my/10.1108/S1571-038620220000030004

Ghozali, I. (2018). *Aplikasi analisis multivariete dengan program IBM SPSS 25 (Edisi 9).* Semarang: Universitas Diponegoro.

Granger, C. W.J. (2000, 9 19). A bivariate causality between stock prices and exchange rates: Evidence from recent Asianflu. *The Quarterly Review of Economics and Finance*, *40*(3), 337- 354.
https://www.sciencedirect.com/science/article/abs/pii/S1062976900000429?via%3Dihub

Grischa, S. (2020). Penyebab krisis moneter di

Indonesia.*Kompas.Com*.https://www.kompas.com/skola/read/2020/02/10/170000769/penyebab-krisis-moneter-di-indonesia

Gujarati N, D., & Porter C, D. (2013). Basic econometrics. In *introductory econometrics: A practical approach* (Fifth Edition). McGraw-Hill.

Handiani, S. (2014). Pengaruh harga emas dunia, harga minyak dunia dan nilai tukar dolar amerika/rupiah terhadap indeks harga saham gabungan pada periode 2008-2013. *E-Journal Graduate Unpar*, *1*(1), 85–93.
http://journal.unpar.ac.id/index.php/unpargraduate/article/view/552

Handika, H., & Damajanti, A. (2021). *Faktor penentu fluktuasi indeks harga saham gabungan (IHSG) di Bursa Efek Indonesia (BEI)*. *19*(3), 153–165.

Hofmann, B. (2021, 2 5). Bond risk premia and the exchange rate. *Journal of Money, Credit and Banking*, *52*(S2), 497-520.
https://onlinelibrary.wiley.com/doi/10.1111/jmcb.12760.
https://doi.org/10.1111/jmcb.12760

Hooper, P., & Kohlhagen, S. W. (1978). The effect of exchange rate uncertainty on the prices and volume of international trade. J. Int. Econ. 8, 483–511. https://doi.org/10.1016/0022-1996(87)90001-8.

IDX Stock Index Handbook v1.2, 2021. (2021). *IDX stock index handbook V1.2*. 52. https://www.idx.co.id/media/9816/idx-stock-index-handbook-v12-_-januari-2021.pdf

IndonesiaInvestments. (2021). Krisis keuangan asia diindonesia. *Indonesia Investments*.https://www.indonesia-investments.com/id/budaya/ekonomi/krisis-keuangan-asia/item246

Istamar, Sarfiah, S. N., & Rusmijati. (2019). Analisis pengaruh harga minyak dunia, harga emas, dan nilai kurs rupiah terhadap indeks harga saham gabungan di bursa efek indonesia. *Directory Journal f Economic Volume 1 Nomor 4*.

Istinganah, A., & Hartiyah, S. (2021). Pengaruh inflasi, suku bunga, nilai tukar rupiah, produk domestik bruto dan jumlah uang beredar terhadap indeks harga saham gabungan (IHSG) di bursa efek indonesia (BEI) periode 2010 sampai 2019. *Journal of Economic, Business and Engineering*, *2*(2), 245–252.

Kementrian Luar Negeri. (2020). *Kebijakan pemerintah republik Indonesia terkait wabah covid-19*. Retrieved from Web site Kementrian Luar Negeri:

https://kemlu.go.id/brussels/id/news/6349/kebijakan-pemerintah-republik-indonesia-terkait-wabah-covid-19

Kementrian Perdagangan. (2020). *Nilai tukar mata asing terhadap rupiah*. Retrieved from Portal StatistikPerdagangan:https://statistik.kemendag.go.id/exchange-rates

Khairudin, K., & Wandita. (2017). Analisis pengaruh rasio profitabilitas, debt to equity ratio (DER) dan price to book value (PBV) terhadap harga saham perusahaan pertambangan di Indonesia. *Jurnal Akuntansi Dan Keuangan*, *8*(1). https://doi.org/10.36448/jak.v8i1.826

Khoiri, H. A., & Arghawaty, E. (2020). Menganalisis nilai ihsg beserta faktor-faktor yang mempengaruhi di era pandemik covid-19. *Jurnal Riset Akuntansi & Keuangan Dewantara*, *3*(2), 110–121.

Kline, R. B. (2023). *Principles and practice of structural equation modeling*. Guilford Publications.

Kusumawati, D. A., & Asandimitra, N. (2017). Impact of the global index, gold price, and macroeconomic variable for Indonesia composite index. *Journal of Finance and Accounting*, *8*(2), 53–62.

Lawrence, S. S. (2013). Pengaruh variabel makro ekonomi dan harga komoditas terhadap indeks harga saham gabungan di Indonesia. *Finesta*, *1*(2), 18-23. https://publication.petra.ac.id/index.php/manajemen-keuangan/article/view/1167.

Mankiw, N. G. (2018). P*engantar ekonomi makro edisi 7.* Jakarta: Salemba Empat.

Martalena, & Malinda, M. (2019). *Pengantar pasar modal (Edisi revisi 1).* Jakarta: Andi Offset.

