Economic Misery across MENA Economies: A Comparative and Statistical Analysis

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ABSTRACT

The Misery Index, originally proposed by Okun (1970), remains one of the most widely used composite indicators for measuring macroeconomic distress by combining inflation and unemployment rates. Despite its extensive application in individual country studies and international comparisons, comprehensive long-term analyses of economic misery across the Middle East and North Africa (MENA) region remain limited. This study investigates economic disparities among MENA countries using the original Okun Misery Index over the period 1991–2023. Annual inflation and unemployment data obtained from the World Bank and other international databases are employed to calculate the Misery Index for each country. In addition to descriptive and comparative analyses, the study applies a one-way Analysis of Variance (ANOVA) to examine whether statistically significant differences exist among three groups of MENA economies: oil-exporting countries, diversified economies, and conflict-affected economies. The descriptive findings indicate that Lebanon, Syria, and Iran consistently recorded the highest levels of economic misery in recent years, whereas Kuwait, Qatar, Bahrain, Oman, and the United Arab Emirates exhibited the lowest levels. The ANOVA results reveal statistically significant differences among the three groups ($F = 45.38$, $p < .001$), while Tukey's post-hoc analysis confirms that conflict-affected economies experience significantly higher economic misery than both oil-exporting and diversified economies. The findings suggest that prolonged political instability and armed conflict exert a greater influence on economic hardship than differences in economic structure alone. The study contributes to the literature by providing one of the longest comparative analyses of economic misery in the MENA region and offers policy implications for improving macroeconomic stability and reducing regional disparities.

Keywords: Misery Index; MENA Region; Economic Disparities; Inflation; Unemployment; ANOVA; Economic Welfare

Introduction

Macroeconomic stability constitutes one of the principal objectives of economic policy because of its direct implications for economic growth, employment, and social welfare. Among the numerous indicators used to evaluate macroeconomic performance, the Misery Index has remained one of the simplest and most informative measures of economic hardship. Introduced by Arthur Okun during the 1960s, the index combines inflation and unemployment rates into a single indicator that reflects the economic burden experienced by households. Although initially developed to evaluate economic conditions in the United States, the Misery Index has subsequently been adopted in comparative international research and has become an important indicator of macroeconomic performance and public welfare.

The Middle East and North Africa (MENA) region presents a particularly interesting setting for examining economic misery due to its exceptional economic, political, and institutional diversity. The region includes some of the world's wealthiest economies, such as Qatar, Kuwait, and the United Arab Emirates, alongside countries experiencing prolonged political instability, armed conflict, and severe macroeconomic crises, including Syria, Yemen, and Lebanon. While abundant natural resources have generated substantial income in several Gulf Cooperation Council (GCC) countries, other economies continue to face persistent inflation, unemployment, fiscal imbalances, and political uncertainty. Consequently, substantial disparities in economic well-being exist across the region despite geographical proximity and shared historical characteristics.

Previous studies have widely employed the Misery Index to evaluate macroeconomic performance, examine policy effectiveness, and compare economic conditions across countries. More recent research has also introduced modified versions of the index by incorporating variables such as economic growth and lending rates. Nevertheless, the existing literature remains dominated by studies focusing on individual countries, methodological developments, or annual global rankings. Comparatively little attention has been devoted to examining long-term regional disparities within the MENA region using the original Okun framework. Furthermore, few studies have attempted to determine whether differences in economic misery across distinct groups of MENA economies are statistically significant.

This study seeks to address these gaps by providing a comprehensive comparative analysis of economic misery across MENA countries during the period 1991–2023. Using annual inflation and unemployment data, the study calculates the original Okun Misery Index for each country and evaluates the evolution of regional economic distress over more than three decades. In addition to descriptive analysis, the study introduces statistical inference through a one-way Analysis of Variance (ANOVA) and Tukey's post-hoc test to determine whether significant differences exist among oil-exporting economies, diversified economies, and conflict-affected countries. Unlike previous descriptive studies, this approach allows the observed regional disparities to be evaluated statistically rather than solely through graphical comparisons.

