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STABILITY AND SHOCKS OF EBITDA IN DEVELOPED AND DEVELOPING COUNTRIES: EVIDENCE FROM AUSTRALIA AND INDONESIA DURING THE COVID-19 PANDEMIC

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Abstract: This study offers novelty through the use of EBITDA as the primary indicator in a comparative analysis of firms in developed and developing countries during the global crisis period (2019–2023). It highlights the role of government policy interventions in neutralizing the EBITDA gap and finds that firms in developing countries exhibit higher and more stable EBITDA compared to those in developed countries—a finding that challenges conventional views in the international economics literature. The purpose of this study is to analyze the differences in EBITDA between firms in developed and developing countries over the past five years using an unbalanced dataset. This study covers the period from 2019 to 2023 with a research population of 3,020 firms and 6,050 observations. The results show no significant differences in EBITDA between developed and developing countries in 2020, whereas differences are evident in 2019, 2021, 2022, and 2023. This condition may be partly explained by the COVID-19 pandemic, which led to government interventions in both countries. The analysis further shows that Indonesia has a higher average EBITDA ranking than Australia. A closer look at the descriptive statistics reveals that Australian firms are more volatile, while Indonesian firms appear far more stable.

Keywords: Australia, EBITDA, Firm Performance, Indonesia, Performance Comparison

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INTRODUCTION

EBITDA is highly important for capital market participants when analyzing a firm. A 2016 CFA survey found that nearly 70% of its members consider EBITDA in their analyses (Elfrink et al., 2025).. EBITDA helps measure how much cash a company generates from its core operations, as it excludes non-cash expenses related to major capital investments and certain non-operating costs. This perspective motivates using EBITDA in valuation, IPOs, and debt agreements (Dyreng et al., 2017). Proponents of EBITDA argue that it is superior to net income for comparing performance across similar firms because it reduces differences arising from capital structure, such as taxes, leverage, and debt (D'Souza et al., 2010).

EBITDA gained popularity in the 1980s, primarily measuring a firm's ability to service its debt. EBITDA is Earnings Before Interest, Taxes, Depreciation, and Amortization (Mey & Lamprecht, 2021). It is widely used for company valuation, solvency assessment, and managerial performance evaluation. Since then, EBITDA has often been employed as an alternative measure for operating profit, net income, free cash flow, and operating cash flow, making it a common communication tool between firms and their shareholders (Bouwens et al., 2019; Zelmanovich & Hansen, 2017). EBITDA is preferred because it outperforms EBITA and EBIT. Its advantage is both economically and statistically significant in every month across a 37-year sample period from 1987 to 2024 (Nissim, 2024). Nissim (2024) explains that while the accounting definition of operating profit aligns more closely with EBIT, depreciation and amortization charges deducted in EBIT calculations are often problematic and therefore excluded, resulting in the EBITDA metric. EBIT tends to be a distorted measure of operating profitability because interest capitalization blends operating and financing activities. Firms constructing similar assets may report substantially different asset values and depreciation levels depending on whether the assets are financed through debt or equity. Moreover, companies may manipulate interest capitalization, which further distorts EBIT. By excluding depreciation, EBITDA avoids these distortions.

This study conducts a comparative test of EBITDA between firms in a developed country, namely Australia, and a developing country, namely Indonesia. Australia and Indonesia are very different nations with little in common apart from geography. Their distinct histories, cultures, and identities often make bilateral relations challenging, frequently marked by misunderstandings and uncertainty. However, as close neighbors, they have little choice but to make the best of their historical circumstances (Beeson et al., 2021). Australia has one of the most open and innovative economies in the world. Strong growth since the 1990s has been accompanied by solid productivity performance. Its stable economic, political, and social environment has increased foreign investment in recent years. Since 1990, Australia's real economy has grown at an average of 3.3 percent per year. In 2006–07, Australia's GDP exceeded USD 1 trillion, ranking it the 13th largest economy globally and the 10th largest among industrial economies. Therefore, Australia can be regarded as one of the strongest economies in the world and is classified as a developed country (Kedutaan Besar Australia Indonesia, 2025).