Martha, L., & Simbara, B. (2021). Pengaruh inflasi, suku bunga BI 7-day (reverse) repo rate dan nilai tukar rupiah terhadap indeks harga saham gabungan. *Jurnal Pundi*, *5*(1), 169–180. https://doi.org/10.31575/jp.v5i1.349

Mensi, W., Vo, X. V., & Kang, S. H. (2021). Precious metals, oil, and ASEAN stock markets: From global financial crisis to global health crisis. *Resources Policy*, *73*(June), 102221. https://doi.org/10.1016/j.resourpol.2021.102221

Mccormick, D. (n.d.). *Institutions, markets, and policy*.

Mullineux, A., Agung, J., & Pinijkulviwat, A. (1999). Paths to recovery in Thailand and Indonesia. *Journal of Financial Regulation and Compliance*, *7*(2), 183–197. https://doi.org/10.1108/eb025007

Nisha, N. (2015). Impact of macroeconomic variables on stock returns: Evidence from Bombay Stock Exchange (BSE). *Journal of Investment and Management*, *4*(5), 162. https://doi.org/10.11648/j.jim.20150405.14

Nour Halisa, N., & Annisa, S. (2020). Pengaruh covid-19 terhadap pergerakan indeks harga saham gabungan (IHSG). *Jurnal Manajemen Dan Organisasi*, *11*(3), 170–178. https://doi.org/10.29244/jmo.v11i3.32657

Nugraha, I. W. W., & Dewi, M. R. (2015). Pengaruh suku bunga sbi, nilai tukar, dan indeks pasar dunia pada IHSG di BEI. *Jurnal Manajemen, Strategi Bisnis Dan Kewirausahaan*, *9*(1), 33–41.

Putri, N., Ari, A., & Sari. (2016). Pengaruh harga emas dunia dan nilai tukar rupiah terhadap indeks harga saham gabungan. *E-Proceeding Of Management Vol. 3*, 1612-1619.

Rahmah, M. (2019). *Hukum pasar modal.* Jakarta: Kencana. [44] Putri, N., Ari, A., & Sari. (2016). Pengaruh harga emas dunia dan nilai tukar rupiah terhadap indeks harga saham gabungan. *E-Proceeding Of Management Vol. 3*, 1612-1619.

Robison, R., & Rosser, A. (1998). Contesting reform: Indonesia's new order and the IMF. *World Development*, *26*(8), 1593–1609. https://doi.org/10.1016/S0305-750X(98)00056-4

Rotinsulu, R. Y., & Untu, V. N. (2021). Uji kausalitas beberapa indeks saham global , harga emas dan minyak mentah dunia terhadap kinerja indeks harga saham gabungan (ihsg) periode 2016-2020 *causality test of several global stock indices*, *9*(3), 1611–1619.

Ryan, L. (2000). The "Asian economic miracle" unmasked. *International Journal of Social Economics*, *27*(7/8/9/10), 802–815. https://doi.org/10.1108/03068290010335235

Sartika, U. (2017). Pengaruh inflasi, tingkat suku bunga, kurs, harga minyak dunia dan harga emas dunia terhadap IHSG dan JII di bursa efek Indonesia. *BALANCE Jurnal Akuntansi Dan Bisnis*, *2*(2), 285. https://doi.org/10.32502/jab.v2i2.1180

Setiawan, K., & Mulyani, E. (2020). Pengaruh perubahan nilai tukar rupiah, tingkat inflasi, dan indeks bursa internasional terhadap indeks harga saham gabungan (IHSG) di bursa efek Indonesia (BEI). *Jurnal Ecogen*, *3*(1), 7. https://doi.org/10.24036/jmpe

Smith, G. (2001, 11 1). *The price of gold and stock price indices for the United States*. https://www.spdrgoldshares.com/media/GLD/file/Gold&USStockIndicesDEC200120fin a.pdf. Retrieved June 8, 2024, from
 https://www.spdrgoldshares.com/media/GLD/file/Gold&USStockIndicesDEC200120fina.pdf

Sugiyono. (2017). *Metode penelitian kuantitatif, kualitatif, dan R&D.* Bandung: Alfabeta.

Tandelilin, E. (2010). *Analisis investasi dan manajemen portofolio.* Yogyakarta: BPFE UGM.

Tarmidi, L. T. (2003). Krisis Moneter Indonesia : Sebab, dampak, peran IMF dan saran. *Buletin Ekonomi Moneter Dan Perbankan*, *1*(4), 1–25. https://doi.org/10.21098/bemp.v1i4.183

Twite, G. J. (2002, December). Gold prices, exchange rates, gold stocks and the gold premium. *Australian Journal of Management*, *27*(2), 123-140. 10.1177/031289620202700202

Widyasa, V. I., & Worokinasih, S. (2018). Pengaruh tingkat inflasi, nilai tukar rupiah dan tingkat suku bunga domestik terhadap indeks saham syariah indonesia. *Jurnal Administrasi Bisnis Vol.1* , 199-128.

World Health Organization. (2021). *Question and answer about COVID-19*. Retrieved from https://www.who.int/emergencies/diseases/novel-coronavirus-2019/question-and-answers-hub/q-a-detail/coronavirus-disease-covid-19