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Determinants of Income Smoothing Practices in Light of the Recent Pandemic: Evidence from Banks in MEA Region

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Abstract: This study examined the effects of the recent COVID-19 pandemic on income smoothing practices in the banking sector of Middle Eastern and African (MEA) countries. It examined how global geopolitical risk (GPR) and the bank's internal indicators influenced these practices. Focusing on 175 banks across the MEA region with data spanning from 2018 to 2021. This study employed several econometric approaches, i.e., GMM, 2SLS, MMQR and QRPD, to provide robust estimations. The study's scientific novelty is in its thorough analysis of how COVID-19 stringency and global geopolitical uncertainties uniquely impact income smoothing practices, utilising advanced econometric techniques to capture nuances across different regions. The findings revealed that income smoothness has increased in response to stringent COVID-19 measures such as lockdowns and movement controls, with consistent results across various methods. Additionally, the higher global GPR is associated with increased income smoothness. The study also identified varying impacts of bank-specific factors: bank size, and capital adequacy ratio (CAR), generally show positive effects, while return on assets (ROA), cost-to-income ratio (CI), leverage (LEV), and liquidity (LIQ) often have negative impacts, with some variables displaying minimal significance in different quantiles. Practically, the study offers valuable

insights for policymakers and banking sector professionals by highlighting how heightened COVID-19 stringency and geopolitical risks influence income smoothness. This can aid in the development of strategies to manage financial stability and adapt to future economic shocks.

Keywords: Income Smoothness, Bank, COVID-19, MEA, GMM, MMQR, QRPD.

Introduction

The COVID-19 pandemic has had extensive consequences for global economies, and the Middle East and Africa (MEA) region is no different. Amid the pandemic, the Russia-Ukraine war also hit hard the economy. Primarily due to the pandemic measures, i.e., border closing, quarantine, and banning public gatherings, disrupted business operations, created financial uncertainties and posed significant challenges for the operation of the banking sector worldwide, including the MEA region. Besides, the Russia-Ukraine war disrupts the global supply chain and leads the economic crisis one-step ahead. Banking sectors often follow income-smoothing practices to mitigate the negative impacts of the economic shock from these two major events. This study aimed to investigate the impacts of factors of income smoothing practices employed by banks in the MEA region during the COVID-19 pandemic.

The COVID-19 pandemic posed a significant impact on economic activities throughout the world, where the MEA region is not an exception. The pandemic started in the MEA region in early 2020, and while certain nations separately imposed COVID-19 limitations, most MEA nations launched restrictions and mobility controls in March 2020 (Asongu et al., 2021). The restrictions include limiting movement, closing non-essential businesses and public areas, and enforcing social distancing rules that significantly impede economic and financial activities. The services that banks can offer must also be restricted (Banna et al., 2022; Mateev et al., 2021). Due to uncertainties and concerns about a rise in non-performing loans, the banking sector adopted several defensive measures simultaneously. These measures included reducing lending (Ahmed et al., 2022; Mateev et al., 2021), closing certain business activities (Boubaker et al., 2022), raising interest rates on new loans (Ahmed et al., 2022; Hanieh & Ziadah, 2022), reducing the size of the loan portfolio (Ahmed et al., 2022; Mateev et al., 2021), writing off bad loans (Alnabulsi et al., 2022), increasing loan loss reserves (Alnabulsi et al., 2022), requesting regulatory leniency (Boubaker et al., 2022), lowering interest rates paid to depositors (Ahmed et al., 2022; Mateev et al., 2021), and suspending dividend payments (Mateev et al., 2021).

However, few studies have been conducted on the issue in different settings. For example, Ozili (2022) examines the impact of COVID-19 on income smoothness in European Union (EU) banks and finds epidemic quarters experienced higher levels of income smoothness in the selected banks. Beck and Beck (2022) investigated the loan loss position in banks during COVID-19 and discovered that banks followed larger provisions during the early stages of the pandemic and reduced them afterwards. Boubaker et al. (2022) examine the bank performance of Islamic banks from 10 countries during COVID-19 and find that focused banks need a cost-savings strategy for banking efficiency. At the same time, a number of other studies focus on banking sector stability during COVID-19 (Mateev et al., 2021) and bank earning management in Europe and African countries (Ozili, 2023). Concisely, only a few studies focus on the bank income smoothness during COVID-19 and most of those studies focus on EU countries and ignore the MEA region. Moreover, another group of studies emphasises Islamic banks as well as conventional banks of the Middle East and different African countries to examine banking performance. No studies based on our knowledge consider the bank income smoothness during COVID-19 in the MEA region. Therefore, it is urgent to examine the issue and close the literature gaps.

Global geopolitical risk (GPR) has become a growing concern for banks operating in an increasingly interconnected global economy. Academic literature often explores the effect of GPR on the income stability of the banking sector, given the frequent occurrence of GPR events in recent years. Demir and Danisman (2021) state that GPR negatively affects the banking stability, which prompts the bank to adopt an income smoothing policy through low credit disbursement and high economic volatility in EU banks. Phan et al. (2022) acknowledge that a high GPR is responsible for high banking smoothness and harms bank stability in the USA. Ntasis et al. (2021) similarly report that GPR and geopolitical tension have a close link between bank income smoothness portfolio weights and Convex Risk Measures. Additionally, Martins et al. (2023) examine the impacts of geopolitical events of the Russia-Ukraine conflict on European banks' stock return and find it has a far negative impact. However, none of the studies focuses on examining the impact in MEA regions, which motivates us to conduct the current study.

This study examined the bank income smoothness in the context of the Middle East and African (MEA) countries due to some reasons. First, the banking sector is a growing sector of this region and plays a significant role in recent economic development. Therefore, evaluating the role of global affairs on the trajectory of the banking sector in this region is crucial for economic development and grabs decision-makers' attention for effective policy measures. Second, the MEA region is highly volatile with international events and might have a significant impact on bank income smoothness, which deserves to be examined. Third, COVID-19 was a global matter, and this area was one of the worst suffering regions. Additionally, the region is geopolitically sensitive and closely intertwined with global political dynamics, prompting us to analyse the effects of these events on the stability of bank income. Finally, only negligible studies focus on the impact of COVID-19 and bank performance, but rarely does any study examine the impacts of COVID-19 and GPR on bank income smoothness. Moreover, studies mostly focus on European countries (Martins et al., 2023; Ozili, 2022, 2023), North America (Demir & Danisman, 2021; Phan et al., 2022), China (Ntasis et al., 2021) and Russia (Shaik er al., 2023) to examine the issue and ignore the MEA region that provokes us to conduct the current study.

