

## REFERENCE

- Agustina, Ruhiyat, and Sugiyanto (2024) Green Intellectual Capital, Asset Growth on Stock Return: Role Financial Performance as Intervening. *Asean International Journal of Business*, 3(1), 36-49.
- Aisyah, Ali, and Nohong (2021). The Effect of Macroeconomic Conditions on Profit Performance and Financial Distress in Manufacturing Companies Listed on the Indonesia Stock Exchange. *Hasanuddin Journal of Applied Business and Entrepreneurship*, 4(3), 26-41.
- Alfi, M. A. D. W., and Suwaidi, R. A. (2023). Analisis Nilai Perusahaan Pada Perusahaan Consumer Cyclical Di Bursa Efek Indonesia. *Jurnal E-Bis*, 7(2), 647-658.
- Angela, G. (2023). Kinerja saham akselerasi dalam isu inflasi: Kasus sektor konsumen non-primer. *Manajemen Bisnis dan Keuangan Korporat*, 1(2), 70-76.
- Baltagi, B. H. (2008). Forecasting with panel data. *Journal of forecasting*, 27(2), 153-173.
- Baltagi, B.H. (2008), *Econometrics. 2nd ed.* Berlin, Heidelberg: Springer.
- Bank Indonesia (2024, November 11). [www.bi.go.idhttps://www.bi.go.id/id/statistik/informasikurs/jisdor/Default.aspx](https://www.bi.go.id/id/statistik/informasikurs/jisdor/Default.aspx)
- Bank Indonesia (2025, January 11). <https://www.bi.go.id/id/publikasi/laporan/Pages/Tinjauan-Kebijakan-Moneter-Desember-2020.aspx>

- Basuki, A. T., and Prawoto, N. (2016). *Analisis regresi dalam penelitian ekonomi dan bisnis*.
- Batten, J., and Vo, X. (2014). Liquidity and Return Relationships in an Emerging Market. *Emerging Markets Finance and Trade*, 50, 21 - 5.
- Bell, et al. (2019), Fixed and random effects models: making an informed choice, *Quality and Quantity*, 10.1007.
- Bello, Z. (2017). The association between exchange rates and stock returns. *Investment management & financial innovations*, 10.
- Berggrun, L., Cardona, E., & Lizarzaburu, E. (2020). Firm profitability and expected stock returns: Evidence from Latin America. *Research in International Business and Finance*, 51, 101119.
- Borenstein, M., Hedges, L. V., Higgins, J. P., & Rothstein, H. R. (2010). A basic introduction to fixed-effect and random-effects models for meta-analysis. *Research synthesis methods*, 1(2), 97-111.
- Brigham, E. F., and Daves, P. R. (2014). *Intermediate Financial Management (12th ed.)*. USA: Cengage Learning.
- Burton, A. L. (2021). OLS (Linear) regression. *The Encyclopedia of Research Methods in Criminology and Criminal Justice*, 2, 509–514.
- Butar, Z. H. B., Sisilia, M., Purba, A. P., & Tarigan, M. M. (2021). Pengaruh profitabilitas, likuiditas dan leverage terhadap return saham pada perusahaan sektor pertanian yang terdaftar di bursa efek Indonesia Periode 2016-2019. *Akuntabel*, 18(2), 8.
- Chang, , Y., Faff, R., & Hwang, C. (2010). Liquidity and stock returns in Japan: New evidence. *Pacific-basin Finance Journal*, 18, 90-115.
- Chatjuthamard, P., Jindahra, P., Sarajoti, P., & Treepongkaruna, S. (2021). The effect of COVID-19 on the global stock market. *Accounting and Finance*, 61, 4923 - 4953.

