Institutions and Economies
Vol. 18, No. 2, April 2026, pp. 255-284 https://doi.org/10.22452/IJIE.vol18no2.10

Assessing the Effect of Dynamics of Oil Prices on Banking Sector Profitability: Evidence from UAE

Osman Sayid Hassan Musse,[a] Ashurov Sharofiddin,[b] and Abdukadir Abdullahi Sheik-Abdukadir[c]

Abstract: *This study investigates the impact of oil price dynamics and other determinants on the profitability of banking sector. The analysis covers a six-year period, from 2017 to 2022, utilising panel data methods. The focus is on the United Arab Emirates' banking sector, examining 10 banks, comprising both conventional and Islamic financial institutions. The random effects model results reveal a significant positive relationship between oil price dynamics and bank profitability, affirming the economic importance of oil. Loan loss provisions and leverage ratios exhibit negative and significant effects on profitability, underscoring prudent risk management needs and balanced leverage management to ensure sustained profitability. Deposit growth, deposit ratio, and income diversification positively and significantly influence bank profitability, reflecting opportunities to bolster performance. The study also uncovers a negative and significant correlation between cost efficiency and bank profitability, indicating the significance of cost efficiency in determining the profitability of the UAE banking sector. The findings have strategic implications for stakeholders to capitalise on oil revenue flows while supporting policies that account for asset quality, operational efficiency, and revenue diversification to drive long-term profitability and stability in the banking sector. The study suggests that future research should expand the sample size to include the GCC banks, in order to more comprehensively examine the effect of oil prices on banking sector profitability.*

Keywords: Oil price; Oil-exporting country; Loan loss provisions; GCC; UAE; Banking sector; Profitability
JEL Classification: G20, G2, G28

[a] Corresponding author. Faculty of Management Science, SIMAD University, Mogadishu, Somalia. *Email: osmansayid@simad.edu.so*
[b] Institute of Islamic Banking and Finance, International Islamic University Malaysia, Kuala Lumpur, Malaysia. *Email: ashurov@iium.edu.my*
[c] Faculty of Management Science, SIMAD University, Mogadishu, Somalia. *Email: deex441@simad.edu.so*

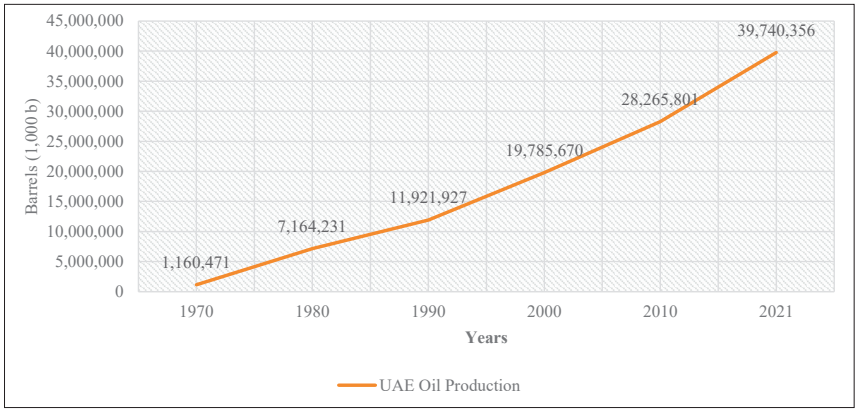
1. Introduction

Oil plays a crucial role in stimulating economic growth and serves as a cornerstone in various industries. Often referred to as 'black gold', its significance lies in its contributions to energy supply, industrial applications, and overall economic development (Sunley et al., 2003). Gulf Cooperation Council (GCC) countries collectively hold a substantial role within the Organization of the Petroleum Exporting Countries (OPEC). Among the 13 OPEC members, Saudi Arabia, the United Arab Emirates, and Kuwait contribute over half, or 56.13%, of yearly crude oil production (OPEC, 2024). The UAE, the focal point of this study, holds a noteworthy global position, standing sixth in proven oil reserves, estimated at 111 billion barrels (OPEC, 2022). Approximately 30% of the UAE's gross domestic product comes from oil revenue, producing an average of 2,718 million barrels of petroleum and liquids per day (CBUAE, 2022). This suggests that any shock in oil prices, particularly falling prices, can directly disrupt the government budget, development programmes, economic activities, and banking profitability. On the other hand, this substantial revenue has enabled the UAE to invest in non-hydrocarbon sectors such as trade, tourism, air transport and airports, real estate, health services, financial and banking services, and renewable energy to diversify its economies and sources of income (OPEC, 2022; Uppal, 2023).

In oil-producing nations, economic activities are intrinsically linked to the fluctuating dynamics of oil prices, affecting government revenues, spending patterns, and international reserves, which is crucial for banking liquidity and exchange rate stability (Kandil & Markovski, 2019). Given the UAE's reliance on oil revenue, its economy and banking sector are highly vulnerable to the effects of oil price shocks. During periods of rising oil prices, oil-producing countries and their banking sectors benefit from the additional revenue. However, this dependency also means that downturns in oil prices can significantly impact their economic stability and banking profitability. Figure 1 illustrates the steady upward trend in yearly UAE oil production from 1970 to 2021. This increase in oil output has resulted in a corresponding rise in oil revenue, paving the way for anticipated economic growth and supplying ample liquidity for the expansion of the UAE's banking and financial sectors. As a result, this growth trajectory has notably contributed to bolstering the overall profitability of these sectors, marking a

significant development for the country's economic landscape.

Figure 1: UAE oil production from 1970 to 2021



Source: OPEC

The UAE serves as a pivotal regional financial centre and a significant financial hub for the Middle East (Caruana & Khan, 2007), boasting the largest banking assets in the GCC region, totalling USD748.5 billion (Chamber, 2018). The UAE's banking system serves as the foundation of the financial industry, providing a comprehensive range of retail and corporate services to both private and public sectors. The banking landscape comprises 51 banks, including 21 foreign institutions and seven GCC-based banks. However, the number of branches for national banks decreased from 526 in September 2021 to 506 in September 2022. This decline was primarily driven by bank mergers and the growing shift towards digitalisation, as more banks increasingly adopt electronic banking services to enhance efficiency and meet evolving customer preferences (CBUAE, 2023). The fluctuations in oil prices significantly impact oil-dependent nations, influencing economic activities, government budgets, and the profitability of banks (Albulescu, 2022). Oil price movements play a crucial role as a macroeconomic variable in oil-exporting countries, affecting banking profitability.

The GCC region heavily depends on energy price movements, particularly oil, and its economic performance is intricately linked with the dynamics of oil prices. Rising oil prices may boost banking activities by increasing deposit volumes, lending, and financing activities, which

positively affect bank profitability. Conversely, a decline in oil prices reduces oil revenue, which can impact liquidity, decrease overall consumption, and negatively affect banking activities. Despite this connection, the existing literature has not given sufficient attention to examining the crucial relationship between oil price movements and the profitability of banks in GCC countries and other oil-dependent nations. Given the sensitivity of the financial market and banking sector to oil price shocks, this study aims to fill this gap by investigating the implications of oil price dynamics and bank-specific factors on the profitability of UAE banks, encompassing both conventional and Islamic banks.

The primary objective of this study is to explore the impact of oil price dynamics on the profitability of the UAE's banking sector throughout the period of 2017 to 2022. Additionally, the study aims to examine the effect of other determinants such as loan loss provisions, deposit growth, deposit ratio, leverage ratio, cost efficiency ratio, income diversification, and size on the profitability of the UAE's banking sector. Therefore, the main focus of this study is to answer the following primary question: How do oil price dynamics, along with specific bank characteristics, affect the profitability of UAE banks in an oil-producing country? Given the crucial role of oil revenue in economic development and banking activities such as deposits, lending, and overall financial stability, this study aims to provide valuable insights into these interdependent relationships and their implications for the banking sector.