Research Problem

The main objective of the study was to examine the income smoothness practices in banking and financial institutions during the COVID-19 pandemic in the MEA region. Since the global GPR has a major impact on economic and financial issues worldwide, this study also considered examining the impact of global GPR on the income smoothness practices in banking and financial institutions along with COVID-19 in the MEA region. In addition to the previously mentioned macro-level indicators, the study also took into account internal financial metrics specific to banks. These indicators are equally crucial and encompass factors such as bank size, profitability, liquidity, expenses, capital adequacy, and financial leverage.

This study offers several contributions to the current literature through inquiries into the factors that influence income-smoothing practices in the MEA region. First, it delivers insights on income smoothing approaches utilised during the COVID-19 pandemic and also sheds light on the practices the banking sector adopted to control revenue volatility. Second, the study provides comprehensive information regarding the income smoothness practices and financial health of MEA region's banks and financial companies. Besides, this study illuminates the impact of GPR on the income smoothness of the banking sector of the MEA region. Finally, the study also offers unique estimations deploying various econometric models simultaneously to provide robust results.

Research Focus

The main purpose of the study was to examine income-smoothing practices in banking and financial institutions in the MEA region during the COVID-19 pandemic. It also investigated the impact of global geopolitical risk on these practices. The authors focussed on both macro-level indicators and internal financial indicators of banks, such as size, profitability, liquidity, Cost to income, capital adequacy, and financial leverage.

Research Aim and Research Questions

The primary aim of the study was to understand how banks in the MEA region have managed income smoothness during the COVID-19 pandemic and under the influence of global geopolitical risks. In light of the above, the following questions can be asked:

1- How have income-smoothing practices in the MEA region's banks changed during the COVID-19 pandemic?

2- What is the impact of global geopolitical risk on income-smoothing practices in the MEA region's banking sector?

3- Which internal financial indicators significantly influence income-smoothing practices in the MEA region?

By answering these questions, the study sought to provide a comprehensive understanding of the income-smoothing strategies employed by banks in the MEA region, thereby filling a crucial gap in the current literature.

The rest of our study was organised as follows. A critique of prior literature is presented in Section 2. The data, empirical model, and econometric approaches are displayed in Section 3. The descriptive statistics and main findings are presented in Section 4. A comprehensive discussion is included in Section 5. In conclusion, Section 6 offers some policy recommendations and several suggestions for further study.

Literature Review

This literature review aimed to examine existing research and scholarly articles related to the impact of COVID-19, geopolitical risks, and various internal financial indicators of banks on income smoothing practices in banks, with a particular focus on the Middle East and Africa region. This review sought to identify the gaps in the existing literature, highlight key findings, and establish a theoretical framework for the current study.

The financial management in banks seeks to strengthen their financial positions and to obtain greater returns by influencing the users of the financial statements, as studies have shown that the bank's management uses its freedom in the accounting organisation to manage the declared profits (Casciello et al., 2024). The accounting literature distinguishes between the concepts of "Earnings Management" and "Income Smoothing" (Di Fabio et al., 2021; Kolsi et al., 2023).

The first concept expresses the management's desire to reach specific goals, such as increasing administrative incentives, reducing tax payments, etc. (Aggelopoulos et al., 2023; Apergis, 2024). As for the second concept, according to Al-Othman (2019), Bojar (2023), and Kendory et al. (2020), it is one of the standard methods used by the bank's management to manipulate financial statements and control the type of information disclosed in them. Thus, it is designed to remove extreme variations that appear in profits throughout financial periods by applying accounting tools based on the principles of Generally Accepted Accounting Principles (GAAP) (Narayanamoorthy & Wheeler, 2021; Statovci et al., 2021).

Banks resort to different types of income smoothing to reduce income fluctuations resulting from the normal operations of the bank. Taktak (2011) identified two types of income smoothing: natural smoothing and intentional smoothing, the first type appears naturally without the intervention of management through the nature of the bank's business, which in this case is stable. According to Ergin (2011), the second type of income smoothing is deliberately implemented through two methods: Real Smoothing and Procedural Smoothing. Real Smoothing is the result of procedures that the bank's management considers suitable for organising the bank's economic activities to achieve a consistent income. In other words, it involves managers altering economic events to generate revenue (Kazemi & Nouri, 2012). Artificial smoothing is the method referred to by Ibrahim et al. (2020) which occurs when the bank's management manipulates the timing of income recognition through accounting treatments. In addition, this method does not directly affect cash flow.

It is interesting to observe how banks control and direct their income toward certain goals. Researchers have focused on this issue and conducted numerous studies to gain a deeper understanding of the macro and micro variables influencing income-smoothing practices (Husaini & Sayunita, 2016). Indrawan and Damayanthi (2020) studied how profitability, company size, and financial leverage affected income smoothing methods in companies included in the BEI and LQ45 indexes from 2014 to 2018. According to the study's findings, income smoothing is not significantly impacted by profitability. However, they discovered that financial leverage has a favourable effect on income smoothing whereas company size has a negative impact. Dewi (2018) saw profitability variables as key drivers for economic decision-making in different research on the influence of profitability factors on income smoothing policies in banks listed on the Indonesian stock exchange (2010-2016). The study's results revealed that although return on equity did not have a significant impact on income-smoothing practices, return on assets, profit margin, and operating expense ratio did show significant effects. In the same context and using the same previous sample, Herdjiono et al. (2019) attempted to determine the impact of profitability, bank value, bank size, and financial risks on income smoothing practices during the period (2014–2016), their results showed that income smoothing is significantly and favourably influenced by profitability, bank value, and financial risks. The size of the bank had no discernible effect on the use of income smoothing, though.

Ozili (2019) focused on analysing the impact of corruption on income smoothing in African banks, according to the study, banks utilised the loan loss provisions to level out profits, especially in the years after the 2008 financial crisis. However, it was seen that this behaviour was lessened under settings with more investor protection. Additionally, it was shown that banks operating in highly corrupt environments were more inclined to employ income-smoothing strategies. In their analysis, Dantas et al. (2023) examined the impact of government guarantees on income smoothing policies in Eurozone banks. The study showed that changes in government guarantees were significantly correlated with changes in income smoothing methods, either increasing or decreasing. Government guarantees decreased the banks' risk exposure, leading to a decrease in managerial motivation to employ income-smoothing strategies. Consequently, the risk-taking channel became more prominent.

Kutubi et al. (2021) aimed to assess the influence of board members on loan loss provisions in South Asian banks; His research showed that banks with more board members tended to delay the recognition of loan loss provisions, interestingly; it was found that the correlation between the number of board members and income smoothing adhered to a U-shaped pattern. This implies that an optimal number of board members are associated with a greater likelihood of income-smoothing practices. Taktak et al. (2010) conducted an analysis of income smoothing practices in commercial banks operating within the OECD countries. According to the survey, banks employ either loan loss provisions or the sale of commercial securities as their primary techniques for income smoothing. The study also discovered that banks often use real income smoothing more often than artificial income smoothing. It was shown that banks' propensity for income smoothing varied depending on their exposure to certain institutional and preventative restrictions. Additionally, it was found that the presence of secured creditors, the structure of regulatory capital, and the level of capitalisation were all significant factors influencing banks' utilisation of income-smoothing tactics.