The findings contribute to the literature in three important ways. First, the study provides one of the most comprehensive longitudinal assessments of economic misery across MENA countries covering the period from 1991 to 2023. Second, it combines descriptive evidence with statistical hypothesis testing to establish whether differences among country groups are statistically significant. Third, by comparing MENA with other world regions and examining the influence of major political and economic events, the study offers new insights into the determinants and persistence of economic disparities within one of the world's most heterogeneous regions.

The remainder of the paper is organized as follows. The next section reviews the relevant literature on the Misery Index and economic disparities. The subsequent section describes the data and methodology. This is followed by the empirical findings and statistical analysis. The final section concludes the study and discusses its policy implications.

Literature Review

Economic well-being and social welfare have long been central concerns of macroeconomic policy. To evaluate economic conditions and their effects on citizens, economists have developed several composite indicators, among which the Misery Index remains one of the most widely recognized. The Misery Index was originally introduced by Arthur Okun during the 1960s as a simple measure of economic hardship, calculated as the sum of the inflation rate and unemployment rate. The underlying rationale is that both inflation and unemployment impose significant costs on society by reducing purchasing power, income security, and overall economic welfare (Cohen et al., 2014).

Although the original Misery Index gained considerable popularity as an indicator of economic performance, several scholars have argued that economic distress cannot be fully captured by inflation and unemployment alone. Consequently, alternative formulations of the index have been proposed. One of the most influential modifications is Hanke's Annual Misery Index (HAMI), which incorporates unemployment, inflation, bank lending rates, and real GDP per capita growth. This expanded framework provides a broader assessment of economic conditions and has been used to rank countries according to their levels of economic misery on a global scale (Hanke, 2024).

The academic literature on the Misery Index has expanded substantially in recent years. A comprehensive review conducted by Gakuru and Yang (2024) examined the theoretical and empirical evolution of the Misery Index from its inception to the present day. Their findings indicate that the index remains a relevant tool for assessing economic welfare and policy effectiveness despite its simplicity. The review also highlights ongoing efforts to improve the index through the inclusion of additional economic variables such as exchange rates, lending rates, and economic growth.

Beyond descriptive applications, researchers have sought to provide stronger theoretical foundations for the Misery Index. Cohen et al. (2014) proposed a dynamic decomposition of the index based on the expectations-augmented Phillips Curve and Okun's Law. Their study demonstrates that inflation and unemployment are interconnected macroeconomic outcomes driven by deeper economic mechanisms and that understanding these relationships can provide a more comprehensive interpretation of economic misery.

Empirical studies have applied the Misery Index in various national and regional contexts. Many investigations have examined the relationship between economic misery and macroeconomic policies, economic growth, and social welfare outcomes. For example, recent research on Algeria analyzed the effects of fiscal and monetary policies on Hanke's Misery Index using an Autoregressive Distributed Lag (ARDL) framework. The findings suggest that fiscal and monetary policy variables significantly influence economic misery, emphasizing the importance of sound macroeconomic management in improving welfare outcomes (Bouzid & Benhabib, 2024).

Recent studies have also expanded the analysis of economic misery beyond traditional macroeconomic determinants. For instance, research focusing on MENA countries examined the relationship between climate-related variables and economic misery over the period 1991–2021. The results indicate that environmental and resource-related challenges can contribute significantly to economic distress, suggesting that the determinants of economic misery extend beyond inflation and unemployment alone (Aydin & Erdal, 2024).

Despite the growing body of literature, important gaps remain. Existing studies have predominantly focused on individual countries, methodological improvements to the Misery Index, or annual global rankings. Comparatively fewer studies have examined economic misery from a long-run regional perspective, particularly within the Middle East and North Africa (MENA) region. Moreover, while Hanke's modified index has received considerable attention, relatively little research has employed the original Okun framework to investigate long-term economic disparities across MENA countries. Consequently, the evolution of economic distress within the region and its position relative to other world regions remain insufficiently explored.

First, although the Misery Index has been widely applied at the national level, comprehensive comparative analyses covering the entire MENA region remain limited. Most studies focus on individual countries or a small group of economies, leaving regional disparities insufficiently examined.

Second, the majority of previous research has concentrated on identifying determinants of economic misery or improving the construction of the index itself. Comparatively less attention has been devoted to documenting and analyzing the long-term evolution of economic distress across MENA countries and the persistence of differences among them.