- Chiang, C. S., Sembel, R., & Malau, M. (2024). The effect of financial performance and market return on stock return with GDP growth as a moderating variable. *International Journal of Business, Economics and Law*, 31(1), 102-111., (2024). The effect of financial performance and market return on stock return with GDP growth as a moderating variable. *International Journal of Business, Economics and Law*, 31(1), 102-111.
- Cooksey, R. (2020). Descriptive Statistics for Summarizing Data. *Illustrating Statistical Procedures: Finding Meaning in Quantitative Data*, 61 - 139. [https://doi.org/10.1007/978-981-15-2537-7\\_5](https://doi.org/10.1007/978-981-15-2537-7_5).
- Damodaran, A. (1999). *Estimating risk parameters*.
- Datar, V., Naik, N., & Radcliffe, R. (1998). Liquidity and stock returns: An alternative test. *Journal of Financial Markets*, 1, 203-219.
- Donthu, N., & Gustafsson, A. (2020). Effects of COVID-19 on business and research. *Journal of Business Research*, 117, 284 - 289. <https://doi.org/10.1016/j.jbusres.2020.06.008>.
- Dospatliev L, Ivanova M, Varbanov M. (2022). Effects of COVID-19 Pandemic on the Bulgarian Stock Market Returns, *Axioms*.
- Fahnayu, Hariyanto, and Safitri (2024). The Impact of Interest Rates, Exchange Rates, and Inflation on Stock Returns on the LQ45 Index Listed on the Indonesian Stock Exchange. *Journal Dimensie Management and Public Sector*.
- Fama, E. F. (1965). The Behavior of Stock-Market Prices. *The Journal of Business*, 38(1), 34.
- Fama, E.F. (1990). Stock returns, expected returns, and real activity. *Journal of Finance*, 45(4), 1089-1108.
- Feng, Long, and Chang. (2022). Environmental, social and governance, corporate social responsibility, and stock returns: What are the short-

and long-run relationships? *Corporate Social Responsibility and Environmental Management*.

Firdaus, M. M. (2021). *Metodologi penelitian kuantitatif; dilengkapi analisis regresi IBM SPSS Statistics Version 26.0*. Riau: CV. Dotplus Publisher.

Fox, J. (2015). *Applied regression analysis and generalized linear models*. Sage publications.

Frees, E. (2004). *Longitudinal and Panel Data*. <https://doi.org/10.1017/CBO9780511790928>.

Gbadebo, (2023). Exchange Rate Volatility and Nigerian Stock Market Development. *International Journal of Professional Business Review*.

M. Ghozali. (2017). *Metodologi Penelitian*. Jakarta: Salemba Empat.

Gujarati, N., and Damodar. (2004). *Basic Econometrics*. USA: McGraw-Hill.

Gurufocus financials (2024, October 21). <https://www.gurufocus.com/>

Halim, (2023). The Effect of Fundamental and Macroeconomic Factors on the Financial Performance of PT Adaro Energy Indonesia Tbk and The Impact of COVID-19 Pandemic on its Stock Return. *Thesis*.

Hasanudin, H. (2022). Current Ratio, Debt to Equity Ratio, dan Return on Asset terhadap Return Saham. *Journal of Management and Bussines (JOMB)*, 4(1), 578-593.

He, , Q., Liu, J., Wang, S., & Yu, J. (2020). The impact of COVID-19 on stock markets. *Economic and Political Studies*, 8, 275 - 288.

He, C., and Zhao, X. (2022). An Empirical Study on the Relationship between American Stock Market and Exchange Rate under the COVID-19. *Proceedings of the 2022 7th International Conference*

*on Financial Innovation and Economic Development (ICFIED 2022).*

Hirdinis, M. (2019). Capital structure and firm size on firm value moderated by profitability.

IDX (2024, September 28).Nilai ESG Perusahaan Tercatat.<https://www.idx.co.id/id/perusahaan-tercatat/nilai-esg>

Ihsan, F., Sembel, R., & Malau, M. (2023). The Effect of Macroeconomic, Market Return, And Financial Performance With Moderating Variable Of Covid-19 Pandemic On Stock Return: A Case Study Of Mobile Operator Companies Listed In Idx Period. *South East Asia Journal of Contemporary Business, Economics and Law*, 28(3).

Ihsani, A. N., Nidar, S. R., & Kurniawan, M. (2023) Does ESG Performance Affect Financial Performance? Evidence from Indonesia. *Wiga: Jurnal Penelitian Ilmu Ekonomi*,13(1), 61.