The COVID-19 pandemic has had a negative influence on the accuracy of European banks' financial reporting, according to a study by Taylor et al. (2023) that focused on income smoothing procedures. The income smoothing before and during the pandemic era was examined in the research. The research's conclusions showed a marked increase in earnings management throughout the pandemic years, which had an impact on the accuracy of financial reporting. The study further showed that the good corporate governance discouraged the application of earnings management strategies. The practice of income smoothing was further constrained by the accessibility of excellent auditing.

Salem et al. (2021) studied the influence of audit quality on earnings management, specifically loan loss provisions, among MENA conventional and Islamic banks. The study's findings found that particular characteristics such as the existence of BIG4 audit firms, joint audits, the size of the audit committee, and the audit committee's independence all had a role in limiting income-smoothing tactics in Islamic banks. These audit committee processes, however, had no meaningful effect on income smoothing in commercial banks. In another study, conducted by Bouvatier et al. (2014), the focus was on assessing the effects of ownership concentration and the regulatory setting on the income smoothing practices within European commercial banks. The findings revealed that banks with higher ownership concentration tended to adopt the practice of using loan loss provisions to smooth their income. Nevertheless, this behaviour was found to be less prevalent in banks operating under more stringent regulatory frameworks and those subject to higher external audit standards. Moreover, banks with lower ownership concentration did not exhibit similar patterns of income smoothing.

Kilic et al. (2013) investigated to look at how SFAS 133, which deals with accounting for derivative instruments and hedging operations, affected the nature and behaviour of financial reporting. Pre-SFAS 133 (1998–2000) and post–SFAS 133 (2001–2003) adoption periods were examined in the research. The research findings showed that mandatory recognition of hedge ineffectiveness under SFAS 133 reduced banks' ability to partake in income smoothing through derivative instruments. Taylor and Aubert (2022) conducted a study on the potential influence of adopting the International Financial Reporting Standard IFRS 9 on income smoothing practices among commercial banks in Europe and Africa. He concluded that the income smoothing practices of the study sample banks decreased after the adoption of the international standard. This is the same conclusion reached in the study by Ozili (2022) applied to UK banks during the period (1999–2017), emphasising the importance of the quality of governance in reducing income smoothing practices. In a study conducted by Malik et al. (2021), the objective was to understand how fluctuations in profits and strict regulatory measures influence income-smoothing practices among banks listed on the Pakistan Stock Exchange (PSX) from 2010 to 2017. According to the findings, income-smoothing activities tend to decrease when capital adequacy ratios rise due to the implementation of stronger norms and regulations. This illustrates the increased regulatory pressure on banks to maintain compliance. However, the study also revealed that the prevalence of income smoothing procedures rises with higher liquidity ratios and debt ratios. Neslihan Topbaş (2018) conducted another analysis with the goal of evaluating Turkish banks' capital adequacy (according to Basel II) and financial leverage ratio (according to Basel III), as well as their alignment with the business cycle. The results showed that when capital adequacy standards and financial leverage rules are strictly followed, the bank management is put under more pressure to use income-smoothing techniques.

Upon reviewing the existing literature on income-smoothing practices in banking, particularly in the context of external shocks such as the COVID-19 pandemic and geopolitical risks, several research gaps have been identified:

- Regional Focus: While there is substantial research on income-smoothing practices in banks in regions like Europe, North America, China, and Russia, there is a notable lack of studies focusing on the Middle East and Africa (MEA) region. This gap is significant given the unique economic, political, and social dynamics in the MEA region that may influence income-smoothing practices differently compared to other regions.

- The impact of COVID-19: Although some studies have begun to explore the impact of the COVID-19 pandemic on banking practices, comprehensive analyses of how banks in the MEA region have adapted their income-smoothing strategies during the pandemic are scarce. Understanding these adaptations is crucial for developing effective financial policies and strategies for future crises.

- Geopolitical Risks: The influence of geopolitical risks on income-smoothing practices has been relatively underexplored in the existing literature. Given the geopolitical volatility in the MEA region, it is essential to understand how these risks affect banking practices and income smoothness.
- Internal Financial Indicators: Further research is required to delve into the specific internal financial metrics that may influence income-smoothing practices within banks (such as size, profitability, liquidity, expenses, capital adequacy, and financial leverage) significantly influence income-smoothing practices in banks. While some studies have touched upon these factors, comprehensive and region-specific analyses are lacking.
- Innovative Financial Solutions: The role of financial technology (FinTech) in providing innovative solutions to enhance income smoothness during crises is an emerging area of interest. Yet, there is a scarcity of research on how FinTech can be utilised in the MEA region to enhance income-smoothing strategies.
- The identified gaps highlight the necessity for this study, which aims to provide a thorough examination of income-smoothing practices in banks within the MEA region during the COVID-19 pandemic and periods of heightened geopolitical risk. By addressing these gaps, the study will contribute valuable insights to the existing body of knowledge, inform policy and regulatory frameworks, and enhance the financial resilience of banks in the MEA region. This research is not only timely but also essential for understanding and improving income-smoothing practices in a region that has been largely overlooked in previous studies.

Materials and Methods

Research Design

This study employed a quantitative, descriptive, and correlational research design to examine the income-smoothing practices in banks within the Middle East and Africa during the COVID-19 pandemic. A quantitative approach analyses data, while the descriptive aspect provides a detailed account of income-smoothing practices. The correlational design explored the relationships between the severity of the pandemic, geopolitical risks, internal bank factors, and the income smoothing practices. Rigorous statistical methods ensure the accuracy and reliability of the results.

Data

The study sample included the largest 175 banks across 16 countries classified according to the criterion of total assets according to the Asian Banker website during the period (2018-2021). The sample included countries in the Middle East and North Africa (MEA): Qatar, United Arab Emirates, Saudi Arabia, Egypt, Kuwait, Morocco, Jordan, Bahrain, Lebanon, Oman, Algeria, South Africa, Nigeria, Ghana, Kenya, and Mauritius. The financial data related to the study indicators were collected from the annual reports of banks and the Asian Banker database, and the variables of the COVID-19 pandemic and geopolitical risks were collected from the Our World in Data, GitHub, and Matteo Lacoviello databases.