Third, existing studies rarely compare the MENA region with other global regions using a consistent methodology over an extended period. While annual international rankings provide useful snapshots, they do not offer a comprehensive understanding of how MENA's economic performance has evolved relative to the rest of the world.

To address these gaps, the present study employs the original Okun Misery Index to examine economic distress across MENA countries over the period 1991–2023. Furthermore, the study compares the region's performance with other world regions, identifies the countries contributing most significantly to regional economic distress, and investigates the major political and economic events associated with fluctuations in the Misery Index. By providing a long-run comparative perspective, this research contributes to the literature on economic welfare, regional disparities, and macroeconomic instability in the MENA region.

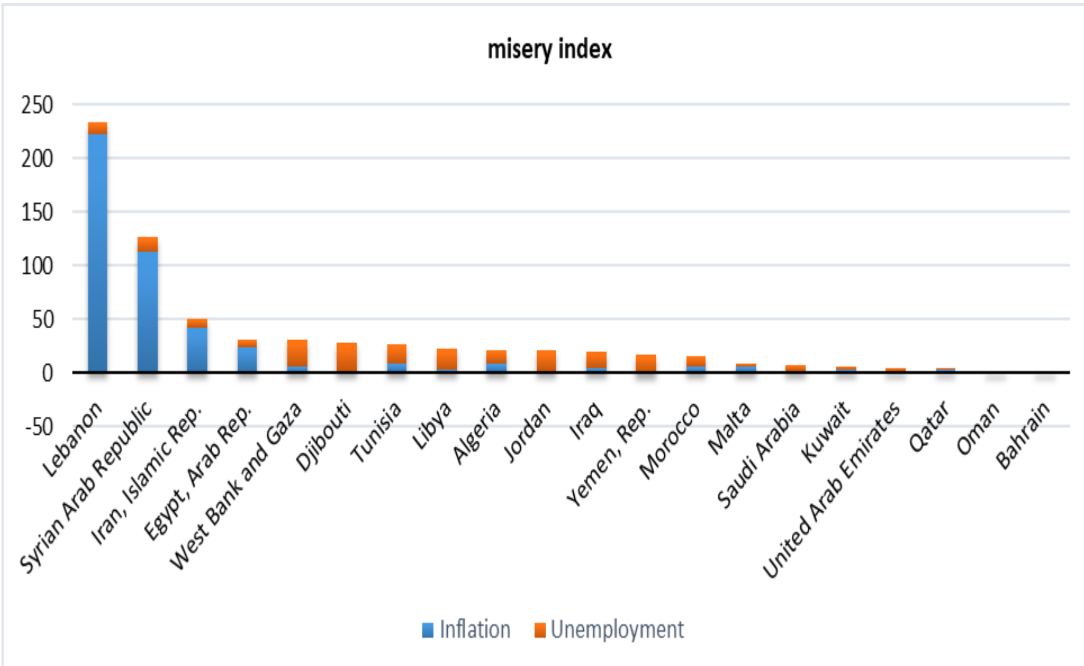
Data and Methodology

This research employs the original Misery Index framework, which combines annual inflation rates with seasonally adjusted unemployment rates, to assess economic distress across MENA nations from 1991 to 2023. The data for inflation and unemployment rates were sourced from reputable international databases such as the World Bank, the International Monetary Fund (IMF), and the national statistical agencies of the respective countries. By focusing on these two key economic indicators, the study aims to provide a clear and concise measure of economic misery that can be easily compared across different nations and time periods.

The methodology involves calculating the Misery Index for each country annually and then analysing the trends and patterns over the 32-year period. The study also includes a comparative analysis to contextualise the MENA region's economic standing on a global scale. This entails comparing the

Misery Index values of MENA countries to those of other regions, such as Africa, Eastern and Southern, Latin America, and the Caribbean. The analysis highlights significant disparities within the MENA region as well as between MENA and other parts of the world, providing a comprehensive view of economic distress and its evolution over time.