Indonesia, the largest archipelagic country in the world with abundant natural resources and rich cultural diversity, has long been the subject of global discussion regarding its status as a developing or developed country (Liputan6.com, 2024). However, Indonesia is still categorised as a developing nation based on its gross domestic product (GDP). In 2020, Indonesia's GDP reached approximately IDR 15.73 quadrillion, equivalent to USD 1.06 trillion. Yet, this figure must be viewed in the context of Indonesia's large population of around 273.52 million people. With such a vast population, Indonesia's GDP per capita was IDR 57.43 million, indicating that the purchasing power of Indonesian citizens remains relatively lower than that of truly developed countries (Liputan6.com, 2024). Firms in developed countries such as Australia generally benefit from better infrastructure, cheaper access to capital, and

more stable regulations than those in developing countries like Indonesia. Moreover, Australia possesses a more mature economy with greater macroeconomic stability, whereas Indonesia still experiences fluctuations in economic growth. Developed countries also tend to have higher labor costs, offset by superior technology and productivity. This stands in contrast to Indonesia, which continues to exhibit the characteristics of a developing economy.

This study identifies an EBITDA gap between firms in developed and developing countries. Indonesia tends to exhibit higher and more stable EBITDA than Australia, except in 2020 when the COVID-19 pandemic and government policy interventions neutralized the differences. This study's novelty lies in using EBITDA as the primary indicator in cross-country firm performance analysis during a global crisis, while also uncovering the role of government policy interventions in shaping financial outcomes. This research contributes to the academic literature on cross-country firm performance. It provides valuable insights for policymakers and investors in understanding stability and risk in both emerging and developed markets. More specifically, the objectives of this study are to examine the differences in EBITDA between developed and developing countries, to identify external factors influencing these differences, and to provide empirical evidence regarding the role of government interventions in neutralizing the impact of a global crisis on firm performance.

LITERATURE REVIEW

Signaling Theory

The theory used in this study is signaling theory. In everyday life, signals are conveyed through how people carry themselves, interact, and communicate. In a corporate context, however, signals are expressed differently. Companies communicate and provide signals through recruitment, advertising, annual reports, and other means (Karasek & Bryant, 2012). Signaling theory states that managers or firms qualitatively possess more information than external parties, and they use certain measures or facilities to imply the company's quality (Komara et al., 2020).

METHOD

This study employs a five-year observation period from 2019 to 2023, as such a duration is considered sufficiently representative to capture the trend of changes in EBITDA under varying economic conditions, thereby producing more accurate results. The economic policies implemented in the two different countries allow for an analysis of how economic policies from 2019 to 2023 have impacted corporate EBITDA.

The study adopts a quantitative approach using a comparative analysis method to examine the differences in EBITDA between companies in Australia and Indonesia over the five years. The EBITDA data for both countries were obtained from OSIRIS. The study covers the EBITDA of all types of publicly listed companies in a developing country, Indonesia, and a developed country, Australia. The research population consists of 3,020 companies. However, several companies did not disclose EBITDA values during data collection, resulting in a final sample of 1,210 publicly listed companies, comprising 652 from Indonesia and 558 from Australia. The difference in sample size categorizes the data as an unbalanced panel dataset. With five years of observation from 2019 to 2023, the study yields 6,050 observations.

RESULTS AND DISCUSSION

Descriptive Statistics

Table 1 presents the sample size, consisting of 559 Australian companies and 652 Indonesian companies. EBITDA in Australia appears to be more volatile, with a minimum value of -76.31 and a maximum of 96.52. This range is wider than Indonesia, which spans from -51.41 to 87.56. The negative values indicate that some companies in both countries experienced operating

losses. However, Australia shows a higher potential profit of up to 96.52 but also a greater risk, with losses reaching -76.31, compared to Indonesia.

When examining the mean value, Indonesian companies report a higher average EBITDA of 18.46, compared to only 12.14 for Australian companies. The standard deviation of EBITDA in Australia is also larger at 24.14, relative to 18.21 in Indonesia. This indicates that the fluctuations in EBITDA are greater among Australian companies than Indonesian companies. Consequently, Australian firms face higher earnings uncertainty than their Indonesian counterparts. This condition may be attributable to external factors such as stricter regulations, more competitive market conditions, or the impact of the COVID-19 pandemic.