Model Specification

In this paper, an econometric model was developed in order to study the determinants influencing the income smoothing policy practices at banks in the Middle East and North Africa region (MEA), which is expressed in the following form:

$$LLP_{it} = \beta_0 + \beta_1 SIZE_{it} + \beta_2 ROA_{it} + \beta_3 LDR_{it} + \beta_4 CI_{it} + \beta_5 CAR_{it} + \beta_6 LIQ_{it} + \beta_7 LEV_{it} + \beta_8 NC_{it} + \beta_9 ND_{it} + \beta_{10} SI_{it} + \beta_{it} GPR_{it} + \mu_i + \delta_t + \varepsilon_{it} \ldots\ldots (1)$$

Where LLP is the loan loss reserve to gross NPLs, ROA is the return on assets, LDR is the loan to deposits ratio, CI is the cost to income ratio, CAR is the capital adequacy ratio, LIQ is the liquid assets to total deposits and borrowing, LEV is the financial leverage, NC is the number of new cases of COVID-19, ND is the number of new deaths of COVID-19, SI is stringency index, GPR is geopolitical risks, μi is the unobserved bank-specific fixed effects, δt is the time trend, εit is the error term, i = 1,2,3,...175, T = 1,2,3,4.

Estimation Procedures

In this paper, various techniques were employed to estimate equation (1) within the framework of dynamic panel models, i.e., One-step system GMM (Short-run), Two-step system GMM (Short-run) and 2SLS (Bhuller & Sigstad, 2024; Cao et al., 2021; Keane & Neal, 2023). Additionally, we conduct a Long-term analysis using System GMM (Long run) (Breitung et al., 2022; Kruiniger, 2022; Mehic, 2021). In addition to the above analyses, we also utilize different estimation approaches based on a quantile *method*, such as MMQR (Method of Moment Quantile Regression) (Machado & Santos Silva, 2019) and QRPD (Quantile Regression for Panel Data) (Powell, 2021).

Result and Discussion

Descriptive Statistics

Table 1 displays the descriptive statistics of the study. It shows the mean, median, maximum and minimum value, standard deviation, probability, sum, sum sq. dev, observations along with distribution and normality tests. The Skewness test shows the variables are positively skewed. Besides, the Kurtosis and Jarque-Bera tests also indicate the data distributions are normal. Besides, Table 2 provides the correlation matrix, which shows that the variables are negatively and positively correlated.

Main Findings

Table 3 presents the outcomes derived from the Generalized Method of Moment (GMM) analysis, employing one-step system GMM, two-step system GMM, and system GMM in conjunction with two-Stage least squares (2SLS) regression analysis to investigate the variables. Applying one and two-step system GMM for the short run and system GMM for the long run shows that the coefficients of SIZE are positive and significant at a 5% significance level, 2SLS also provides similar results. The results revealed a statistically significant positive effect of the bank's size at a 10% significance level in the short run, as analysed using methods (one-step system GMM, two-step system GMM, and 2SLS). These findings align with the results obtained in the long-run analysis using the method (GMM for the long run). The observed correlation can be explained by the fact that larger banks face increased competitive pressures, leading them to seek comfortable investment options and expand their operations. Moreover, regulatory constraints and the need to maintain customer confidence can further motivate these banks to resort to income-smoothing practices. Khan (2022) finds similar results in the context of Arab Gulf countries. ROA is negative and significant in the short run from one-step system GMM, insignificant in the short run from two-step system GMM, and negative and significant in both 2SLS and long-run system GMM at a 10% and 5% significance level. The study sampled banks experienced significant fluctuations in their profit levels due to the impact of COVID-19, resulting in a decline in profits. This situation exerted pressure on bank managers to ensure the generation of sufficient profits (sustaining profits) to uphold the bank's reputation and fulfil the expectations of shareholders and investors. Several studies suggest that ROA is inversely correlated with income smoothing among banks in African countries (Mandipa & Sibindi, 2022). Though Olarewaju and Msomi (2022) claim that ROA is positive and significant in Bank performance in Sub-Saharan African countries.

The liquidity coefficients (LDR, LIQ) do not directly affect income smoothing practices and lack statistical significance in all estimation methods, both in the short and long run. This lack of significance could be attributed to the stringent and prolonged procedures implemented by banks in response to the COVID-19 crisis in various Middle Eastern and African countries. The crisis may have prompted banks to prioritize other aspects of their operations, causing the liquidity coefficients to have a limited impact on income smoothing practices during this period. Prior studies report that LIQ has mostly positive and significant results in income generation (Malik et al., 2021; Olarewaju & Msomi, 2022).

The effects of CI on income smoothness in the banking sector are negative and significant up to 10% significance level in every analysis. The obtained result can be attributed to the fact that many banks lost control over their costs, which had a negative impact on their financial stability, leading to increased volatility in profits. Additionally, the bank's management may have engaged in investment operations that did not yield profits and incurred high costs. This finding is harmonious with the prior study by Khan (2022). In addition, the coefficients of CAR are positive and significant up to 5% significance level in the short run by one-step system GMM, 2SLS and long-run system GMM, but insignificant in the short run by two-stem system GMM. Indeed, the reason for the lack of significant impact of capital adequacy ratios on income smoothing practices could be linked to the increase in financing costs resulting from higher capital adequacy ratios. This increase may lead to a reduced profit margin for the banks. Additionally, some banks may have entered into commercial activities with high financial risks, incurring costs and exposing themselves to potential losses. These circumstances could have compelled the banks to resort to income smoothing practices as a means of managing the financial challenges and uncertainties they faced during the COVID-19 crisis in the Middle Eastern and African countries. However, a number of studies found a negative and insignificant impact of CAR on income smoothness (Adu, 2022; Khan, 2022; Malik et al., 2021; Neslihan Topbaş, 2018).

Table 1

Descriptive Statistics

	LLP	SIZE	ROA	LDR	CI	CAR	LIQ	LEV	NC	ND	SI	GPR
Mean	108.20	3.81	1.42	73.91	49.16	19.03	38.22	12.83	155355.8	2875.57	28.59	87.622
Median	88.70	3.76	1.20	76.30	47.05	17.80	34.35	12.60	263.50	5.00	17.93	87.32
Maximum	747.30	5.44	8.30	248.80	180.50	55.90	119.80	66.37	2407371.	63028.00	76.19	98.55
Minimum	2.70	2.05	-9.50	10.00	17.30	6.20	5.70	2.10	0.00	0.00	0.00	77.29
Std. Dev.	75.33	0.66	1.44	28.50	18.41	5.85	19.20	4.77	336934.8	8462.61	29.40	7.9527
Skewness	3.10	0.17	0.12	0.27	1.41	2.36	1.06	2.83	4.68	5.57	0.15	0.08
Kurtosis	18.60	2.32	10.66	4.43	8.16	11.92	4.38	26.86	29.60	37.79	1.20	1.63
Jarque-Bera	8230.15	16.64	1716.38	69.29	1009.93	2979.51	187.43	17548.77	23211.03	38935.74	96.46	55.63
Probability	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Sum	75746.3	2671.4	996.25	51741.0	34413.7	13322.0	26754.4	8986.73	1.09	2012903.	20019.97	61335.55
Sum Sq. Dev.	3967339.1	308.63	1460.45	567874.7	237128.9	23982.87	257874.7	15913.88	7.94	5.01	604336.7	44208.77
Observations	700	700	700	700	700	700	700	700	700	700	700	700