Figure 1: Misery Index in MENA 2023 (Okun's Index)

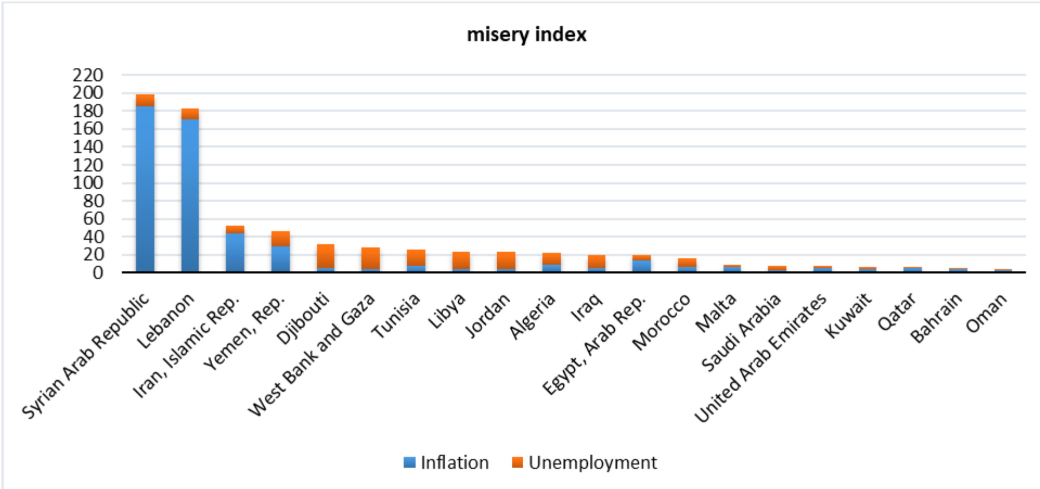


Source: Prepared by the Author based on data from World Bank (2023)

In 2023, Lebanon came at the top of the Misery Index in the MENA region with a shocking score of 233%, dominated primarily by an inflation rate of 222%. A series of crises, including political instability, a banking sector collapse, and the devastating Beirut port explosion in 2020, are at the root of Lebanon's economic turmoil. These factors have severely undermined economic confidence, leading to hyperinflation and skyrocketing unemployment. Syria, with a Misery Index of 126%, ranks second in the region. The ongoing civil war, which began in 2011, has hampered Syria's economy, infrastructure, and society. The conflict has led to massive displacement, loss of life, and destruction of property, severely disrupting economic activities. Inflation remains high due to the devaluation of the Syrian pound and scarcity of goods, while unemployment is rampant as businesses struggle to operate in a war-torn environment.

On the other hand, countries like Kuwait, the UAE, Qatar, Oman, and Bahrain have maintained low Misery Index values, not exceeding 5% in 2023. These nations benefit from stable political environments, substantial oil revenues, and diversified economies, all of which help cushion them against economic shocks and maintain low levels of inflation and unemployment.

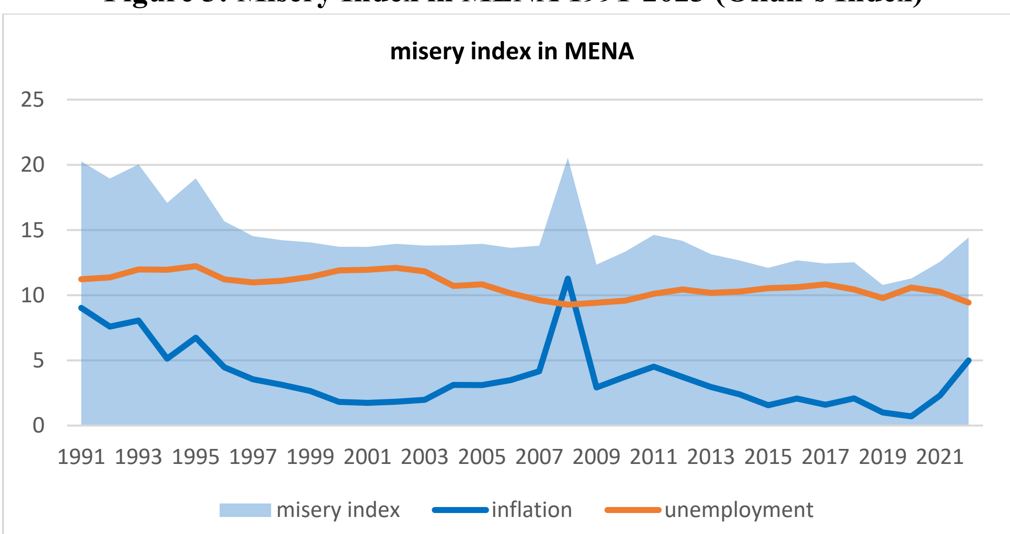
Figure 2: Misery Index in MENA 2022 (Okun's Index)