Table 1. Results of a Descriptive Statistics Test

Descriptive Statistics					
	N	Minimum	Maximum	Mean	Std. Deviation
AVE_AUS	558	-76.31	96.52	12.7623	24.13703
AVE_INDO	652	-51.41	87.56	18.4586	18.20834
Valid N (listwise)	558				

Sources: Data Process (2025)

The average EBITDA margin of companies in Indonesia and Australia is presented in Figure 1. Figure 1 illustrates that the EBITDA of Australian companies fluctuates more widely compared to Indonesian companies. The blue curve, representing Australian firms, shows a broader spread of values, ranging from deeply negative margins to very high positive margins, with a variation exceeding 100 percentage points. This indicates a high degree of heterogeneity in operational performance among companies in Australia, which may be attributed to significant differences in business scale, industry sector, and managerial strategies employed.

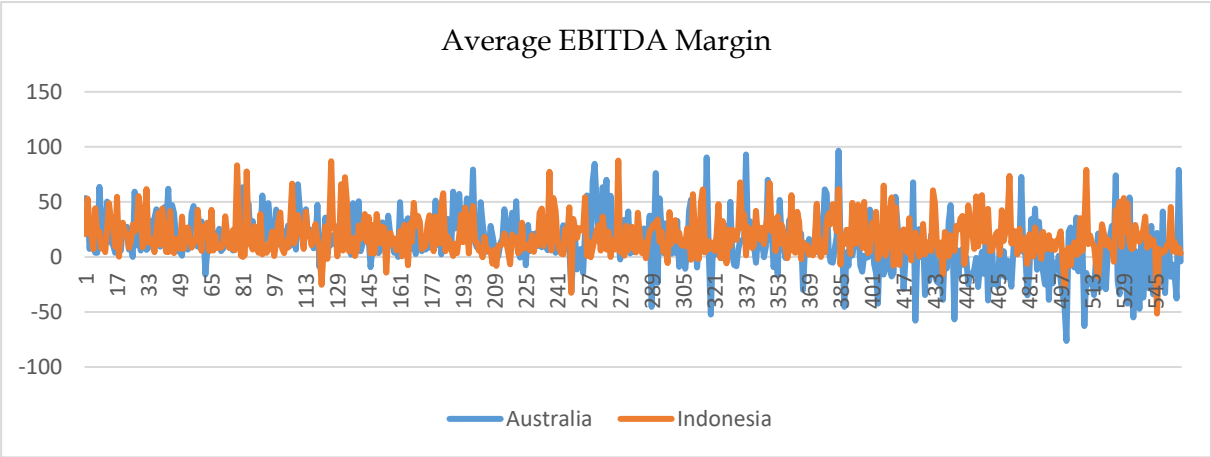

Figure 1. Average EBITDA Margin

A different result is shown for Indonesian companies, represented by the orange curve, demonstrating a more stable pattern concentrated within the EBITDA margin range of 0 to 60 percent. Although fluctuations still occur, the degree of dispersion is relatively lower, indicating that Indonesian firms exhibit more homogeneous operational performance. This finding is consistent with the descriptive analysis in Table 1, which shows that the mean EBITDA of Australian companies is lower than that of Indonesian companies.

These results suggest that, on aggregate, Indonesian firms tend to achieve greater operational efficiency in generating earnings before interest, taxes, depreciation, and amortization compared to Australian firms. Such findings may reflect a more consolidated market structure, more uniform industry regulations, or differing levels of competition in Indonesia's domestic market. The contrasting patterns of EBITDA margin fluctuations provide an initial indication of structural and business environment differences between companies operating in a developing country such as Indonesia and those in a developed country such as Australia. These findings also underscore the importance of adopting analytical approaches that consider country context when evaluating corporate financial performance and operational efficiency.