Ikhsan, S., Putra, T., Sugiyanto, S., Dasuki, R., & Herdiansyah, E. (2022). The Effect of Exchange Rate And Interest Rate On Share Prices In The Manufacturing Sector With Inflation As Moderation, *JRAK*,14(2), 226-236.

Jessica, J., and Yanti, Y. (2023). The Impact of Covid-19 on Stock Market Returns. *International Journal of Application on Economics and Business*.

Juliandi, A., & Manurung, S. (2014). *Metode Penelitian Bisnis, Konsep dan Aplikasi: Sukses Menulis Skripsi dan Tesis Mandiri*. Medan: Umsu Press.

Jun, S. G., Marathe, A., & Shawky, H. A. (2003). Liquidity and stock returns in emerging equity markets. *Emerging Markets Review*, 4, 1-24.

- Kasman, S., Vardar, G., & Tunç, G. (2011). The Impact of Interest Rate and Exchange Rate Volatility on Banks' Stock Returns and Volatility: Evidence from Turkey, *Economic Modelling*.
- Kasmir, (2013). *Analisis Laporan Keuangan. Edisi Kelima*. Jakarta: PT. Bumi Aksara.
- Kenton, W. (2019). Capital Asset Pricing Model (CAPM). *Investopedia*. <https://www.investopedia.com/terms/c/capm.asp>.
- Khan, M. (2019). Impact of Exchange Rate on Stock Returns in Shenzhen Stock Exchange. *ERN: Other Emerging Markets Economics: Macroeconomic Issues and Challenges (Topic)*.
- Kosnandar, Sembel, and Malau (2025, 5 January). Business Challenges and Opportunities in Indonesia: Brand Management, Renewable Energy, Mergers and Acquisition, Revenue Optimization, Employee Performance, and Technological Advancements in Various Industries — [ceocongress.org](https://www.ceocongress.org/files/EBook). <https://www.ceocongress.org/files/EBook>
- Kurniawan, A. (2021). Analysis Of The Effect Of Return On Asset, Debt To Equity Ratio, And Total Asset Turnover On Share Return. *Journal of Industrial Engineering & Management Research*, 2, 64-72.
- Latipah, N., Hwihanus, H., & Rahmiyati, N. (2023). The Effect of Liquidity, Asset Structure, Capital Structure on Firm Value with Profitability and GCG as Intervening Variables on Non-Consumer cyclical Listed on the Indonesia Stock Exchange. *Journal of Economics, Finance, and Management Studies*.
- Levine, D. M. (2014). *Statistics for Managers using Microsoft Excel*.
- Mahapatra and Bhaduri (2019). Dynamics of the impact of currency fluctuations on stock markets in India: Assessing the pricing of exchange rate risks. *Borsa Instabul Review*, 19(1), 15-23.

- Malau, M. (2020). Earning Informativeness is Moderating Investment Opportunity, Return on Asset, and Leverage on Prudence Measurement. *Journal of Accounting, Business and Finance Research*, 9(2), 57–63.
- Malkiel, B. G. (2020). *A random walk down Wall Street: the time-tested strategy for successful investing (12th ed.)*. W. W. Norton and Company.
- Marjohan, M. (2024). Financial Management: Fundamental Factors Against Stock Prices on the Indonesia Stock Exchange. *Jurnal Bisnis Strategi*, 33(1), 25-34.
- Masno, et al., (2024). Analysis of the Influence of Liquidity, Solvency, and Share Price on Company Value in Indonesian State-Owned Enterprises. *Maneggio*, 1(4), 79-94.
- Maxim, L. (2023). "The impact of liquidity management on profitability: empirical study on retail companies in Romania ". *Journal of Financial Studies*.
- Mensah and Werekoh. (2020). The Impact of Exchange Rate and Interest Rate Volatility on Stock Market Returns. *Journal of Applied Business and Economics*.
- Mujianto, R., and Hariyanto, D. (2024). The Influence Of Earnings Per Share, Return On Equity, Return On Assets, And Net Profit Margin On Financial Distress In The Consumer Cyclical Sector On The Indonesian Stock Exchange. *EKOMBIS REVIEW: Jurnal Ilmiah Ekonomi dan Bisnis*.
- Nadyayani D. and Suarjaya A. (2021). The Effect of Profitability on Stock Return. *American Journal of Humanities and Social Sciences Research*.
- Napitupulu, R. B., Simanjuntak, T. P., Hutabarat, L., Damanik, H., Harianja, H., Sirait, R. T. M., & Lumban Tobing, C. E. R. (2021).