The subsequent sections of this paper are organised as follows: Section 2 presents the literature review, Section 3 outlines the data and research methodology, Section 4 presents the empirical results, and Section 5 concludes the study.

2. Literature Review

Return on assets (ROA) is utilised as a metric to gauge the profitability of banks. It indicates the bank's proficiency in generating earnings from its asset management operations (Kohlscheen et al., 2018). It serves as the principal ratio employed for evaluating bank performance, as highlighted in several various studies (Siddique et al., 2022; Kohlscheen et al, 2018); Usman & Yakubu, 2019; Dalci, 2018; Moussa, 2019). ROA is employed here to analyse the impact of oil price dynamics along with other determinants

on the profitability of selected UAE banks. The paper examines several variables that impact the profitability of the UAE banking sector. These variables include oil price dynamics, loan-loss provisions, capital adequacy ratio (CAR), deposit growth, deposit ratio, leverage ratio, cost efficiency ratio (CER), income diversification, and size. However, the existing literature yields mixed results regarding the influence of these factors on ROA, the profitability measure. The following section of the paper provides a detailed discussion of previous empirical studies, presenting a comprehensive summary, addressing the relationship between the dependent and explanatory variables and their dimensions, and developing the hypotheses.

2.1 Oil price dynamics and banking profitability

Oil price fluctuations hold paramount significance for oil-exporting countries, as their economic activities and government expenditures heavily rely on the revenue generated from crude oil inflows. The banking sector plays a vital role in economic development, serving as a key pillar that enables the mobilisation of funds, facilitates trade financing, supports construction projects, and promotes investment in various sectors. Consequently, the volatility of oil prices can significantly impact the liquidity and profitability of the banking sector. Ibrahimov (2016) studies the impact of oil prices on Azerbaijan's banking sector, revealing a positive and significant correlation between oil prices and bank profitability, underscoring the pivotal role of the oil industry in the country's financial landscape. Hasanov et al. (2018) arrive at a similar conclusion, highlighting that an increase in oil prices has a positive and significant effect on the profitability of the banking sector in Azerbaijan.

In contrast, Albulescu's (2022) analysis of 17 publicly listed Russian banks between 2008 and 2016 scrutinises the influence of international oil prices on bank stability in an oil-dependent country. The study reveals that an upsurge in oil prices has a positive, long-term effect on the stability of Russian public banks, whereas negative shocks resulted in adverse consequences. Additionally, Ibrahim (2019) investigates the potential impact of oil price fluctuations on the financial and real sectors of the GCC covering the period from 2000 to 2016. The study highlights significant macro-financial linkages, indicating positive effects of oil price changes on bank profitability in oil-exporting GCC countries. This aligns with the findings of the previous two studies.

The positive and significant effect of oil prices on banking profitability is well documented in the literature. While oil prices have experienced complex fluctuations, increases in oil prices generally benefit oil-producing countries. However, there is concern about negative shocks, such as the sudden price drops experienced during events like the Covid-19 pandemic. These shocks can negatively impact oil revenue cash flow, affecting the national budget, economic growth and banking profitability (Jabeur et al., 2021). Building on the reviewed literature, the study proposes the following hypothesis:

H_1 Oil prices have a positive association with the profitability of the UAE banking sector

2.2 Capital adequacy ratio and banking profitability

CAR is a metric that assesses a bank's ability to meet its financial obligations during periods of economic stress. It is calculated as a percentage of total equity to total assets. This ratio accurately reflects a bank's financial health with a higher equity-to-assets ratio indicating greater financial stability and reduced reliance on external funding (Majeed & Zainab, 2021). It serves as a measure of a bank's soundness, representing the organisation's capacity to endure abnormal losses and demonstrating its strength and stability during crises (Khan et al., 2020). Al-Mamun et al. (2022) examine the relationship between bank performance and capital adequacy in Bangladesh using 20 listed conventional banks over a 10-year span from 2010 to 2020 employing correlation and multivariate fixed effect regression analysis. They find that capital adequacy correlates negatively and significantly with profitability measures, i.e., ROA and return on equity (ROE). While it is true that the CAR is a key measure of a bank's financial health, with a higher ratio indicating greater independence from external funds, an increasing CAR can also suggest that a significant portion of cash is being held in the treasury rather than being invested in potentially profitable ventures. This scenario highlights a trade-off where the bank's financial stability and resilience may come at the cost of lower profitability due to idle cash reserves that are not generating returns. Hence, the following hypothesis is formulated:

H_2 The capital adequacy ratio is associated with the profitability of the UAE banking sector

2.3 Loan loss provisions and banking profitability

Banks establish loan loss provisions to anticipate future losses on existing loan portfolios (Hlawatsch & Ostrowski, 2010). Bank managers possess significant discretion in determining these provisions, primarily relying on historical data, economic conditions, and market trends (Anandarajan et al, 2005). Provisions play a vital role in prudential risk management and the assessment of capital adequacy, while also serving as a significant indicator in the market (Dziobek, 1996). This method serves as a mechanism for ensuring solvency and capitalisation in the event of failures. In the context of Islamic banks, loan loss provisions refer to the deduction of a bank's net income to account for the failure of a financing contract or non-performing loan (Zulfikar & Sri, 2019). However, the existing literature presents a range of findings on this matter. Fernando and Ekanayake (2015) observe a positive correlation between loan loss provisions and profits before tax. On the contrary, Ahmed et al. (2014), using ROA and ROE as proxies for profitability, conclude that there is a negative relationship between loan loss provisions and profitability in Pakistan. Similarly, Mustafa et al. (2012) analyse the effects of loan loss provisions on the performance of Pakistani banks over the period of 2001 to 2009, and suggest a negative relationship between loan loss provisions and profitability. However, most findings agree that loan loss provisions are correlated negatively with bank profitability. This is primarily because loan loss provisions are deductions from bank profits, intended to cover potential losses from non-performing loans, which in turn reduces overall profitability. Therefore, this study develops the following hypothesis:

H_3 Loan loss provisions have a negative association with the profitability of the UAE banking sector

2.4 Deposit growth and banking profitability

Deposit growth serves as a cost-effective financing option, offering the essential liquidity required for smooth bank operations (Gul et all., 2011). It

is a percentage change in total deposits, serving as an indicator of the bank's capacity to both attract and maintain deposits. Elevated deposit growth may signify a strong confidence from customers in the institution, whereas sluggish or negative growth might signal economic uncertainties. The percentage change in total deposits is declining in the United States, causing banks to lose a stable source of funding. This trend exposes banks to interest rate risks, potentially adding pressure on profits, liquidity, and overall risk, which could affect the safety and soundness of the banking industry (Genay, 2000). Successful banks manage to attract more deposits or maintain their current deposit levels because deposits provide the necessary liquidity and cash to offer financing, ultimately increasing their profitability. Consequently, the following hypothesis is formulated.