Table 2

Correlation Matrix

	LLP	SIZE	ROA	LDR	CI	CAR	LIQ	LEV	NC	ND	SI	GPR
LLP	1											
SIZE	0.28891	1										
ROA	-0.0456	-0.1555	1									
LDR	0.0767	0.3156	-0.2591	1								
CI	-0.22983	-0.3757	-0.3398	-0.0622	1							
CAR	-0.0215	-0.2039	0.4976	-0.1413	-0.2459	1						
LIQ	-0.0717	-0.1758	0.2513	-0.4380	-0.0024	0.3476	1					
LEV	-0.1470	-0.2253	0.41486	0.1254	-0.1061	0.5572	0.1508	1				
NC	-0.0439	0.0778	-0.2002	0.0475	0.1197	-0.0617	-0.0410	-0.0527	1			
ND	-0.0135	0.0240	-0.0949	-0.0387	0.1017	-0.0306	0.0102	-0.0734	0.9267	1		
SI	0.0488	0.0910	-0.2151	0.0072	0.0186	0.0223	0.0086	-0.0588	0.4376	0.3170	1	
GPR	0.0018	0.0872	0.0072	0.0343	-0.0399	-0.0163	-0.0331	-0.0256	-0.0174	-0.0128	-0.0368	1

Table 3 also depicts that LEV is negative and significant up to 10% significance level in both the short and long run by one-step system GMM and system GMM as well as by the 2SLS, at the same time it shows the insignificant result by two-step system GMM. The result provides an explanation that banks heavily rely on debt financing for their activities, leading to interest costs. Moreover, it highlights the inefficiency of the bank's management in making appropriate decisions when granting loans, including failure to assess the financial situation of borrowers and their ability to repay the loans on time. Consequently, some borrowers may face project failures or bankruptcy, resulting in the bank being unable to collect owed amounts and invest them in returns during the delay period. This scenario places additional pressure on the bank to generate profits in order to offset these expenses, particularly amidst heightened risks of default and non-payment resulting from the COVID-19 pandemic. These fluctuations may have compelled the bank's management to resort to the income smoothing policy as a strategy to manage financial uncertainties during such challenging times. The results obtained in this study contradict the findings of both Malik et al. (2021) and Indrawan and Damayanthi (2020), as they reported a positive relationship between the variables.

The results of the table indicate that banks adopted an income-smoothing policy in response to the repercussions of the Corona crisis. This is evident from the positive Coefficients of the Corona crisis indicators ND and SI in both the short and long run. The increase in COVID-19 cases and deaths prompted the implementation of precautionary measures, such as school and workplace closures, restrictions on public gatherings, public transportation closures, media campaigns, and travel controls, which significantly affected economic activity. These actions had an adverse impact on the financial performance of both businesses and individuals, hampering their capacity to obtain loans and settle debts. These adverse consequences were reflected in the banks' operations at various levels, resulting in increased costs and fluctuating profits. Consequently, the banks resorted to engaging in income-smoothing practices. This finding is in line with the results of Taylor et al. (2023). Additionally, a very weak, almost negligible, negative effect was observed for indicator NC. This unexpected result can be attributed to the challenges related to data control and the low-quality auditing procedures during the epidemic. This finding is in line with the results of Kalash (2023), EL-Chaarani et al. (2023), and Ahmed et al. (2022).

Finally, the impacts of GPR are positive and significant up to 10% significance level both in the short and long run as well as in 2SLS. Geopolitical turmoil can have far-reaching effects on various aspects of an economy, including the banking sector. The decline in foreign investments and economic growth, along with reduced confidence in the banking system, can create significant challenges for banks. These challenges include difficulties in meeting customer needs, maintaining sufficient liquidity to handle unexpected challenges, and diversifying to distribute risks effectively. The impact of these factors can lead to a slowdown in banking activity and a reduction in the bank's profitability and growth prospects. As a result, bank managers may feel motivated to engage in income smoothing practices as a way to manage the uncertainties and financial pressures arising from the geopolitical turmoil. For instance, countries like Egypt, Algeria, Qatar, the UAE, Saudi Arabia, and Lebanon have experienced varying degrees of political unrest, popular protests, and geopolitical tensions that could have adverse effects on their banking sectors and overall economies. In such situations, income-smoothing practices may become more prevalent as banks strive to cope with the challenges and maintain stability during these turbulent times. A number of studies have found that the GPR has a very negative effect on bank income stability and thus a positive effect on income smoothing during the recent geopolitical risk issues (Albaity et al., 2023), which agrees with the results of the study in the regions of the Middle East and Africa.

Table 3

Generalised Method of Moment's Estimation (GMM System) and 2SLS

LLP	One-step system GMM	Two-step system GMM	2SLS	System GMM (Long-run)
LLP_{t-1}	0.6815346*	0.5850282 *	-	2.124423
SIZE	21.38988 *	25.53857*	22.21507*	79.25995*

ROA	-4.958596***	-0.975004	-3.395033*	-3.711512***
LDR	0.149517	0.0176903	0.161262	0.3845677
CI	-0.7679547 *	-0.3746116***	-0.652178*	-1.585978**
CAR	1.488288*	-0.2691244	1.644258**	3.315656***
LIQ	-0.158342	0.1322722	-0.024297	-0.2086562
LEV	-3.351396**	-0.0273672	-3.565598*	-3.482354***
NC	-0.0001077*	-0.0000547*	-0.000104*	-0.0002004**
ND	0.0030342*	0.0015986*	0.003280*	0.0055696***
SI	1.021048*	0.3473057**	0.959788*	1.857904**
GPR	3.84464**	1.197442**	4.103035*	6.712108***
Constant	-271.9684*	-93.2538	-308.1263**	-
Number of obs	700	700	700	700
Number of Banks	175	175	175	175
AR(2) p-value	0.102	0.575	-	-
Hansen test- p-value	0.079	0.124	0.199	-

Note. *, **, ***; Indicates significance level in 1%, 5% and 10% respectively.

Table 4 delivers the estimation of the equation deploying the newly developed Method of Moment Quantile Regulation (MMQR). The coefficient of the bank size demonstrates that it has positive and significant impacts on income smoothness from the lower quantiles to the topmost quantile at a 10% significance level. Results also indicate that the size of the bank matters in income generation as shown by the higher coefficients in the top quantiles; the results are consistent with Ammar and Boughrara (2023). The impacts of ROA are highly negative and significant from lower quantiles to upper-medium quantiles up to a 5% significance level; In addition, the higher quantiles from Q (0.70) to Q (0.90) are insignificant. The coefficients of liquidity LDR and LIQ are insignificant in all quantiles. Estimation also shows that in all quantiles the coefficients of CI are negative and significant at 10%. The impacts of CAR are insignificant in the first three quantiles, while in the rest of the top quantiles it shows positive and significant results up to a 5% significance level. The results are mostly in line with the findings of the GMM and 2SLS. At the same time, some of the previous studies found somewhat similar results in different regions and countries Ben Lahouel et al. (2022) and Zhang et al. (2022).