*Penelitian Bisnis : Teknik dan Analisa Data Dengan SPSS - STATA - EVIEWS (1st ed., Vol. 1).* Madenatera.

- Narayan, P., and Zheng, X. (2011). The relationship between liquidity and returns on the Chinese stock market. *Journal of Asian Economics*, 22, 259-266.
- Neukirchen, Engelhardt, Krause, Posch (2022). Firm efficiency and stock returns during the COVID-19 crisis. *Finance Research Letters*, 44.
- Niandari, N., Jati, B., & Ykpn, P. (2023). Rasio Profitabilitas dan Kinerja Saham. *Jurnal Penelitian Ekonomi Akuntansi (JENSI)*.
- Novia, A. (2012). Analisis perbandingan uji autokorelasi Durbin-Watson dan Breusch-Godfrey.
- Patin, J.-C., Rahman, M., & Mustafa, M. (2020). Impact of Total Asset Turnover Ratios on Equity Returns: Dynamic Panel Data Analyses. *Journal of Accounting, Business, and Management*, 27(1), 19-29.
- Pouraghajan, A., Malekian, E., Emamgholipour, M., Lotfollahpour, V., & Bagheri, M. M. (2012). The relationship between capital structure and firm performance evaluation measures: Evidence from the Tehran Stock Exchange. *International Journal of Business and Commerce*, 1(9), 166–181.
- Putra, A., and Robiyanto, R. (2019). The effect of commodity price changes and USD/IDR exchange rate on Indonesian mining companies' stock return. *Jurnal Keuangan dan Perbankan*.
- Purba, D. S., Tarigan, W. J., Sinaga, M., & Tarigan, V. (2021). Pelatihan Penggunaan Software SPSS Dalam Pengolahan Regresi Linear Berganda Untuk Mahasiswa Fakultas Ekonomi Universitas Simalungun Di Masa Pandemi Covid 19. *Jurnal Karya Abadi*, 5, 5–24.



- R., Anderson, H., and Marshall, B. (2017). Market Volatility, Liquidity Shocks, and Stock Returns: Worldwide Evidence. *Capital Markets: Market Microstructure eJournal*.
- Rahman, H. U., Ibrahim, M. Y., & Che-Ahmad, A. (2016). Accounting profitability and firm Market valuation: A panel data analysis. *International Conference on Leadership and Management at Kuala Lumpur, Convention Centre, Kuala Lumpur, Malaysia*, 1–6.
- Rahmayani, D., and Oktavilia, S. (2021). Does the Covid-19 Pandemic Affect the Stock Market in Indonesia?. , *Jurnal Ilmu Sosial dan Ilmu Politik*, 24(1), 33-47.
- Ramadhanty and Budiasih. (2020). The Effect of Financial Leverage on Stock Returns with Corporate Social Responsibility Disclosure as Moderating Variable (Empirical Study on Mining Companies Listed on Indonesia Stock Exchange in 2016-2018), *American Journal of Humanities and Social Sciences Research*, 4, 48-53.
- Ross, S. A., (1976). The Arbitrage Theory of Capital Asset Pricing. *Journal of Economic Theory*, 13(3), 341-360.
- Raza, N., Shahzad, S.J.H., Tiwari, A.K. and Shahbaz, M. (2016), “Asymmetric Impact of Gold, Oil prices, and their Volatilities on Stock Prices of Emerging Markets”, *Resources Policy*, 49, 290-301.
- Sany, S., and Yonatan, N. (2023). Liquidity and Profitability of Retail Companies: Evidence from Indonesia. *International Journal of Organizational Behavior and Policy*.
- Shabbir, A., Kousar, S., & Batool, S. (2020). Impact of gold and oil prices on the stock market in Pakistan. *Journal of Economics, Finance, and Administrative Science*.
- Sholihah, S. M. A., Aditiya, N. Y., Evani, E. S., & Maghfiroh, S. (2023). Konsep Uji Asumsi Klasik pada Regresi Linier Berganda. *Jurnal Riset Akuntansi Soedirman*, 2(2).