H_4 Deposit growth has a positive association with the profitability of the UAE banking sector

2.5 Deposit ratio and banking profitability

Deposit ratio represents the percentage of total deposits to total assets, serving as a key indicator for analysing the liquidity ratio (Ferrouhi, 2018). Deposits are the funds credited to a bank account, recognised as a cost-effective source of the bank's funds. The bank aggregates these funds and lends them to borrowers, charging them a higher interest rate and profiting from the interest rate spread. Consequently, banks function as intermediaries between depositors and borrowers (Gobat, 2023). In this context, deposits exhibit a positive correlation with bank profitability. On the other hand, deposits form a part of the bank's liabilities, necessitating the repayment of the principal amount along with interest payments. This implies that increased payments to deposit holders may potentially reduce the bank's profits. The impact of deposits on bank profitability largely hinges on economic conditions and specific bank characteristics. Hasanov et al. (2018) examine the determinants of bank profitability in Azerbaijan, including the deposit ratio, and conclude that deposits are negatively associated with the profitability of banking sector. In contrast, Das (2020) discovers that the advance-deposit ratio exerts a positive and significant influence on ROA, thereby fostering positive effects on the financial health of banks. This suggests that there is a positive and significant relationship between deposit

ratio and bank profitability. This is crucial because deposits are considered the cheapest source of funds, allowing banks to profit from them. Based on these insights, this study proposes the following hypothesis:

H_5 Deposit ratio exhibits a negative association with the profitability of the UAE banking sector

2.6 Leverage ratio and banking profitability

The study employs total liabilities to total assets as a measure of leverage. This ratio serves as an indicator of the debt-equity structure of a bank. It assesses the financial health of a company and its capacity to repay financial obligations (Ross et al., 2010). Companies with higher liquidity tend to finance their operations and business activities using internal funds, such as retained earnings, rather than seeking external funds, like debt (Eriotis et al., 2007). Therefore, an increase in the leverage ratio in a firm's debt-equity structure restricts managers' control over the company's wealth and helps alleviate issues related to free cash flow (Jensen & Meckling, 1976), providing a tax shield due to interest payments. Ahmed and Afza (2019) also reveal that liquidity has a positive and significant impact on a firm's performance. This is because debt financing is typically cheaper than equity financing and offers tax deductions from interest payments, which can enhance profitability. As such, the following hypothesis was developed:

H_6 Leverage ratio has positive association with the profitability of the UAE banking sector

2.7 Cost efficiency ratio

CER serves as a metric for measuring the efficiency level of UAE banking sector. In this study, the total expenses to total revenue ratio is used as a measure of efficiency. Molyneux and Thornton (1992) identify the positive impact of cost inefficiency on bank performance across 18 European countries from 1986 to 1989. Conversely, Petria et al. (2013) suggest a negative relationship between cost efficiency and bank performance for European Union banking systems between 2004 and 2011. Athanasoglou et al. (2008) propose that well-managed banks have the ability to reduce

operating costs, thereby enhancing bank profitability. This suggests that cost efficiency is a key factor in determining bank profitability, as effective management of operating costs can significantly influence a bank's performance in terms of profitability. Therefore, this study posits the following hypothesis:

H_7 Cost efficiency has a positive association with the profitability of the UAE banking sector

2.8 Income diversification and banking profitability

In the context of Islamic banking operations, two main sources of income can be identified: one stems from Islamic financing instruments like *murabaha*, *mudaraba*, *wakala*, and *ijara* financing, while the other arises from non-interest activities, such as foreign exchange spread, fees, commissions, and other related sources (Khan et al., 2019). This study employs the ratio of non-interest income to total income as a measure of income diversification (Khan et al., 2019). Due to the sample criteria, the ratio of non-profit income to total income will be used as a proxy for income diversification. Banks engaged in various business types tend to generate more non-interest income. Furthermore, greater diversification in banks can lead to increased income stability and reduced risk (Li et al., 2021). Diversification, both in terms of asset diversity and non-lending activities, is crucial for positioning banks to sustain lending activities and support economic growth during financial crises, thereby reducing the bank's idiosyncratic risk and stabilising its earnings stream (Gelman et al., 2023).

Li et al. (2021) find a positive association between income diversification and performance, which aligns with the findings of Jiang et al. (2003b). Additionally, Uddin et al. (2021) investigate the effect of income and asset diversification on the profitability of commercial banks in Bangladesh, suggesting that income and asset diversification have a significant positive effect on the profitability of commercial banks in Bangladesh. Analysing the relationship between non-interest income and ROA, Ferreira et al. (2019) find similar results in the context of Brazil. However, Turkmen and Yigit (2012) confirm that diversification had a negative effect on the performance of Turkish banks between 2007 and 2011. Demirgüç-Kunt and Huizinga (1999), meanwhile, find a negative association

between income diversification and performance due to stronger competition in generating free income compared to traditional interest income activities, ultimately reducing bank performance.

Generally, income diversification tends to have a positive impact on banking profitability because it involves adopting a policy to have multiple sources of income rather than relying solely on interest income or profit, generated from either lending or financing activities. This strategy also serves as a tool to reduce or mitigate risk in the banking system. By not relying only on interest or profit income, banks manage to diversify their sources of income. The relationship is often positive unless influenced by market conditions and other external factors. Therefore, this study proposes the following hypothesis:

H_8 Income diversification has a positive association with the profitability of the UAE banking sector

2.9 Size and banking profitability

Size is measured as the logarithm of a bank's total assets and it is utilised as a controlling variable in this study (Kyereboah-Coleman, 2007). Size is considered an important determinant of performance. Larger banks are anticipated to benefit from economies of scale and economies of scope compared to smaller ones. Size also significantly influences the cost of borrowing, thereby impacting a firm's performance (Stulz & Johnson, 1985). Larger firms, with their established presence and diversified business activities, can secure substantial amounts of debt at lower interest rates (Ferri & Jones, 1979). This results in a reduced cost of borrowing, enhancing the performance of large firms (Graham, 2000). Eriotis et al. (2007) conclude that large firms employ more debt than smaller firms, while Serrasqueiro and Rêgo Rogão (2009) argue that firms with low tangible assets face a relatively high cost of borrowing, and difficulties in expanding their business activities. Existing empirical studies present varied outcomes regarding the impact of size on the profitability. Nevertheless, most of these studies do find that size exhibited a positive and significant relationship with profitability (Abor, 2005; Yazdanfar & Öhman, 2015; Asimakopoulos et al., 2009; Sheikh & Wang, 2013; Dawar, 2014; Nguyen & Nguyen, 2015). Banks with large assets tend to positively impact profitability by regaining customer

trust and confidence, leading to higher deposit ratios. This, in turn, helps banks generate profit and reduces the cost of borrowing. Hence, this study formulates the following hypothesis:

H_9 Size has a positive association with the profitability of the UAE banking sector

3. Data and Methodology

3.1 Data and sample collection

The study uses secondary data from two primary sources, i.e., banks' websites and the World Bank database. The annual reports of selected UAE banks are used to collect bank-specific variables, while the World Bank database is utilised to obtain oil price data. The data spans a comprehensive six-year period from 2017 to 2022. This timeframe was selected to address the lack of recent studies within this period that specifically investigate the impact of oil price dynamics on the profitability of the UAE banking sector, as highlighted in the literature gap. More importantly, this timeframe includes significant events such as the Covid-19 pandemic, which caused oil prices to fall in 2020, and the Russian-Ukraine war in 2022, which led to a price surge. These events necessitate a re-evaluation of the impact of oil price dynamics on the profitability of the banking sector. The target population mainly focuses on UAE-owned banks in order to ensure uniformity in the currency unit used in annual reports. This choice is made because international banks in UAE adopt either the US dollar or their prospective country's currency in their financial reports. Therefore, the study excludes all foreign banks operating in UAE.