The Table shows the coefficients of LEV are negative and significant up to 10% significance level in all quantiles. At the same time, it also indicates that the higher the LEV rate the lower the income smoothness rate. The impacts of NC on the income smoothness of the banking sector are constantly negative and significant in all quantiles (Relatively weak effect). Contrarily, the coefficients of ND are positive and significant from lower to upper quantiles. Additionally, the coefficients of SI are positive and significant at a 10% significance level from lower quantiles to medium quantiles, while the coefficients are insignificant from medium to upper quantiles when the SI rate is higher. According to this, the COVID-19 crisis appears to reinforce income-smoothing practices. The extensive economic disruptions, heightened uncertainties, and shifts in consumer behaviour have significantly affected the financial performance of banks. Overall, the COVID-19 crisis has likely heightened the relevance and use of income-smoothing practices as banks strive to navigate uncertainties and maintain stability in their financial reporting.

Finally, the coefficients of GPR are mostly positive and significant at a 10% significance level from the third quantile to the top quantiles. In periods of heightened geopolitical risks, banks may encounter heightened financial volatility, increased credit risks, and difficulties in sustaining stable earnings. To address these uncertainties, banks may engage in income-smoothing strategies. The convergence of findings from multiple studies on the relationship between COVID-19, GPR, and income smoothing practices reinforces the significance of these factors in shaping banks' financial strategies during times of crisis and geopolitical instability. Understanding these dynamics can aid policymakers, regulators, and financial institutions in developing effective risk management measures and promoting transparency in financial reporting Phan et al. (2022), Shabir et al. (2023) and Taylor et al. (2023). Additionally, Figure 1 depicts the impacts of the considered independent variable on the dependent variable graphically in different quantiles.

Table 4

Method of Moment Quantile Regression (MMQR)

Variables	Location	Scale	Q(0.10)	Q(0.20)	Q(0.30)	Q(0.40)	Q(0.50)	Q(0.60)	Q(0.70)	Q(0.80)	Q(0.90)
SIZE	23.99*	7.856	14.391*	16.292*	17.823*	19.104*	20.865*	22.586*	25.797*	29.008*	36.939*
ROA	-3.83***	-0.737	-2.931**	-3.102**	-3.255*	-3.377**	-3.532**	-3.691**	-4.005	-4.301	-5.045
LDR	0.059	-0.024	0.089	0.083	0.079	0.075	0.069	0.064	0.054	0.044	0.019
CI	-0.612*	-0.132	-0.450*	-0.482*	-0.508*	-0.53*	-0.559*	-0.588*	-0.642*	-0.696*	-0.832**
CAR	1.22**	0.88	0.14	0.36	0.53***	0.67**	0.87**	1.06**	1.42**	1.78**	2.67***
LIQ	-0.152	-0.189	0.079	0.033	-0.003	-0.034	-0.076	-0.118	-0.195	-0.273	-0.465
LEV	-2.026*	-0.981	-0.871**	-1.064*	-1.256*	-1.416*	-1.635*	-1.851*	-2.252*	-2.652*	-3.643**
NC	-0.00009*	-.00003	-0.00005*	-0.00006*	-0.00006*	-0.00007*	-0.00008*	-0.00008*	-0.00009*	-0.0001*	-0.0001**
ND	0.003*	0.001	0.001**	0.001*	0.001*	0.002*	0.002*	0.002*	0.003*	0.004*	0.005**
SI	0.457**	0.0261	0.137	0.200***	0.251**	0.294**	0.352**	0.410**	0.517**	0.623***	0.887
GPR	1.007	0.888	-0.085	0.128**	0.302*	0.447*	0.645*	0.841*	1.204*	1.566*	2.464*
Constant	-38.56	-56.96	31.03	17.284**	6.155	-3.130	-15.866	50.287**	-51.648	-74.879	-132.40
Obs	700	700	700	700	700	700	700	700	700	700	700

Note. *, **, ***; Indicates significance level in 1%, 5% and 10% respectively.

Figure 1

Estimations by the Method of Moment Quantile Regression (MMQR)