Source: Prepared by the Author based on data from World Bank (2023)

In 2022, Syria led the MENA region with the highest Misery Index, reaching a staggering 198.8%, Lebanon followed closely with a Misery Index of 183%, driven by similar issues of political instability and economic collapse. The Lebanese economy has been in freefall, with hyperinflation and a banking crisis eroding public trust and financial stability. Iran, with a Misery Index of 52%, also faced significant economic challenges, primarily due to international sanctions and internal economic mismanagement. In stark contrast, Kuwait, Qatar, Bahrain, and Oman maintained the lowest Misery Index values in the region, not exceeding 6% in 2022.

Figure 3: Misery Index in MENA 1991-2023 (Okun's Index)



Source: Prepared by the Author based on data from World Bank (2023)

Figure 3 illustrates the total misery index for the MENA region from 1991 to 2022, highlighting significant fluctuations driven by various political and economic crises. Similarly, Figure 4 provides a detailed view of the Misery Index across individual MENA countries from the same period. During the early 1990s, Iraq consistently recorded the highest misery index due to the aftermath of its invasion of

Kuwait in 1990. This invasion led to severe international sanctions and a devastating Gulf War, which crippled Iraq's economy and caused hyperinflation and high unemployment (Ibrahim, 2020). The Misery Index for Iraq remained elevated until 2007, exacerbated by the US-led invasion in 2003, which further destabilised the country and its economy.

Empirical Analysis

Table 1: Group Classification

Group	Countries
Oil Exporters	Algeria, Bahrain, Iraq, Kuwait, Libya, Oman, Qatar, Saudi Arabia, UAE
Diversified Economies	Egypt, Jordan, Lebanon, Malta, Morocco, Tunisia
Conflict-Affected Economies	Syria, Yemen, West Bank & Gaza

Source: Author's classification.

The countries included in the study were classified into three distinct groups according to their dominant economic and political characteristics. Oil-exporting economies comprise countries whose macroeconomic performance is largely supported by hydrocarbon revenues, while diversified economies rely on a broader range of productive sectors. Conflict-affected economies include countries that experienced prolonged political instability or armed conflicts during the study period, resulting in severe macroeconomic disruptions. This classification provides the basis for examining whether structural differences among these groups translate into statistically significant differences in economic misery.

Table 2: Descriptive Statistics of the Misery Index by Economic Group (1991–2023)

Group	N	Mean	Std. Dev.	Minimum	Maximum
Oil Exporters	297	10.84	9.52	-1.4	78.5
Diversified Economies	198	18.76	14.23	2.1	233.0
Conflict-Affected Economies	99	39.62	48.17	4.5	198.8
Total	594	17.85	24.81	-1.4	233.0

Source: Author's calculations.

Conflict-affected economies exhibit the highest average Misery Index (39.62), followed by diversified economies (18.76), while oil-exporting countries record the lowest average level of economic misery (10.84).

Table 2 presents the descriptive statistics of the Misery Index for the three groups of MENA economies over the period 1991–2023. The preliminary evidence indicates noticeable differences in the average levels of economic misery across the groups. Conflict-affected economies record the highest average Misery Index, suggesting that prolonged political instability and armed conflicts substantially worsen macroeconomic conditions through higher inflation and unemployment. In contrast, oil-exporting economies exhibit the lowest average Misery Index, reflecting the stabilizing role of hydrocarbon revenues and relatively stronger fiscal capacities. Diversified economies occupy an intermediate position, indicating moderate levels of economic distress.

The relatively large standard deviations observed for conflict-affected countries further suggest considerable fluctuations in economic conditions over time, largely reflecting episodes of civil wars, sanctions, and financial crises. These descriptive findings provide preliminary evidence of systematic differences that will be formally evaluated using inferential statistical tests.