As mentioned, the sample of study comprises both Islamic and conventional banks. There are total of six local Islamic banks in UAE. The study will include all of them in the sample except for Emirates Islamic, which was excluded due to issues related to online data accessibility. On the other hand, the study selected five out of 16 (31.25%) local conventional banks to maintain proportionality of both types of banks. The main factor dictating the selection was data availability, as the study relies on annual reports as a source of data. Time was also a determining factor in deciding sample size. Overall, of the 23 local banks, ten were chosen for analysis, encompassing both Islamic and conventional banks. These selected

banks represent 43% of locally owned UAE banks, which is a significant proportion of sector. The banks included in the study are Abu Dhabi Islamic Bank, Ajman Bank, Dubai Islamic Bank, Al Hilal Bank, Sharjah Islamic Bank, Commercial Bank of Dubai, First Abu Dhabi Bank, Emirates Investment Bank, Bank of Sharjah, and United Arab Bank (CBUAE, 2023).

3.2 Methodology

This study employed a balanced panel data, taking into consideration the combination of cross-sectional and time-based components within the data. The utilisation of panel data offers a significant advantage in terms of sample size, rendering it more suitable for examining the dynamics of change over time. To evaluate the impact of oil prices on the profitability of the UAE banking sector, the study utilised pooled ordinary least squares (OLS), as well as random effects (RE) and fixed effects (FE) models. In addition, to determine whether to opt for a random effects model or a pooled OLS, the study relies on the Breusch-Pagan Lagrange multiplier (LM) test. Similarly, the study performs a Hausman test to select between fixed and random effects models (Gujarati & Porter, 2009). Therefore, the following three models were developed:

Model 1: Pooled OLS

$$ROA_i = \beta_0 + \beta_1 \mathrm{OP}_{i1} + \beta_2 \mathrm{CAR}_{i2} + \beta_3 \mathrm{LLP}_{i3} + \beta_4 \mathrm{DG}_{i4} + \beta_4 DR_{i4} + \beta_5 LR_{i5} + \beta_6 CER_{i6} + \beta_7 ID_{i7} + \beta_8 SZ_{i8} + + \varepsilon_i \quad (1)$$

Model 2: Random effects model

$$ROA_i = \beta_0 + \beta_1 \mathrm{OP}_{i1} + \beta_2 \mathrm{CAR}_{i2} + \beta_3 \mathrm{LLP}_{i3} + \beta_4 \mathrm{DG}_{i4} + \beta_4 DR_{i4} + \beta_5 LR_{i5} + \beta_6 CER_{i6} + \beta_7 ID_{i7} + \beta_8 SZ_{i8} + \mu_{it} + \varepsilon_i \quad (2)$$

Model 3: Fixed effects model

$$ROA_i = \beta_0 + \beta_1 \mathrm{OP}_{i1} + \beta_2 \mathrm{CAR}_{i2} + \beta_3 \mathrm{LLP}_{i3} + \beta_4 \mathrm{DG}_{i4} + \beta_4 DR_{i4} + \beta_5 LR_{i5} + \beta_6 CER_{i6} + \beta_7 ID_{i7} + \beta_8 SZ_{i8} + \mu_{it} + \varepsilon_i \quad (2)$$

where $\mu_{it} + \varepsilon_i = \omega_{it}$, and ωit is the error component which consists of cross-section error component and time series error component (Gujarati & Porter, 2009). Table 1 lists the names of variables in the models, their corresponding symbols, and measurements.

Table 1: Variable names, symbols, measurement and sources

No.	Variables	Symbols	Measurements
1	Return on assets	ROA	Net profit to total assets
2	Oil price	OP	Crude oil price
3	Capital adequacy ratio	CAR	Total equity to total assets
4	Loan loss provisions	LLP	Loan impairment to total financing
5	Deposit growth	DG	Percentage change in total deposit
6	Deposit ratio	DR	Percentage of total deposits to total assets
7	Leverage ratio	LR	Total liabilities to total assets
8	Cost efficiency ratio	CER	Total expenses to total revenue
9	Income diversification	ID	Non-profit and interest income to total income
10	Size	SZ	Natural logarithm of total assets

4. Results

4.1 Descriptive statistics

This section provides descriptive statistics analysis for both the dependent and independent variables, including ROA, oil prices, CAR, loan loss provisions, deposit growth, deposit ratio, leverage ratio, cost efficiency ratio, income diversification, and bank size of the selected UAE banks, encompassing both Islamic and conventional financial institutions.

Table 2: Summary of descriptive statistics

Variables	Observations	Mean	Std. dev.	Min	Max
ROA	60	0.4593267	2.648976	-17.65385	2.237022
OP	60	63.30273	13.7265	43.06946	87.90685
CAR	60	15.04981	16.26628	0	100
LLP	60	2.033221	4.374958	0.0196211	33.26898
DG	60	9.685463	92.61541	-100	542.6917
DR	60	77.00218	6.888512	63.74293	88.3108
LR	60	87.50447	2.527039	81.67161	96.00464
CER	60	24.7187	167.3274	-1205.684	149.7835
ID	60	22.91319	27.90783	-114.7075	82.92
SZ	60	17.05611	2.588963	10.55291	20.82768

Source: World Bank

According to Table 2, the mean ROA is 0.4593267, with a standard deviation of 2.648976, ranging from -17.65385 to 2.237022. This metric measures the profit that a bank can generate from its assets, with a higher ROA indicating greater profitability for a bank. However, the wide range between the minimum and maximum suggests significant volatility in the ROA during the study period, which in part contributes to the reduction in the average ROA. The average oil price stands at USD63.30273 per barrel, with minimum and maximum prices of USD43.07 and USD87.90, respectively. This price is notably profitable, especially when taking into account the estimated operational and capital costs associated with oil production, approximately USD7 per barrel in the UAE, thus leading to substantial oil revenue for the government (Reuters, 2009). The standard deviation of oil price is 13.7265, indicating notable fluctuations in the price of crude oil during the study period.

The average value of CAR is 15.04981%, indicating that equity constitutes 15% of total assets, while liabilities fund the remaining portion of total assets. This ratio surpasses the minimum requirement set by the Central Bank of the UAE (CBUAE), which mandates banks to maintain a CAR of at least 10.50%. This regulatory threshold aims to uphold the soundness of banks, promote financial stability, and mitigate the risk exposure of banks, as outlined in the 2017 CBUAE Rulebook. The average loan loss provision ratio was 2.033221, with a standard deviation of 4.374958, and the minimum and maximum were 0.0196211 and 33.26898, respectively, indicating a significant fluctuation in loan loss provisions over the study period. The loan loss provision represents the reserved amount intended to cover anticipated credit losses. Its calculation mainly takes into account various factors, including loan collection expenses, credit losses, economic conditions, business cycles, interest rates, and changes in tax policies, as articulated by Srivastav (2023).

During the study period, deposit growth averaged 9.685463%, with a considerable standard deviation of 92.61541. This indicates high volatility in credit growth and serves as an indicator of the bank's capacity to both attract and maintain deposits. Deposit growth averaged 77.00218% of total assets, ranging from 63.74293 to 88.3108. This indicates that the banks in the UAE experienced a substantial deposit growth rate, which helped them generate more profit using cheap source of financing, namely deposit funds. It is also an indicator of the liquidity ratio, showcasing the banks' ability to

meet their short-term obligations. Furthermore, 87.5% of the selected UAE banks' total assets were financed by total liabilities, primarily sourced from deposit funds, indicating efficient financing practices. The leverage ratios almost remain stable throughout the study period, ranging from 81.67 to 96.00. This stability suggests that the banks effectively managed their debt levels, maintaining a balanced approach to leverage and financial risks.