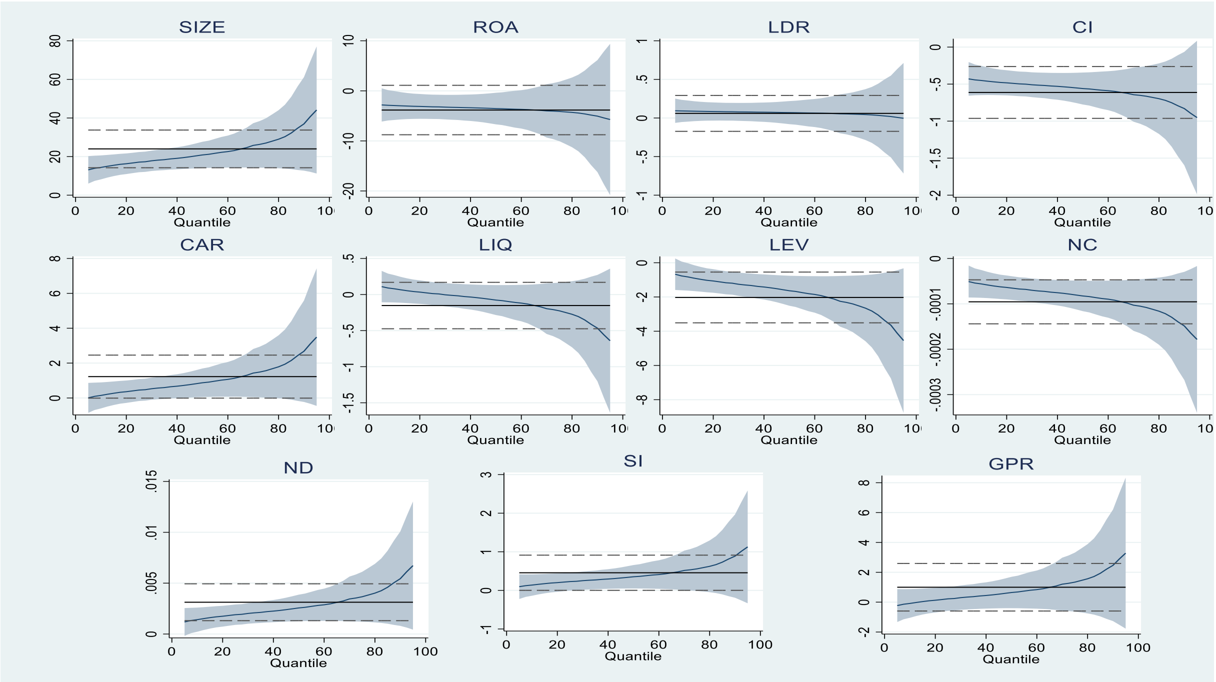


Table 5 presents results from quantile Regression for Panel Data (QRPD) on the explanatory variables. Size has consistently positive and significant effects in all quantiles. ROA has negative effects from lower to upper-medium quantiles, but positive and significant results in top quantiles Q (0.80) and Q (0.90). LDR is insignificant for all quantities; thus, the variable represented does not have a consistent or meaningful impact on the dependent variables being studied across all scenarios or measurements. CI has consistently negative and significant effects in all quantiles. CAR At the same time is positive and significant over all quantities and the effect size increases with increasing quantities. LIQ is Significant and negative in all the upper and lower quantities, except for the medium quantities Q (0.50) and Q (0.60) which are insignificant. LEV and NC are negative and significant in all quantiles at a 5% significance level. SI and GPR are positive and significant in all quantiles at a 5% significance level; the effect is greater at higher quantiles. The results closely align with the findings presented in Tables 3 and 4, demonstrating the consistent impact of the factors considered on income smoothness within the banking sector of MEA countries. The estimations are mostly identical to the findings of Table 3, and 4 that indicating the consistency of the impacts of the considered factors in income smoothness in the banking sector of MEA countries.

Table 6 show the coefficients of the focused variables from the MMQR approach as robustness of the estimations by the other econometric approaches. "In this part, the previous model was re-estimated by using an important dependent indicator expressing the income smoothing policy (ECKEL Index). The ECKEL Index is calculated as the absolute value of the coefficient of variation in income divided by the coefficient of variation in the bank's profits. A lower value of the ECKEL Index suggests that the bank may be engaging in income smoothing practices 1 $(Eckel\ index \leq 1)$. The coefficients of Table 6 are mostly consistent with the previous estimations, which support the findings of the study. At the same time, Figure 2 depicts the robustness of the findings graphically by MMQR, which is also in line with the estimations of MMQR in Figure 1.

Table 5

Quantile Regression for Panel Data (QRPD)

Variables	Q(0.10)	Q(0.20)	Q(0.30)	Q(0.40)	Q(0.50)	Q(0.60)	Q(0.70)	Q(0.80)	Q(0.90)
SIZE	19.06*	15.59*	17.95*	20.13*	20.53*	19.00*	26.21*	43.06*	45.57*
ROA	-1.771*	-3.397*	-2.851*	-4.122*	-4.169*	-4.235*	2.603*	6.533*	6.305*
LDR	0.012	0.018	-0.008	-0.019	-0.017	0.002	0.001	-0.096	0.016
CI	-0.326*	-0.413*	-0.266*	-0.435*	-0.290*	-0.671*	-0.478*	-0.446*	-0.575*
CAR	0.040*	0.648*	0.393*	0.688***	0.913*	0.659*	0.914*	1.579*	1.115*
LIQ	-0.072***	-0.210*	-0.039**	-0.128*	-0.026	-0.218	-0.007	-0.402*	-0.128*
LEV	-0.226**	-1.010*	-1.105*	-1.283*	-0.937*	-1.312*	-1.968*	-2.052*	-3.674*
NC	-0.00003*	-0.00005*	-0.00003*	-0.00003*	-.00003**	-.00006*	-0.00003*	-.00002*	-0.00006*
ND	0.0009*	0.001*	0.0008*	0.001**	0.0008**	0.002*	0.0008*	0.001*	0.004*
SI	0.261*	0.247*	0.219*	0.331*	0.248*	0.318*	0.340*	0.333**	0.934*
GPR	0.449*	0.289**	0.536*	1.009*	1.174*	0.324*	1.167*	0.823**	3.839*
Obs	700	700	700	700	700	700	700	700	700

Note. *, **, ***; Indicates significance level in 1%, 5% and 10% respectively.

Table 6

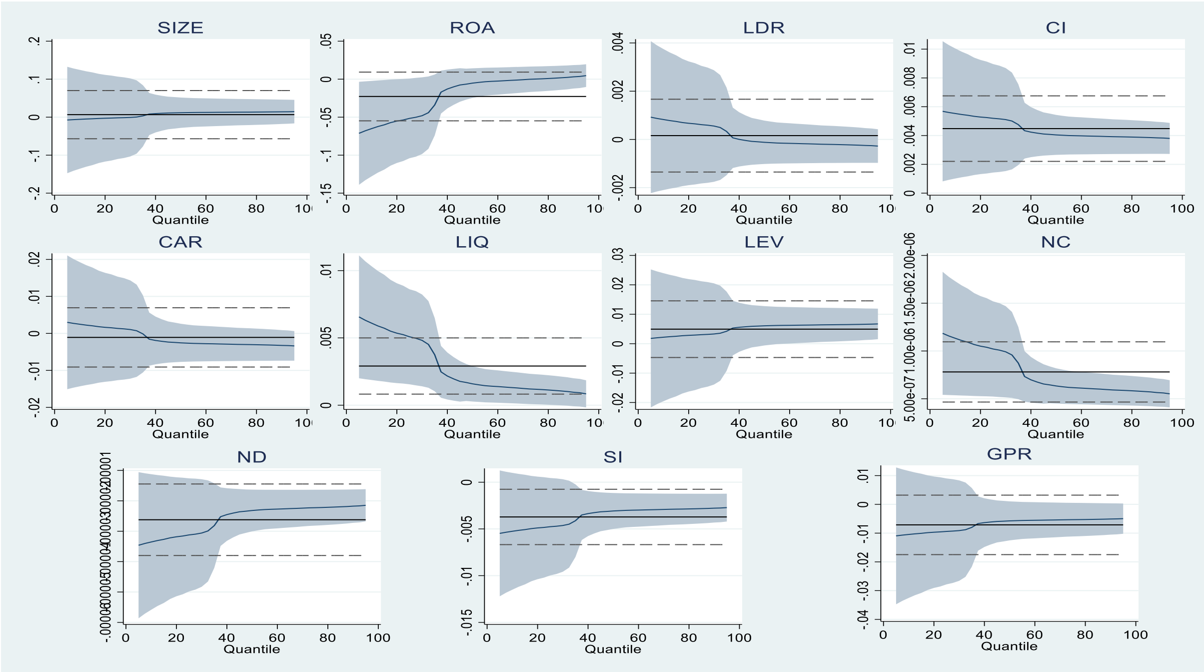
Robustness Check by Method of Moment Quantile Regression (MMQR)