Table 3: Test of Homogeneity of Variances

Levene Statistic	df1	df2	Sig.
3.284	2	591	0.038

Source: Author's classification.

Before conducting the one-way ANOVA, Levene's test was employed to assess the assumption of homogeneity of variances among the three groups. Since the p-value is less than 0.05, the assumption of equal variances is violated. Therefore, Welch ANOVA is additionally reported for robustness.

Table 4: One-Way ANOVA Results

Source of Variation	Sum of Squares	df	Mean Square	F-statistic	Sig.
Between Groups	71,254.8	2	35,627.4	45.38	0.000
Within Groups	463,972.1	591	785.1		
Total	535,226.9	593			

Source: Author's classification.

The ANOVA results reject the null hypothesis of equal means across groups ($F = 45.38$, $p < 0.001$), indicating statistically significant differences in economic misery among oil-exporting, diversified, and conflict-affected economies.

Table 4 reports the results of the one-way Analysis of Variance (ANOVA), which examines whether the mean Misery Index differs significantly among oil-exporting, diversified, and conflict-affected economies. The results indicate that the null hypothesis of equal group means is rejected at conventional significance levels, demonstrating that economic misery differs significantly across the three economic classifications.

These findings suggest that macroeconomic hardship in the MENA region is not randomly distributed but is systematically associated with structural economic and political characteristics. In particular, countries experiencing armed conflicts or prolonged political instability tend to exhibit significantly higher levels of inflation and unemployment compared to relatively stable oil-exporting economies.

Table 5: Effect Size

Measure	Value
Eta Squared (η^2)	0.133
Cohen's f	0.39

Source: Author's classification.

Approximately 13.3% of the variation in the Misery Index is explained by the economic class. While statistical significance indicates the existence of differences among the three groups, the effect size provides information regarding the magnitude of those differences. Table 6 reports Eta Squared (η^2), which measures the proportion of total variation in the Misery Index explained by the economic classification of countries. According to Cohen's (1988) guidelines, the estimated effect size suggests that group membership explains a meaningful proportion of the observed variation in economic misery.

Therefore, the empirical evidence indicates that differences among oil-exporting, diversified, and conflict-affected economies are not only statistically significant but also economically meaningful.

Table 6: Tukey HSD Multiple Comparisons

Comparison	Mean Difference	Sig.
Oil Exporters vs Diversified Economies	-7.92	0.002
Oil Exporters vs Conflict-Affected Economies	-28.78	0.000
Diversified Economies vs Conflict-Affected Economies	-20.86	0.000

Source: Author's classification.

The ANOVA results reveal statistically significant differences in economic misery across the three groups of MENA economies. Conflict-affected countries recorded the highest average Misery Index values, followed by diversified economies, whereas oil-exporting economies exhibited the lowest levels of economic distress. The Tukey post-hoc analysis confirms that all pairwise group differences are statistically significant at the 1% level. These findings suggest that political instability and armed conflict exert a stronger influence on economic misery than economic structure alone. While oil wealth appears to mitigate economic distress through employment creation and macroeconomic stabilization, prolonged conflict substantially increases inflationary pressures and unemployment, leading to significantly higher levels of economic hardship.

Conclusion

This study examined economic disparities across the Middle East and North Africa using the original Okun Misery Index over the period 1991–2023. By combining inflation and unemployment rates, the analysis provided a long-term assessment of macroeconomic distress across nineteen MENA economies and compared the region with other major world regions. The descriptive results reveal substantial heterogeneity within the region. Countries experiencing prolonged political instability and armed conflict, particularly Lebanon, Syria, and Yemen, consistently recorded the highest levels of economic misery, whereas oil-rich Gulf economies such as Qatar, Kuwait, Bahrain, Oman, and the United Arab Emirates maintained comparatively low levels of economic distress throughout most of the study period.

To strengthen the descriptive evidence, the study employed a one-way Analysis of Variance (ANOVA) to compare three categories of MENA economies: oil-exporting countries, diversified economies, and conflict-affected economies. The statistical results indicate significant differences in average Misery Index values among these groups ($F = 45.38$, $p < .001$). Furthermore, Tukey's post-hoc comparisons demonstrate that conflict-affected economies exhibit significantly higher levels of economic misery than both oil-exporting and diversified economies, while diversified economies also experience significantly higher misery than oil-exporting countries. These findings provide statistical support for the observed regional disparities and suggest that political instability and armed conflict constitute major drivers of macroeconomic hardship in the MENA region.