The average CER was 24.7187%, signifying a commendable level of cost efficiency for UAE banking sector. However, the recorded standard deviation of 167.3274 suggests high fluctuations during the study period. Income diversification was recorded at 22.91319%, indicating that the UAE banks managed to generate approximately 23% of their income from non-interest or non-profit sources, with the remaining income derived from the primary source, namely interest income or profit income. The standard deviation of 27.90783 suggests notable fluctuations in ID during the study period, implying varying degrees of reliance on non-interest sources for generating income. The size of the sampled UAE banks remained relatively stable, with an average of 17.05611, ranging from 10.55291 to 20.82768. This stable size may have influenced the cost of borrowing and ultimately impacted the profitability of the banks.

4.2 Correlation matrix and multicollinearity test

The correlation matrix measures correlation coefficients between two variables. Table 3 presents the correlation matrix detailing the relationships between the dependent variable and exploratory variables for the selected UAE banks. The correlation coefficient spans from -1 to +1, with -1 representing a perfect negative correlation, +1 indicating a perfect positive correlation, and 0 denoting no correlation between the variables. Additionally, the table provides the results of the multicollinearity examination for the exploratory variables, using variance inflation factors (VIF). The mean of the variance inflation factors is 1.49, signifying a moderate correlation among the exploratory variables. This level of correlation does not necessitate corrective measures.

Table 3: Correlation matrix and multicollinearity test

Variables	ROA	OP	CA	LLP	DG	DR	LR	CER	ID	SZ	VIF
ROA	1										
OP	0.1093	1									1.16
CAR	0.0684	0.136	1								1.13
LLP	0.9571	-0.0681	-0.054	1							1.08
DG	0.0601	0.1182	0.0679	0.0529	1						1.04
DR	0.0568	0.073	0.2667	0.0188	0.1374	1					1.22
LR	-0.3453	0.1826	-0.1192	0.2146	0.0005	-0.0558	1				1.21
CER	0.0944	0.1962	0.0597	-0.0313	0.0424	0.2755	-0.1825	1			2.9
ID	0.1515	0.2225	-0.0449	-0.0684	0.0092	0.1102	-0.0387	0.769	1		2.66
SZ	0.1109	0.012	-0.021	-0.0213	-0.0291	-0.1593	0.0732	-0.0677	-0.0007	1	1.04
						Mean VIF					1.49

Source: World Bank

5. Regression Analysis

The study applied three models, namely pooled OLS, FE, and RE techniques, with a preference for the RE model, to investigate the impact of oil price movements and specific-bank factors on the profitability of UAE banking sector over the period of 2017 to 2022. The regression results are presented in Table 4. The table highlights a R^2 value of 0.9755 and an adjusted R2 value of 0.9711 for the pooled OLS, indicating a strong fit for the regression model to the data. This high R^2 value suggests that approximately 97.55% of the variations in ROA can be explained by the independent variables. Similarly, the FE model exhibited R^2 values of 0.9640, while the RE model showed an R^2 value of 0.9703. These results indicate that approximately 96.40% and 97.03% of the changes in ROA, respectively, were accounted by the independent variables. These values signify that both models provide a good fit for the data, reflecting the strong explanatory power of the selected independent variables. The outcome of the Breusch-Pagan LM test in Table 4 favours the RE model over the pooled OLS, given the probability value of 0.0016, which is lower than the significance level of 0.05. The Hausman test was employed to determine the preferable model between FE and RE models. The null hypothesis corresponds to the FE model, while the alternative is a RE model. The

results in Table 4 indicate that the *p*-value is not significant, amounting to 0.9530. Consequently, the RE model was chosen.

Table 4: Summary regression results

Models	Pooled OLS	FE model	RE model
Variables	ROA	ROA	ROA
C	12.60255***(5.53)	3.172278(0.79)	5.512662**(2.21)
OP	0.010234**(2.22)	0.007243**(2.02)	0.007881**(2.27)
CAR	-0.0039(-1.02)	-0.00118(-0.34)	-0.002(-0.61)
LLP	-0.55391***(-39.78)	-0.54408***(-47.88)	-0.54526***(-49.91)
DG	0.002823***(4.38)	0.002534***(4.68)	0.00261***(5.01)
DR	0.032055***(3.40)	0.044688*(1.94)	0.041053***(2.76)
LR	-0.18658***(-7.32)	-0.09828***(-3.18)	-0.11287***(-4.08)
CER	-0.00158**(-2.64)	-0.00074(-1.46)	-0.00089*(-1.84)
ID	0.012876***(3.76)	0.007224**(2.41)	0.008318***(2.91)
SZ	0.115412***(5.01)	0.172353(0.72)	0.123578**(2.23)
R^2	0.9755	0.9640	0.9703
Adjusted R^2	0.9711		
Prob > *F*	0.0000	0.0000	
F-test		0.0001	
Hausman-Test FE vs. RE		$chi^2(9) = 3.26$, Prob > $chi^2 = 0.9530$	
B-P-ML Test: Random vs. pooled	Prob > $chibar^2$ = 0.0016		
Prob > chi^2			0.0000
Sigma_u	0.442531		0.456413
Sigma_e	0.339428		0.339428
Rho	0.6296		0.643887
	Chosen model		Random effects model

Source: World Bank

The results show that oil price is positively and significantly correlated with the profitability of UAE banking sector under the three models, suggesting that either an increase in oil price or production under the same price will contribute positively to the profitability of UAE banking sector. This result confirms H_1 on oil prices being positively associated with the profitability of the UAE banking sector. This finding aligns with Hasanov

et al. (2018), who report that an increase in oil price has a positive and substantial effect on the profitability of the banking sector in Azerbaijan, underscoring the economic significance of the oil industry. This finding is also in line with Ibrahim (2019), who concludes that oil price fluctuations have a positive effect on bank profitability in oil-exporting GCC countries. These findings reaffirm the importance of natural resources, such as oil, in generating additional revenue for economic growth and diversification.

CAR is correlated negatively with the profitability measure ROA under the three adopted models, but it fails to produce statistically a significant correlation, contradicting H_2. In all the adopted regression models, there was a negative and statistically significant relationship between the profitability measured by ROA and loan loss provisions, supporting H_3. This result is in line with Ahmad et al. (2014) and Alhadab and Alsahawneh (2016), who report a negative and significant association between loan loss provisions and bank performance in Pakistan, suggesting that increasing the loan loss provisions ratio decreases profitability of banks and vice versa, which aids in improving the risk mitigation of banks. This is because loan loss provisions are determined based on historical data and set aside to address potential risks.

Under the three models, deposit growth shows a positive and statistically significant correlation with bank profitability, supporting H4. This signifies that UAE banks are effective at attracting and sustaining deposits, contributing to increased liquidity and improved financial health within the banking sector due to economic conditions. Additionally, profitability is positively and significantly associated with the deposit ratio in the adopted models, supporting H5. This finding contrasts with the results of Hasanov et al. (2018), who conclude that deposits were negatively linked to the profitability of the banking sector in Azerbaijan, an oil-producing country. This indicates that the UAE banking sector has effectively mobilised deposit sources, utilising them to finance its investments and generate additional income. The differences between the studies can be attributed to the differing economic conditions in Azerbaijan and the UAE, particularly in terms of unemployment rates and inflation (Hasanov et al., 2018).