Normality Test

Table 2 presents the normality test results, showing that the Asymp. Sig. (2-tailed) values for the average EBITDA of Australian companies (AVE_AUS) and Indonesian companies (AVE_INDO) are less than 0.05 (0.000 < 0.05). This indicates that the data are not normally distributed. Therefore, subsequent tests must employ the Friedman and Wilcoxon tests, which are appropriate for non-normal data.

Table 2. Results of Normality Test

One-Sample Kolmogorov-Smirnov Test				
			AVE_AUS	**AVE_INDO**
N			**558**	**652**
Normal Parameters[a,b]	Mean		12.7623	18.4586
	Std. Deviation		24.13703	18.20834
Most Extreme Differences	Absolute		.101	.089
	Positive		.072	.089
	Negative		-.101	-.075
Test Statistic			.101	.089
Asymp. Sig. (2-tailed)[c]			.000	.000
Monte Carlo Sig. (2-tailed)[d]	Sig.		.000	.000
	99% Confidence Interval	Lower Bound	.000	.000
		Upper Bound	.000	.000

a. Test distribution is Normal.
b. Calculated from data.
c. Lilliefors Significance Correction.
d. Lilliefors' method based on 10000 Monte Carlo samples with starting seed 2000000.
Sources: Data Process (2025)

Friedman Test

This study employs a comparative test to examine whether there are differences in EBITDA between a developed country, Australia, and a developing country, Indonesia. The comparative test was conducted using the Friedman Test and the Wilcoxon Test. Tables 3 and 4 compare EBITDA conditions in both countries from 2019 to 2023. Table 2 shows that the average rank of AVE_AUS is 1.42, which is lower than AVE_INDO. Thus, it can be concluded that Indonesia has a higher average EBITDA rank than Australia. The Asymp. Sig. value indicates a significance level of 0.000 < 0.05, which means there is a statistically significant differ-

ence in EBITDA between Indonesia and Australia. Since the Friedman Test confirms the existence of differences, a follow-up analysis was conducted using the Wilcoxon Signed Rank Test. The results of the Wilcoxon Signed Rank Test are presented in Table 4.

Table 3. Results of Friedman Test

Ranks	
	Mean Rank
AVE_AUS	1.42
AVE_INDO	1.58
Test Statistics[a]	
N	558
Chi-Square	14.516
df	1
Asymp. Sig.	.000

a. Friedman Test

Sources: Data Process (2025)

Wilcoxon Signed Rank Test

The negative ranks in Table 4 indicate that 234 Indonesian companies have lower EBITDA than those in Australia. Conversely, the positive ranks show that 324 Indonesian companies report higher EBITDA than their Australian counterparts. These results highlight a gap in operational profitability between developing and developed countries.

Table 4. Wilcoxon Signed Rank Test Result

Ranks					
			N	Mean Rank	Sum of Ranks
AVE_INDO - AVE_AUS		Negative Ranks	234[a]	256.65	60056.00
		Positive Ranks	324[b]	296.00	95905.00
		Ties	0[c]		
		Total	558		

a. AVE_INDO < AVE_AUS

b. AVE_INDO > AVE_AUS

c. AVE_INDO = AVE_AUS

Sources: Data Process (2025)

The testing was conducted more specifically by analyzing the annual differences in EBITDA between Indonesia and Australia. Table 5 shows significant differences in EBITDA between the two countries in 2019, 2021, 2022, and 2023, as indicated by Asymp. Sig. (2-tailed) values of < 0.05. However, the results in Table 5 also show no significant difference between the EBITDA of the developed and developing country in 2020. This condition is likely attributable to the impact of the COVID-19 pandemic, which affected both countries (0.239 > 0.05). In 2020, the COVID-19 pandemic caused a global economic slowdown, impacting developed countries such as Australia and developing countries such as Indonesia.