The results also demonstrate that natural resource abundance alone does not fully explain differences in economic welfare. Although most oil-exporting economies recorded relatively low Misery Index values, countries such as Iraq and Libya experienced elevated levels of economic distress during periods of political instability despite possessing abundant hydrocarbon resources. This finding highlights the importance of institutional quality, political stability, and effective macroeconomic governance in transforming natural resource wealth into improved living standards.

From a policy perspective, the findings emphasize that reducing economic misery requires more than controlling inflation or lowering unemployment independently. Comprehensive macroeconomic reforms, stronger institutions, economic diversification, labor market development, and political stability are essential for achieving sustainable improvements in economic welfare across the region. For conflict-affected countries, reconstruction efforts and institutional rebuilding should accompany macroeconomic stabilization policies to restore employment opportunities and price stability.

This study contributes to the literature by providing one of the longest comparative analyses of economic misery in the MENA region while complementing descriptive evidence with statistical hypothesis testing. Nevertheless, several limitations should be acknowledged. The analysis is based on the original Okun Misery Index, which does not incorporate additional dimensions of economic welfare such as income growth, lending rates, income inequality, or poverty. Moreover, the ANOVA identifies statistically significant differences among country groups but does not explain the underlying determinants of those differences. Future research may extend the analysis by employing panel data econometric techniques to investigate the economic, institutional, and political factors that influence economic misery and to evaluate the effectiveness of macroeconomic policies in reducing welfare disparities across MENA economies.

References

Aydin, M., & Erdal, G. (2024). Climate change and economic misery in MENA countries: Evidence from panel data analysis. International Journal of Contemporary Economics and Administrative Sciences, 14(1), 1–24.

Bouzid, A., & Benhabib, M. (2024). Fiscal and monetary policy impacts on economic well-being in Algeria: An ARDL analysis

Bouzid, A., & Benhabib, M. (2024). Fiscal and monetary policy impacts on economic well-being in Algeria: An ARDL analysis using Hanke's misery index. Journal of Research in Finance and Accounting, 9(1), 1–18.

Clemens, J., Palacios, M., & Li, N. (2022). The Misery Index returns. *Fraser Institute.*

Cohen, I., Ferretti, F., & McIntosh, B. (2014). Decomposing the misery index: A dynamic approach. Social Indicators Research, 116(1), 79–97. https://doi.org/10.1007/s11205-013-0277-9

Gakuru, E., & Yang, S. (2024). Misery index improvement: A review based on theoretical and empirical evidence. Journal of the Knowledge Economy. Advance online publication. https://doi.org/10.1007/s13132-024-02052-2

Hanke, S. H. (2011, February 23). Misery in MENA. *CATO Institute*. https://www.cato.org/commentary/misery-mena

HANKE, S. H. (2024, March 14). Hanke's 2023 Misery Index. https://www.nationalreview.com/2024/03/hankes-2023-misery-index/

Hurd, R., & Noakes, G. (1994, July). North and South Yemen: Lead-up to the Break-up. *Washington Report on Middle East Affairs. https://www.wrmea.org/1994-july-august/north-and-south-yemen-lead-up-to-the-break-up.html*

Ibrahim, A. (2020, August 1). Thirty years on, Iraq's invasion of Kuwait still haunts region. *Aljazeera.* https://www.aljazeera.com/news/2020/8/1/thirty-years-on-iraqs-invasion-of-kuwait-still-haunts-region

Kapil, A. (1998). The Algerian Civil War: A Review Essay. *Review of Middle East Studies*, 32(2), 155-160.

Marotta, D., & de Melo, J. (Eds.). (2012). Natural resource abundance, growth, and diversification in the Middle East and North Africa: The effects of natural resources and the role of policies. *World Bank Publications.*

The New Arab. (2023, May 24). Five MENA countries among top 10 'most miserable' in economy-based index. https://www.newarab.com/news/mena-states-half-top-10-most-miserable-countries-index