- Shrestha, N. (2020). Detecting Multicollinearity in Regression Analysis. *American Journal of Applied Mathematics and Statistics*.  
<https://doi.org/10.12691/ajams-8-2-1>.
- Silitonga, Rovician Angeline. (2021). The Impact of Environmental, Social, and Governance Performance on the Financial Performance, Firm Value, and Stock Returns of the Publicly Listed Firms at Indonesia Stock Exchange During COVID-19 Pandemic Era. *Thesis*.
- Silver, Y., Setyorini, C., & Pratiwi, U. (2023). The effect of profitability, liquidity, and capital structure toward stock returns: A study on plantation companies listed in IDX. *Journal of Contemporary Accounting*.
- Subrahmanyam and Stapleton, (1983). The Market Model and Capital Pricing Theory. *The Journal of Finance*, 38, 1637-1642.  
<https://doi.org/10.2307/2327592>
- Subrahmanyam and Titman, (2001). Feedback from stock prices to cash flows. *Journal of Finance*, 56(6), 2389 – 2413.
- Suliyanto. (2011). *Ekonomika Terapan: Teori & Aplikasi dengan SPSS (1 ed.)*. Yogyakarta: Andi Publisher.
- Tan, X., , S., Wang, X., Zhao, Y., Wang, Z., & Xiang, L. (2022). The Dynamic Impact of COVID-19 Pandemic on Stock Returns: A TVP-VAR-SV Estimation for G7 Countries. , *Frontiers in Public Health*,10.
- Tandelilin, E. (2010). Work Motivation Between Women Entrepreneurs and Female Employees in Surabaya.
- Thamrin, J., and Sembel, R. (2020). The Effect of Company's Fundamental, Market Return and Macroeconomic to Stock Return: A Case Study of Consumer Goods Companies Listed in BEI Period 2009-2018. *International Journal of Business*, 4, 184-197.

- Tjhin, E., Gamaliel, H., & Pinatik, S. (2024). Analisis kinerja keuangan pada sektor consumer cyclicals yang terdaftar di BEI periode 2020-2023. *Riset Akuntansi dan Manajemen Pragmatis*, 2(2), 219-228.
- Thomsen, A., Sandager, R., Logerman, A. V., Johanson, J. S., & Andersen, S. H. (2013). *Introduction to EViews 6.0/7.0*. Denmark: Analytics Group.
- Trisnowati, Achsani, Sembel, and Andati. (2022). The Effect of ESG Score, Financial Performance, and Macroeconomics on Stock Returns during the Pandemic Era in Indonesia. *International Journal of Energy Economics and Policy*, 12(4), 166-172.
- Vallenato. (2002). What drives firm-level stock returns? *Finance Research Letters*, 44, 233-264.
- Wicaksono, F., Aminah, M., Sopiani, L., & Mardiyani, M. (2024). Analysis Stock Price: Earnings per Share as Moderating Variable. *International Journal of Business, Economics, and Social Development*.
- Widiyanti, L., Ahmar, N., & , M. (2019). Pengaruh Efisiensi Dan Efektivitas Asset Terhadap Return Saham Dengan Tingkat Resiko Sebagai Pemoderasi, *Jurnal Inovasi Manajemen Ekonomi Dan Akuntansi*, 238-246.
- Widjaja, W., Sembel, R., & Malau, M. (2023). The Impact of Macroeconomic, Financial Performance, Market Return, and Covid-19 Instances on Stock Return of Pharmaceutical Companies. *South East Asia Journal of Contemporary Business, Economics and Law*, 28(3), 48-57.
- Widjanarko, H., Suratna, S., & Utomo, H. (2020, October). The Effect of Gold Prices and Interest Rates on Stock Performance (Study of Manufacturing Companies in Indonesia during the Covid-19 Pandemic). In *Proceeding of LPPM UPN "Veteran" Yogyakarta*