Leverage ratio exhibits a negative and significant correlation with ROA across all three models, supporting H6. This metric is a liquidity measure, which assesses the ability of banks to fulfil their financial obligations. As indicated in the descriptive statistics in Table 2, 87% of the sampled UAE

banks on average rely on financing from liabilities, with a substantial portion originating from deposit funds. This reliance on liabilities may contribute to the observed negative and statistically significant association with profitability. This finding contradicts Ahmed and Afza (2019), who report a positive and significant influence of liquidity on a firm's performance. Furthermore, the study highlights a negative and statistically significant correlation between cost efficiency and the profitability of selected UAE banks under both the pooled OLS and RE models, contradicting H_7. This is also not in line Molyneux and Thornton (1992), who suggest a positive and significant impact of cost inefficiency on bank performance across 18 European countries between 1986 and 1989. However, under the FE model, no significant relationship is observed between cost efficiency and ROA, aligning with Petria et al. (2013), who show a negative relationship between cost efficiency and the performance of EU-27 banks between 2004 and 2011. Given that the study is based on the RE model, it underscores the significance of cost efficiency in determining the profitability of the UAE banking sector.

Notably, Table 2 suggests that the UAE banking sector allocates approximately 25% of its total revenue as expenses to pay off operating expenses. Income diversification demonstrates a positive and significant correlation with the profitability of the UAE banking sector across all three models, supporting H8. This is in line with Adem (2023), who emphasises the positive and significant impact of income diversification on the stability of banks in 45 African countries. The implication is that when banking institutions incorporate nontraditional revenue sources, such as foreign exchange spreads, commissions, fees, and other forms of investment income, it leads to an increase in non-interest or non-profit income, consequently enhancing overall profitability. According to the data in Table 2, this non-interest or non-profit income, an income diversification proxy, constitutes approximately 23% of the total income of the UAE banking sector. This sizable proportion signifies a substantial contribution from alternative income sources, further solidifying the profitability of the UAE banking sector. This demonstrates how effectively the UAE banking sector has diversified its income sources, which is critical for risk management. Size exhibits a positive and significant association with profitability under both the pooled OLS and RE model, although it does not produce a significant effect under the FE model, supporting H_9. These results align with the findings of

Ghenimi et al. (2021), who also suggest a positive and significant correlation between size and bank profitability. Similar conclusions were reached by other studies, such as Abor (2005), Yazdanfar and Öhman (2015), and Asimakopoulos et al. (2009), when investigating the impact of size on bank profitability. The study reaffirms the importance of size in reducing operating costs through economies of scale.

6. Discussion

This study provides a comprehensive analysis of the factors influencing the profitability of the UAE banking sector, utilising data from 2017 to 2022. The three regression models, namely pooled OLS, FE and RE models, with RE as a preference, offer valuable insights into the relationships between oil price, bank-specific factors, and financial performance. The positive and significant correlation between oil price and profitability of the UAE banking sector underscores the economic significance of the oil industry. Similar findings have been reported in other oil-based economies, such as Azerbaijan, Russia, and GCC countries (Ibrahimov, 2016; Albulescu, 2022; Ibrahim, 2019). The current study confirms that oil revenue contributes to banking profitability. This establishes a clear pattern indicating that natural resources, particularly oil, positively impact banking profitability. Oil cash flows create new opportunities and increase economic activities, resulting in a positive effect on banking profitability.

The study also highlights the significant negative impact of loan loss provisions on profitability of UAE banks, emphasising the need for effective risk management practices to ensure sustained profitability. This finding aligns with the literature reviewed in this study, as loan loss provisions involve setting aside amounts from current profits to cover potential future losses. Deposit growth emerges as a key driver, highlighting the effective mobilisation of deposit sources by UAE banks. This leads to a positive and significant correlation with the profitability of these banks, underscoring the importance of deposit-related metrics in determining the overall financial profitability of banking institutions within the UAE. However, the relationship between deposit growth and banking profitability can depend on economic conditions and specific bank characteristics (Hasanov et al., 2018). During times of economic growth and high oil prices, banks tend to maintain a high growth rate of deposits, which is considered the cheapest

source of financing, thereby enhancing banking profitability. Conversely, during economic recessions and periods of low oil prices, the economy experiences slower growth, and banking profitability declines accordingly. In the current context, UAE banks have benefited positively from the deposit growth rate, driven by the country's economic performance and high oil prices, particularly, during the renewed Russia-Ukraine conflict in 2022.

The negative and significant correlation between leverage ratio and profitability raises concerns about liquidity, highlighting the intricate balance that must be maintained in managing leverage within the sector to ensure sustained profitability. This finding suggests that banks need to adopt a balanced approach in managing leverage, as excessive leverage increases the risk of default and can reduce future profits. The study also emphasises the crucial role of cost efficiency in influencing negatively on bank profitability, underscoring the significance of effective cost control measures within UAE banking operations. UAE banks are falling behind in managing the cost efficiency of their operations. This finding contradicts the positive and significant results of Molyneux and Thornton (1992), but aligns with the findings of Petria et al. (2013). Athanasoglou et al. (2008) suggests that well-managed banks can reduce operating costs, thereby enhancing profitability, which aligns with common sense.

Moreover, the study establishes a positive and significant relationship between income diversification and UAE bank profitability, indicating the potential benefits of integrating non-conventional revenue sources to enhance overall financial performance. This indicates that UAE banks are effectively generating income from non-interest or non-profit sources, which can act as a risk mitigation strategy by reducing reliance on traditional interest and profit income. This finding aligns with Li et al. (2021), but contradicts the results of Turkmen and Yigit (2012). The differences can be attributed to varying economic conditions and other macroeconomic factors in which the banks operate. Size exhibits a positive and significant association with the profitability of UAE banks, measured by ROA. The positive relationship between size and bank profitability is well documented in the literature. Larger banks benefit from economies of scale and scope compared to smaller banks, as anticipated by Stulz and Johnson (1985).

7. Conclusion

This study provides a comprehensive analysis of oil price dynamics and bank-specific factors influencing the profitability of the UAE banking sector, using annual data from 2017 to 2022. The specialised investigation revealed that that oil price impacts on UAE bank profitability are multidimensional, affirming the economic significance of the oil industry and bank profitability. The study also highlighted the moderating effects of risk exposures, deposit trends, cost efficiency, and diversification strategies in shaping the profitability of UAE banking sector. The findings offer valuable insights into the complex dynamics influencing the profitability of the UAE banking sector, elucidating the multifaceted relationships among oil prices, bank-specific factors, and overall bank profitability. These insights can inform strategies and policies to bolster the future profitability and sustainability of the banking sector, particularly in oil-dependent countries. Additionally, they contribute to a deeper understanding of the distinctive economic context not only in the UAE, but also in broader oil-dependent nations.

However, this study has limitations, including its primarily focus on the UAE and well as sample size. Future research should extend the scope to include GCC countries, increase the sample size, and adopt other analytical methods. Incorporating qualitative data could also enrich the understanding of oil price dynamics and bank-specific factors on banking profitability. Despite its geographic and methodological limitations, this research addresses a notable literature gap by providing an authoritative analysis situated in the strategic economic context of the UAE as a major OPEC player.

Funding

This research is supported by the Centre for Research and Development, SIMAD University, Mogadishu, Somalia.

CRediT author statement

Mr. Musse prepared the abstract, introduction, literature review, methodology, results, and conclusion.

Mr. Sharofiddin conducted the review, editing, concept verification, and prepared the discussion section.
Mr. Abdukadir handled data collection and contributed to the literature review.

References

Abor, J. (2005). The effect of capital structure on profitability: An empirical analysis of listed firms in Ghana. *Journal of Risk Finance*, *6*(5), 438–445. https://doi.org/10.1108/15265940510633505

Adem, M. (2023). Impact of income diversification on bank stability: A cross-country analysis. *Asian Journal of Accounting Research*, *8*(2), 133–144. https://doi.org/10.1108/AJAR-03-2022-0093

Ahmad, F., Tahir, H., & Aziz, B. (2014). Impact of loan loss provision on bank profitability in Pakistan. *Research Journal of Social Science and Management*, *3*(12), 34–41.