Variables	Location	Scale	Q(0.10)	Q(0.20)	Q(0.30)	Q(0.40)	Q(0.50)	Q(0.60)	Q(0.70)	Q(0.80)	Q(0.90)
SIZE	0.006	0.007	-0.005	-0.002	-0.0007	0.009	0.011	0.012	0.013	0.013	0.014
ROA	-0.022	0.026	-0.065**	-0.055**	-0.048**	-0.012	-0.005	-0.002	-0.0006	0.0008	0.003
LDR	0.0001	-0.0004	0.0008	0.0006	0.0005	-0.000002	-0.0001	-0.0001	-0.0001	-0.0002	-0.0002
CI	0.004*	-0.0004	0.005**	0.005*	0.005*	0.004*	0.004*	0.003*	0.003*	0.003*	0.003*
CAR	-0.001	-0.0006	0.0024	0.001	0.001	-0.001	-0.002	-0.002	-0.002	-0.003	-0.003
LIQ	0.002*	-0.002*	0.006*	0.005*	0.004*	0.001**	0.001**	0.001**	0.001**	0.001**	0.0009***
LEV	0.004	0.001	0.002	0.002	0.003	0.005	0.006***	0.006**	0.006**	0.006**	0.006**
NC	0.0000*	0.0002**	0.000001*	0.000001*	0.000009*	0.0000006*	0.0000006*	0.0000006*	0.0000005*	0.0000005*	0.0000005*
ND	-0.0002*	0.00004	-0.00003*	-0.00003*	-.00003*	-0.00002*	-0.00002*	-0.00002*	-0.00002*	-0.00002*	-0.00002*
SI	-0.0037*	0.0009	-0.005	-0.004**	-0.004**	-0.003*	-0.003*	-0.002*	-0.001*	-0.002*	-0.002*
GPR	-0.0071	0.002	-0.0104	-0.009	-0.0009	-0.006*	-0.005***	-0.005***	-0.005***	-0.005***	-0.005*
Constant	0.957***	0.316	0.456	0.573	0.657	1.074	1.166*	1.197*	1.219*	1.237*	1.264*
Obs	700	700	700	700	700	700	700	700	700	700	700

Note. *, **, ***; Indicates significance level in 1%, 5% and 10% respectively.

Figure 2

Robustness Check by the MMQR Graphically



Limitations of the Study

Despite its comprehensive approach, the study has several limitations that impact the generalizability of its results. These include variations in data quality from banks in the Middle East and Africa, a regional focus that restricts the applicability of findings to other areas, and the specific context of the COVID-19 pandemic, which may not be representative of different periods or future crises. Additionally, the study may not fully account for all relevant internal bank factors and faces methodological constraints, such as potential biases in statistical models. The study is also limited by its sample size and duration. These limitations should be taken into account when interpreting the results. Future research could address these issues by incorporating more diverse datasets, expanding the geographical scope, and extending the study period.

Conclusions

The study examined the impacts of COVID-19 on the banks' income smoothness practices in the context of MEA countries. It was also scrutinised how global geopolitical risk (GPR) affects income smoothness practices of the banking sector in the regions. The study focused on 175 banks in MEA regions based on the data availability from 2018 to 2021 to investigate income smoothness practices. To do so, this study employed several econometric approaches, i.e., GMM, 2SLS, MMQR and QRPD, to provide robust estimations. The study found that the income smoothness increases due to COVID-19 stringency in the banking sector of the MEA region due to the COVID-19 lockdown measures, stringency, and movement control by the consistent results from the different methods. While high global GPR similarly contributes to increasing the level of income smoothness in the banking sector in the MEA region. At the same time, bank size, CAR, and ND show mostly positive effects, while ROA, LDR, CI, LIQ and LEV show negative impacts with some minimal insignificant effects for most of the variables in different quantiles. In summary, the estimations indicate that higher COVID-19 stringency and increased global geopolitical risk (GPR) are associated with a greater use of income smoothing practices within the banking sector in the MEA region.

The study provided some policy implications for academics, practitioners, and policymakers. First, authorities should mandate banks to conduct rigorous stress testing and scenario analysis to assess their resilience to adverse economic conditions. Through this exercise, banks will be better prepared for upcoming crises and will be able to identify any weaknesses in their income-smoothing procedures. The development of proper risk management and capital adequacy strategies might be based on it as well. Besides, prohibiting or limiting specific income smoothing methods could skew the genuine financial image of banks in light of the potential risks involved. For instance, during economic upswings, it is important to rigorously monitor and regulate any aggressive provisioning techniques or excessive loan-loss reserve releases. Besides the MEA region, policymakers from other parts of the world can leverage the insights of this study to strengthen bank income smoothness during any crisis.

Despite the valuable insights provided by this study, several limitations should be acknowledged. First, the analysis is based on micro panel data due to data constraints, which may limit the scope of the findings. Future research could address this limitation by utilising macro panel data to provide a broader perspective on bank income smoothing. Second, this study focuses solely on the impacts of COVID-19 and global geopolitical risk (GPR). Future studies could enhance the analysis by incorporating additional factors such as internal governance, financial structure, and financial development alongside COVID-19 and global GPR. Lastly, while this study examines the banking sector in MEA countries, the widespread impact of COVID-19 and elevated global GPR following the Russia-Ukraine war affected banking sectors globally. Future research could benefit from focusing on specific countries, groups of countries, or clusters of banking and financial sectors to provide more targeted insights and further enrich the literature.

Suggestions for Future Research

With the continued impact of the COVID-19 pandemic on the global economy, studying the determinants of income smoothing policies has become crucial. There is a need to explore the impact of various government policies, such as wage support, tax exemptions, and fiscal stimulus, on the ability of individuals and companies to smooth income during crises. Furthermore, the financial sector and financial technology (FinTech) play a pivotal role in providing innovative solutions that help improve income smoothing, necessitating a deeper examination of their roles.

Consumption behaviours have been significantly affected during the pandemic, and it is important to understand how these changes have influenced individuals' income smoothing strategies. Research should also focus on low-income households and how they have managed the economic impacts of the pandemic, in addition to analysing the impact of the pandemic on the informal sector and its income smoothing strategies.

It is also essential to study the factors that enhance the financial resilience of individuals and companies in the face of economic crises and how to improve them in the future. Financial education and training play a significant role in enhancing individuals' ability to smooth income during crises, and thus this area requires further research.

Moreover, the income smoothing strategies vary based on geographical and cultural differences between countries and regions, necessitating an exploration of these differences to better understand effective practices in diverse contexts. The psychological and social impacts of the pandemic on individuals and how they cope with income smoothing challenges cannot be overlooked.

Finally, digital transformation and technological changes play an increasingly important role in the income smoothing, as technology can provide innovative and effective solutions for dealing with crises. Therefore, future research should focus on these multiple aspects to gain a deeper understanding of the policies and strategies that enhance the ability to smooth income in the face of economic crises.

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Conflict of Interest

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