*Conference Series 2020–Economic and Business Series, 1(1), 112-117.*

Xu, L. (2020). Stock Return and the COVID-19 pandemic: Evidence from Canada and the US. *Finance Research Letters, 38*, 101872 - 101872.

Xu, H., Lee, S. H., & Eom, T. H. (2007). *Introduction to Panel Data Analysis*. November 2007.

<https://doi.org/10.1201/9781420013276.ch32>

Yang, K., Kwan, H. Y., Yu, Z., & Tong, T. (2020). Model selection between the fixed-effects model and the random-effects model in meta-analysis. *Statistics and Its Interface, 13*, 501-510.

Yin, Li, and Su (2023). How does ESG performance affect stock returns? Empirical evidence from listed companies in China, *Heliyon*.

Yousfi, M., Zaied, Y., Cheikh, N., Lahouel, B., & Bouzgarrou, H. (2021). Effects of the COVID-19 pandemic on the US stock market and uncertainty: A comparative assessment between the first and second waves. *Technological Forecasting and Social Change, 167*, 120710 - 120710.

Zhou, H., Yu, M., Li, J., & Qin, Q. (2021). Rare disasters, exchange rates, and macroeconomic policy: Evidence from COVID-19. *Economics Letters, 209*, 110099 - 110099. <https://doi.org/10.1016/j.econlet.2021.110099>.

Zulfikar, R. (2018). Estimation Model and Selection Method of Panel Data Regression: An Overview Of Common Effect, Fixed Effect, And Random Effect Model. <https://doi.org/10.31227/osf.io/9qe2b>

## APPENDIX

### Appendix 1 – Fixed Effect Model (FEM) Model 1

Dependent Variable: STOCK\_RETURN  
Method: Panel Least Squares  
Date: 02/08/25 Time: 19:15  
Sample (adjusted): 3/01/2014 12/01/2023  
Periods included: 40  
Cross-sections included: 10  
Total panel (unbalanced) observations: 336

| Variable         | Coefficient | Std. Error | t-Statistic | Prob.  |
|------------------|-------------|------------|-------------|--------|
| C                | -1.688501   | 1.540325   | -1.096198   | 0.2738 |
| ASSET_EFFICIENCY | 0.105961    | 0.161834   | 0.654752    | 0.5131 |
| LIQUIDITY        | -0.000320   | 0.006979   | -0.045806   | 0.9635 |
| ROE              | 0.002884    | 0.000993   | 2.904548    | 0.0039 |
| EXCHRATE         | 0.351422    | 0.384138   | 0.914833    | 0.3610 |
| INTERESTRATE     | -0.115834   | 0.099605   | -1.162941   | 0.2457 |
| MARKET_RETURN    | 1.291877    | 0.144290   | 8.953311    | 0.0000 |

#### Effects Specification

##### Cross-section fixed (dummy variables)

|                    |          |                       |           |
|--------------------|----------|-----------------------|-----------|
| R-squared          | 0.292368 | Mean dependent var    | 0.004520  |
| Adjusted R-squared | 0.259198 | S.D. dependent var    | 0.201945  |
| S.E. of regression | 0.173814 | Akaike info criterion | -0.615219 |
| Sum squared resid  | 9.667574 | Schwarz criterion     | -0.433451 |
| Log likelihood     | 119.3567 | Hannan-Quinn criter.  | -0.542761 |
| F-statistic        | 8.814163 | Durbin-Watson stat    | 2.067493  |
| Prob(F-statistic)  | 0.000000 |                       |           |