Ahmed, N., & Afza, T. (2019). Capital structure, competitive intensity and firm performance: Evidence from Pakistan. *Journal of Advances in Management Research*, *16*(5), 796–813. https://doi.org/10.1108/JAMR-02-2019-0018

Alhadab, M., & Alsahawneh, S. (2016). Loan loss provision and the profitability of commercial banks: Evidence from Jordan. *International Journal of Business and Management*, *11*(12), 242–248. https://doi.org/10.5539/ijbm.v11n12p242

Al-Mamun, M. A., Islam, H., & Sarker, N. K. (2022). Affiliation between capital adequacy and performance of banks in Bangladesh. *Journal of Business Studies*, *3*(1), 155–168. https://doi.org/10.58753/jbspust.3.1.2022.10

Anandarajan, A., Hasan, I., & Lozano-Vivas, A. (2005). Loan loss provision decisions: An empirical analysis of the Spanish depository institutions., *Journal of International Accounting, Auditing and Taxation*, *14*, 55–77. https://doi.org/10.1016/j.intaccaudtax.2005.01.004

Asimakopoulos, I. Samitas, A., & Papadogonas, T. (2009). Firm-specific and economy wide determinants of firm profitability Greek evidence using panel data. *Managerial Finance*, *35*(11), 930–939. https://doi.org/10.1108/03074350910993818

Albulescu, C. T. (2022). Bank financial stability and international oil

prices: Evidence from listed Russian public banks. *Eastern European Economics*, *60*(3), 217–246. https://doi.org/10.1080/00128775.2022.2064876

Athanasoglou, P., Brissimis, S. N., & Delis, M. D. (2008). Bank-specific, industry-specific and macroeconomic determinants of bank profitability. *Journal of International Financial Markets, Institutions and Money*, *18*(2), 121–136. https://doi.org/10.1016/j.intfin.2006.07.001

Caruana, J., & Khan, M. (2007). United Arab Emirates: Financial system stability assessment, including reports on the observance of standards and codes on the following topics: monetary and financial policy transparency, banking supervision and payment systems. *IMF Staff Country Reports*, *20*, 2–58. https://doi.org/10.5089/9781451801088.002

Central Bank of the UAE (CBUAE) (2022). *Financial stability report*. CBUAE. https://www.centralbank.ae/media/dbrc3tgl/cbuae-fsr-report-2022.pdf

Central Bank of the UAE (CBUAE) (2023). List of fully-fledged Islamic banks. *CBUAE*. https://centralbank.ae/en/our-operations/islamic-finance/islamic-banking/

Central Bank of the UAE (CBUAE) (2017). Regulations re capital adequacy. *CBUAE*. https://rulebook.centralbank.ae/en/rulebook/regulations-re-capital-adequacy

Central Bank of the UAE (CBUAE) (2023). *United Arab Emirates Monetary, banking and financial markets developments 2023–2nd quarter report*. *CBUAE*. https://www.centralbank.ae/media/fonmlvad/uae-monetary-banking-financial-markets-developments-report-q2-e-june-2023.pdf

Dalci, I. (2018). Impact of financial leverage on profitability of listed manufacturing companies in China. *Pacific Accounting Review*, *30*(4), 410–432. https://doi.org/10.1108/PAR-01-2018-0008

Das, P. C. (2020). Impact of advance-deposit ratio (ADR) on financial performance: Panel evidence from commercial banks in Bangladesh. *Cost and Management*, *48*(3), 42–51.

Dawar, V. (2014). Agency theory, capital structure and firm performance: Some Indian evidence. *Managerial Finance*, *40*(12), 1190–1206. https://doi.org/10.1108/MF-10-2013-0275

Demirgüç-Kunt, A., & Huizinga, H. (1999). Determinants of commercial bank interest margins and profitability: Some international evidence.

World Bank Economic Review, *13*(2), 379-408. https://www.jstor.org/stable/3990103

Dziobek, C. H. (1996). Regulatory and tax treatment of loan loss provisions. *IMF Policy Discussion Papers*, *6*, 1–29. https://doi.org/10.5089/9781451972009.003

Fernando, W. D. I., & Ekanayake, E. M. N. (2015). Do commercial banks use loan loss provisions to smooth their income? Empirical evidence from Sri Lankan commercial banks. *Journal of Finance and Bank Management*, *3*(1), 167–179. https://hdl.handle.net/10779/lincoln.24959700.v1

Eriotis, N., Vasiliou, D., & Ventoura-Neokosmidi, Z. (2007). How firm characteristics affect capital structure: An empirical study. *Managerial Finance*, *33*(5), 321–331. https://doi.org/10.1108/03074350710739605

Ferrouhi, E. (2018). Determinants of banks' profitability and performance: An overview. *MPRA Paper*, *89470*, 61–74. https://mpra.ub.uni-muenchen.de/89470/1/MPRA_paper_89470.pdf

Ferri, M. G., & Jones, W. H. (1979). Determinants of financial structure: A new methodological approach. *The Journal of Finance*, *34*(3), 631–644. https://doi.org/10.2307/2327431

Gelman, M., Goldstein, I., & MacKinlay, A. (2023). Bank diversification and lending resiliency. *SSRN*. http://doi.org/10.2139/ssrn.4147790

Genay, H. (2000). Recent trends in deposit and loan growth: Implications for small and large banks. *Federal Reserve Bank of Chicago*, *Chicago Fed Letter*, *160*. https://www.chicagofed.org/publications/chicago-fed-letter/2000/december-160

Gharib, C., Mefteh-Wali, S., Serret, V., & Jabeurd, S. (2021), Impact of Covid-19 pandemic on crude oil prices: Evidence from econophysics approach. *Resources Policy*, *74*, 1–17. https://doi.org/10.1016/j.resourpol.2021.102392

Ghenimi, A., Chaibi, H., & Omri, M., A., B. (2021). Liquidity risk determinants: Islamic vs conventional banks. *International Journal of Law and Management*, *63*(1), 65–95. https://doi.org/10.1108/IJLMA-03-2018-0060

Gobat, J. (2023). Banks: At the heart of the matter. *IMF*. https://www.imf.org/en/Publications/fandd/issues/Series/Back-to-Basics/Banks

Graham, J. R. (2000). How big are the tax benefits of debt? *Journal of Finance*, *55*(5), 1901–1942. https://doi.org/10.1111/0022-1082.00277

Greenawalt, M. B., & Sinkey, J. F. (1988). Bank loan-loss provisions and the income-smoothing hypothesis: An empirical analysis, 1976–1984. *Journal of Financial Services Research*, *1*, 301–318. https://doi.org/10.1007/BF00235201

Gujarati, D. N., & Porter, D. C. (2009). *Basic econometrics*. McGraw-Hill.