Table 5. Comparison of Wilcoxon Signed Ranks Test Results

Test Statistics[a]					
	AUS_2019 - INDO_2019	AUS_2020 - INDO_2020	AUS_2021 - INDO_2021	AUS_2022 - INDO_2022	AUS_2023 - INDO_2023
Z	-4.649[b]	-1.177[b]	-3.202[b]	-5.811[b]	-4.940[b]
Asymp. Sig. (2-tailed)	.000	.239	.001	.000	.000

a. Wilcoxon Signed Ranks Test
b. Based on positive ranks.
Sources: Data Process (2025)

IMPLICATIONS

The practical implication of this study is its contribution to the international comparative literature on corporate financial performance, particularly by employing EBITDA as the primary indicator. The finding that companies in developing countries may exhibit higher and more stable EBITDA than those in developed countries, especially during periods of global crisis, challenges the common assumption that developed economies are always financially more resilient. This opens the door for new approaches to understanding corporate resilience to global economic shocks, particularly in the context of the role of government policy interventions.

The findings of this study may serve as a reference for policymakers, particularly in designing well-targeted fiscal intervention strategies in times of crisis. Adaptive and effective stimulus measures have been shown to reduce performance disparities across countries. For business practitioners, these findings emphasize the importance of adopting operational efficiency strategies to sustain EBITDA under conditions of uncertainty. This study signals to international investors that developing countries such as Indonesia can be resilient investment destinations, particularly during periods of crisis, with the potential for competitive returns. EBITDA stability demonstrates firms' capacity to endure and remain productive even under economic pressures.

RECOMENDATIONS

The analysis shows that Indonesia has a higher average EBITDA rank than Australia. The results also indicate that the positive ranks, with 324 cases, reveal Indonesian companies reporting higher EBITDA than Australian companies. When linked to signaling theory, these findings demonstrate how EBITDA reflects signals about economic conditions and market expectations in developing and developed countries. The analysis suggests that the developing country, Indonesia, is more efficient in generating operating profits, thereby providing stronger signals to investors regarding economic stability and competitiveness. In contrast, the EBITDA of developed countries such as Australia may serve as a risk signal for investors, who may perceive businesses in developed markets as more vulnerable to market volatility and regulatory pressures.

This study is subject to several limitations. First, it employs an unbalanced dataset, meaning that not all firms have complete data for the five-year observation period. While this reflects the dynamic nature of real business conditions (e.g., firm entry and exit), it may influence the consistency of the estimates. Second, the analysis focuses solely on EBITDA as the primary performance indicator, without incorporating other firm-specific or macroeconomic factors such as firm size, industry sector, leverage, inflation, or interest rates.

As a result, there may be uncontrolled variables that could affect the robustness of the cross-country comparison.

CONCLUSION

The results presented in Table 5, which show no significant difference in EBITDA between Indonesia and Australia in 2020, are likely partly attributable to the COVID-19 pandemic. The pandemic prompted government interventions in both countries. The Australian government launched large-scale stimulus packages, such as the JobKeeper Payment and tax incentives to support businesses. Similarly, the Indonesian government implemented economic stimulus measures, including MSME loan restructuring and tax incentives. With the implementation of stimulus programs in both countries, the negative impact of the pandemic on EBITDA became more evenly distributed, resulting in no significant differences. In addition, the pandemic caused a decline in demand and global supply chain shocks, with many industries likely experiencing disruptions, including manufacturing, trade, and services. The COVID-19 pandemic in 2020 affected different sectors in Indonesia and Australia. In Australia, the most impacted sectors were tourism, aviation, and international education, while in Indonesia, tourism, manufacturing, and commodity exports were the hardest hit. Although the affected sectors differed, the overall outcome was similar: both countries faced substantial pressure on EBITDA, which explains the absence of statistically significant differences.

The analysis shows no significant difference in EBITDA in 2020 between developed and developing countries. The impact of the COVID-19 pandemic blurred the financial signals of companies in both nations. A global crisis such as the COVID-19 pandemic rendered the usual signals for assessing economic strength less effective because: (1) the economic shock occurred worldwide, making cross-country differences less apparent; (2) government stimulus measures in both countries mitigated the pandemic's impact, leading to a more balanced EBITDA; and (3) investors faced difficulties in interpreting EBITDA as a signal of stability, as the pandemic created distortions in financial statements due to This study is subject to several limitations.

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