### Appendix 2 – Random Effect Model (REM) Model 1

Dependent Variable: STOCK\_RETURN  
Method: Panel EGLS (Cross-section random effects)  
Date: 02/08/25 Time: 19:16  
Sample (adjusted): 3/01/2014 12/01/2023  
Periods included: 40  
Cross-sections included: 10  
Total panel (unbalanced) observations: 336  
Swamy and Arora estimator of component variances

| Variable         | Coefficient | Std. Error | t-Statistic | Prob.  |
|------------------|-------------|------------|-------------|--------|
| C                | -1.944993   | 1.512078   | -1.286304   | 0.1992 |
| ASSET_EFFICIENCY | 0.038577    | 0.052233   | 0.738558    | 0.4607 |
| LIQUIDITY        | -0.006737   | 0.004453   | -1.512921   | 0.1313 |
| ROE              | 0.001753    | 0.000717   | 2.444870    | 0.0150 |
| EXCHRATE         | 0.428931    | 0.377617   | 1.135890    | 0.2568 |
| INTERESTRATE     | -0.103333   | 0.098605   | -1.047952   | 0.2954 |
| MARKET_RETURN    | 1.330736    | 0.142481   | 9.339720    | 0.0000 |

#### Effects Specification

|                      | S.D.     | Rho    |
|----------------------|----------|--------|
| Cross-section random | 0.000000 | 0.0000 |
| Idiosyncratic random | 0.173814 | 1.0000 |

#### Weighted Statistics

|                    |          |                    |          |
|--------------------|----------|--------------------|----------|
| R-squared          | 0.273265 | Mean dependent var | 0.004520 |
| Adjusted R-squared | 0.260011 | S.D. dependent var | 0.201945 |
| S.E. of regression | 0.173718 | Sum squared resid  | 9.928563 |
| F-statistic        | 20.61824 | Durbin-Watson stat | 1.979548 |
| Prob(F-statistic)  | 0.000000 |                    |          |

#### Unweighted Statistics

|                   |          |                    |          |
|-------------------|----------|--------------------|----------|
| R-squared         | 0.273265 | Mean dependent var | 0.004520 |
| Sum squared resid | 9.928563 | Durbin-Watson stat | 1.979548 |

## Appendix 3 – Fixed Effect Model (FEM) Model 2

Redundant Fixed Effects Tests

Equation: FEM

Test cross-section fixed effects

| Effects Test             | Statistic | d.f.    | Prob.  |
|--------------------------|-----------|---------|--------|
| Cross-section F          | 0.733133  | (9,320) | 0.6785 |
| Cross-section Chi-square | 6.857650  | 9       | 0.6519 |

Cross-section fixed effects test equation:

Dependent Variable: STOCK\_RETURN

Method: Panel Least Squares

Date: 02/18/25 Time: 21:59

Sample (adjusted): 3/01/2014 12/01/2023

Periods included: 40

Cross-sections included: 10

Total panel (unbalanced) observations: 336

| Variable           | Coefficient | Std. Error            | t-Statistic | Prob.     |
|--------------------|-------------|-----------------------|-------------|-----------|
| C                  | 1.717008    | 2.215040              | 0.775159    | 0.4388    |
| EXCHRATE           | -0.532259   | 0.553478              | -0.961662   | 0.3369    |
| INTERESTRATE       | -0.366183   | 0.160518              | -2.281256   | 0.0232    |
| MARKET_RETURN      | 1.114768    | 0.259190              | 4.300971    | 0.0000    |
| EXCHXCOVID         | 0.187095    | 0.077161              | 2.424738    | 0.0159    |
| INTXCOVID          | 0.568493    | 0.238574              | 2.382877    | 0.0177    |
| MARKRETXCOVID      | 0.205688    | 0.283148              | 0.726432    | 0.4681    |
| R-squared          | 0.262925    | Mean dependent var    |             | 0.004520  |
| Adjusted R-squared | 0.249482    | S.D. dependent var    |             | 0.201945  |
| S.E. of regression | 0.174950    | Akaike info criterion |             | -0.628024 |
| Sum squared resid  | 10.06983    | Schwarz criterion     |             | -0.548501 |
| Log likelihood     | 112.5080    | Hannan-Quinn criter.  |             | -0.596324 |
| F-statistic        | 19.55978    | Durbin-Watson stat    |             | 1.906762  |
| Prob(F-statistic)  | 0.000000    |                       |             |           |