Gul, S., Irshad, F., & Zaman, K. (2011). Factors affecting bank profitability in Pakistan. *Romanian Economic Journal*, *39*, 61–87. https://mpra.ub.uni-muenchen.de/82016/

Hasanov, F., J., Bayramli, N., & Al-Musehel, N. (2018). Bank-specific and macroeconomic determinants of bank profitability: Evidence from an oil-dependent economy. *International Journal of Financial Studies*, *6*, 1-21. https://doi.org/10.3390/ijfs6030078

Hlawatsch, S., & Ostrowski, S. (2010). Economic loan loss provision and expected loss. *Business Research*, *3*(2), 133–149. https://doi.org/10.1007/BF03342719

Ibrahim, M. H. (2019). Oil and macro-financial linkages: Evidence from the GCC countries. *Quarterly Review of Economics and Finance*, *72*, 1–13. https://doi.org/10.1016/j.qref.2019.01.014

Ibrahimov, A. (2016). *The impact of devaluation and oil price on the banking sector of Azerbaijan* [Master's thesis, Porto University]. https://core.ac.uk/download/143395524.pdf

Jensen, M.C., & Meckling, W. H. (1976). Theory of the firm: Managerial behavior, agency costs and ownership structure. *Journal of Financial Economics*, *3*(4), 305–360. https://doi.org/10.1016/0304-405X(76)90026-X

Kandil, M., & Markovski, M. (2019). UAE banks' performance and the oil price shock: Evidence across conventional and islamic banks. *Review of Middle East Economics and Finance*, *15*(3), 20190005. http://doi.org/10.1515/rmeef-2019-0005

Khan, M. A., Siddique, A., & Sarwar, Z. (2019). Determinants of non-performing loans in the banking sector in developing state. *Asian Journal of Accounting Research*, *5*(1), 135–145. https://doi.org/10.1108/AJAR-10-2019-0080

Kohlscheen, E., Murcia, A., & Contreras, J. (2018). Determinants of bank profitability in emerging markets. *BIS Working Papers*, *686*, 1–24. https://www.bis.org/publ/work686.pdf

Kyereboah-Coleman, A. (2007). The impact of capital structure on the

performance of microfinance institutions. *Journal of Risk Finance*, *8*(1), 56–71. https://doi.org/10.1108/15265940710721082

Li, X., Feng, H., Zhao, S., & Carter, D. A. (2021). The effect of revenue diversification on bank profitability and risk during the Covid-19 pandemic. *Finance Research Letters*, *43*, 1–6. https://doi.org/10.1016/j.frl.2021.101957

Majeed, M. T., & Zainab, A. (2021). A comparative analysis of financial performance of Islamic banks vis-a-vis conventional banks: evidence from Pakistan. *ISRA International Journal of Islamic Finance*, *13*(3), 331–346. https://doi.org/10.1108/IJIF-08-2018-0093

Molyneux, P., & Thornton, J. (1992). Determinants of European bank profitability: A note. *Journal of Banking & Finance*, *16*(6), 1173–1178. https://doi.org/10.1016/0378-4266(92)90065-8

Moussa, A. A. (2019). Determinants of working capital behavior: Evidence from Egypt. *International Journal of Managerial Finance*, *15*(1), 39–61. https://doi.org/10.1108/IJMF-09-2017-0219

Mustafa, A. R., Ansari, R. H., & Younis, M. U. (2012). Does the loan loss provision affect the banking profitability in case of Pakistan? *Asian Economic and Financial Review*, *2*(7), 772–783. https://archive.aessweb.com/index.php/5002/article/view/930

Nguyen, T., & Nguyen, H. C. (2015). Capital structure and companies' performance: Evidence from Vietnam's stock exchange. *International Journal of Economics and Finance*, *7*(12), 1–10. https://doi.org/10.5539/ijef.v7n12p1

Organization of the Petroleum Exporting Countries (OPEC) (2022). *OPEC annual statistical bulletin 57th edition*. OPEC. https://www.opec.org/assets/assetdb/asb-2022.pdf

Organization of the Petroleum Exporting Countries (OPEC) (2023). *OPEC annual statistical bulletin 58th edition*. https://www.opec.org/assets/assetdb/asb-2023.pdf

Organization of the Petroleum Exporting Countries (OPEC) (2024). *OPEC monthly oil market report*. OPEC. https://www.opec.org/monthly-oil-market-report-2024.html

Petriaa, N., Caprarub, B., & Ihnatov, I. (2015). Determinants of banks' profitability: Evidence from EU 27 banking systems. *Procedia Economics and Finance*, *20*, 518–524. https://doi.org/10.1016/S2212-5671(15)00104-5

Reuters (2009, July 28). Factbox: Oil production cost estimates by country. *Reuters*. https://www.reuters.com/article/markets/oil/factbox-oil-production-cost-estimates-by-country-idUSLS124074/

Ross, S. A., Westerfield, R. W., & Jaffe, J. (2010). *Corporate finance*. McGraw-Hill, Irwin.

Serrasqueiro, Z. M. S., & Rêgo Rogão, M. C. (2009). Capital structure of listed Portuguese companies Determinants of debt adjustment. *Review of Accounting and Finance*, *8*(1), 54–75. https://doi.org/10.1108/14757700910934238

Sheikh, N. A., & Wang, Z. (2013). The impact of capital structure on performance: An empirical study of non-financial listed companies in Pakistan. *International Journal of Commerce and Management*, *23*(4), 354–368. https://doi.org/10.1108/IJCoMA-11-2011-0034

Siddique, A., Khan, M., A., & Khan, Z. (2022). The effect of credit risk management and bank-specific factors on the financial performance of the South Asian commercial banks. *Asian Journal of Accounting Research*, *7*(2), 182–194. https://doi.org/10.1108/AJAR-08-2020-0071

Srivastav, A. K. (2023). Loan loss provisions. *Wall Street Mojo*. https://www.wallstreetmojo.com/loan-loss-provisions/

Stulz, R. M., & Johnson, H. (1985). An analysis of secured debt. *Journal of Financial Economics*, *14*(4), 501–521. https://doi.org/10.1016/0304-405X(85)90024-8

Sunley, E. M., Baunsgaard, T., & Simard, D. (2003). Revenue from the oil and gas sector: Issues and country experience. In J. M. Davis, A. Fedelino, & R. Ossowski (eds.), *Fiscal policy formulation and implementation in oil-producing countries*, pp. 153–156. International Monetary Fund. https://doi.org/10.5089/9781589061750.071

Turkmen, S. Y., & Yigit, I. (2012). Diversification in banking and its effect on banks' performance: Evidence from Turkey. *American International Journal of Contemporary Research*, *2*(12), 111–119.

Uddin, M. J., Majumder, M. T. H., Akter, A., & Zaman, R. (2021). Do the diversification of income and assets spur bank profitability in Bangladesh? A dynamic panel data analysis. *Vilakshan-XIMB Journal of Management*, *19*(2), 177–194. https://doi.org/10.1108/XJM-01-2021-0023

Uppal, R. (2023, November 1). UAE's GDP grew 3.7% in first half of 2023, supported by non-oil sector. *Reuters*. https://www.reuters.com/world/

middle-east/uaes-gdp-grew-37-first-half-2023-supported-by-non-oil-sector-2023-11-01/

Usman, O., & Yakubu U. A. (2019. An investigation of the post-privatization companies' financial performance in Nigeria: The role of corporate governance practices. *Corporate Governance*, *19*(3), 404-418. https://doi.org/10.1108/CG-05-2018-0190

Xu. C, & Xie. B. (2015). *The impact of oil price on bank profitability in Canada*. [Master's thesis, Simon Fraser University]. Summit Research Repository. https://summit.sfu.ca/item/15821

Yazdanfar, D., & Öhman, P. (2015). Debt financing and firm performance: An empirical study based on Swedish data. *Journal of Risk Finance*, *16*(1), 102–118. https://doi.org/10.1108/JRF-06-2014-0085

Zulfikar, Z., & Sri, W. (2019). The impact of discretionary loan loss provision of sharia financing on financial performance. *Banks and Bank Systems*, *14*(4), 34–41. http://doi.org/10.21511/bbs.14(4).2019.04