## Appendix 4 – Random Effect Model (REM) Model 2

Dependent Variable: STOCK\_RETURN

Method: Panel EGLS (Cross-section random effects)

Date: 02/18/25 Time: 21:58

Sample (adjusted): 3/01/2014 12/01/2023

Periods included: 40

Cross-sections included: 10

Total panel (unbalanced) observations: 336

Swamy and Arora estimator of component variances

| Variable      | Coefficient | Std. Error | t-Statistic | Prob.  |
|---------------|-------------|------------|-------------|--------|
| C             | 1.717008    | 2.223170   | 0.772324    | 0.4405 |
| EXCHRATE      | -0.532259   | 0.555510   | -0.958145   | 0.3387 |
| INTERESTRATE  | -0.366183   | 0.161107   | -2.272914   | 0.0237 |
| MARKET_RETURN | 1.114768    | 0.260141   | 4.285243    | 0.0000 |
| EXCHXCOVID    | 0.187095    | 0.077444   | 2.415871    | 0.0162 |
| INTXCOVID     | 0.568493    | 0.239450   | 2.374164    | 0.0182 |
| MARKRETXCOVID | 0.205688    | 0.284187   | 0.723776    | 0.4697 |

Effects Specification

|                      | S.D.     | Rho    |
|----------------------|----------|--------|
| Cross-section random | 0.000000 | 0.0000 |
| Idiosyncratic random | 0.175592 | 1.0000 |

Weighted Statistics

|                    |          |                    |          |
|--------------------|----------|--------------------|----------|
| R-squared          | 0.262925 | Mean dependent var | 0.004520 |
| Adjusted R-squared | 0.249482 | S.D. dependent var | 0.201945 |
| S.E. of regression | 0.174950 | Sum squared resid  | 10.06983 |
| F-statistic        | 19.55978 | Durbin-Watson stat | 1.906762 |
| Prob(F-statistic)  | 0.000000 |                    |          |

Unweighted Statistics

|                   |          |                    |          |
|-------------------|----------|--------------------|----------|
| R-squared         | 0.262925 | Mean dependent var | 0.004520 |
| Sum squared resid | 10.06983 | Durbin-Watson stat | 1.906762 |

## Appendix 5 – Chow Test Model 2

### Chow Test

Redundant Fixed Effects Tests

Equation: FEM

Test cross-section fixed effects

| Effects Test             | Statistic | d.f.    | Prob.  |
|--------------------------|-----------|---------|--------|
| Cross-section F          | 0.733133  | (9,320) | 0.6785 |
| Cross-section Chi-square | 6.857650  | 9       | 0.6519 |

## Appendix 6 – Lagrange Multiplier Model 2

Lagrange Multiplier Tests for Random Effects

Null hypotheses: No effects

Alternative hypotheses: Two-sided (Breusch-Pagan) and one-sided (all others) alternatives

|                      | Test Hypothesis       |                       |                       |
|----------------------|-----------------------|-----------------------|-----------------------|
|                      | Cross-section         | Time                  | Both                  |
| Breusch-Pagan        | 0.808426<br>(0.3686)  | 1.205289<br>(0.2723)  | 2.013716<br>(0.1559)  |
| Honda                | -0.899125<br>(0.8157) | -1.097857<br>(0.8639) | -1.412079<br>(0.9210) |
| King-Wu              | -0.899125<br>(0.8157) | -1.097857<br>(0.8639) | -1.278855<br>(0.8995) |
| Standardized Honda   | -0.724987<br>(0.7658) | -0.385146<br>(0.6499) | -6.103578<br>(1.0000) |
| Standardized King-Wu | -0.724987<br>(0.7658) | -0.385146<br>(0.6499) | -5.096226<br>(1.0000) |
| Gourieroux, et al.   | --                    | --                    | 0.000000<br>(1.0000)  |

