Institute of Banking Studies Research >>

The Effect of Competitiveness of Kuwaiti Banks on Risk Profile and Profitability

Consultancy and Research Department

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Please note that the findings and recommendations presented in this report are the sole responsibility of the author and do not reflect the views of the Central Bank of Kuwait or any other government body.

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Executive Summary

This study covers several topics, of which the main one is investigating the impact of competition on profitability and risk profile in the Kuwaiti banking sector, in addition to other related relevant subjects. Other topics include Covid-19 and the impact of the geo-political environment on banking competition, the talent war among banks and its implications for banks' performance from a cost to income perspective, new payment technologies and their implications for fee income for banks, the implications of digital banks and new Telco market penetration for the banking and financial services landscape. The following bullet points summarize the findings of the study:

- Competition among Kuwaiti banks is not significantly high due to the significant concentration in the Kuwait banking sector.
- Competition generally affects the profitability and risk profile of Kuwaiti banks.
- Concentration has a favorable significant impact on profitability and the risk profile of banks in the Kuwaiti banking sector.
- Interest rate spread increases banks' profitability while it slightly increases credit risk, but not liquidity and capital risk.
- Income diversification slightly increases risk exposure due to monitoring difficulties across the sectors engaged with.
- Coping with the new post-pandemic trends reshaping the future of the banking industry landscape, namely new monetary and fiscal policies, digitalization, regulation, economic growth, new entrants, and competitive landscape is mainly the responsibility of the government and regulatory authorities.
- In relation to the talent war, banks need to improve their training programs and culture to keep their employees energized and engaged. In addition, they also need to make their employees feel valued, grant them recognition and growth opportunities, and provide them with a flexible, healthy, diverse, and transparent workplace to keep them committed.

- In the current digital environment, banks are recommended to create a synergy with fintech firms in the form of fintech-bank collaboration. This will benefit both parties; banks will be empowered to increase fee-based income and profits, and fintech firms will be able to secure funds for larger investment and build a trustworthy reputation through banks.
- Embracing digitalization will assist incumbent banks to stay competitive in the face of digital players. They will be enabled to provide enhanced digital financial services that improve client well-being both directly and indirectly through enabling a broader ecosystem.

Background

The global financial crisis of 2007-2009 drew the attention and interest of academics and policy makers and urged them to revisit and reflect on competitive behavior in the banking industry and its impact on risk and the performance of banks. In literature, the implication of competition for banks' risk and performance is manifold, it depends on the intensity of competition in the market in question. It can be broken down into negative, positive, and non-linear (coexistence of the positive and negative effect) effects (Khattak and Ali, 2021)[1]. The efficiency of banks is also regarded as a major contributor to banking stability; efficient banks demonstrate more resilience in the face of shocks and adverse effects. In this regard, bank spread (lending rate minus deposit rate, %) is taken as a measure of efficiency of banks with low spread indicating high efficiency and intense competition, whereas high spread implies low efficiency and high concentration in the market (Van Leuvensteijn et al., 2013)[2]. Moreover, the recent Covid-19 pandemic caused some regulators to relax regulatory liquidity requirements, namely Liquidity Coverage Ratio, which addresses the asset side in the balance sheet and Net Stable Funding Ratio, which addresses the liability/equity side, during the pandemic to assist banks to cope with the health crisis; however, the ratios were returned to normal (100%) afterwards. Furthermore, barriers to bank entry and exit play a significant role in the determination of competition within the banking industry, which in turn influence the risk profile and profitability of banks. Several bank-related requirements are anticipated to contribute to the degree of competition in the market. For instance, licensure laws, capital requirements, and regulatory and security compliance have a crucial impact on the level of competition in the banking sector, where their impact on competition and its related implications for risk and profitability depends on how loose or stringent they are.

In pricing their loan products, banks consider several factors, of which competition prevailing in the market is of the upmost consideration. To remain competitive and distant from bankruptcy, banks set their pricing policy in accordance with market conditions. The very recent failure and collapse of two of the largest banks in the US, namely Silicon Valley Bank and Signature Bank, is a living example of imprudent banks that overlooked market conditions (Fed interest rates, interest rate risk) in pricing their loans, in addition to not

being cautious regarding the duration and type of their investments (liquidity risk). Even though both banks were complying with the regulatory requirements, the composition of their assets was not in concurrence with industry averages.

The "war for talent"[3] among banks, that is, recruiting and retaining talented employees, has impacted the banks' competition landscape, which in turn had considerable implications for their profitability. Finally, in the case of some banking sectors, the emergence of new payment systems and the market penetration by digital banks and new Telco has changed the banking financial services and competition dynamics of banks, and therefore their risk-taking and profits.

Competition can be assessed using three prominent approaches, namely H-statistics developed by Panzar and Rosse (1987)[4], which is a more direct measure of competition: it measures the elasticity of bank revenues relative to input prices. Lerner (1943)[5] formalized an index to serve as a market power indicator; it is estimated using the difference between output prices and marginal costs relative to prices. The Boone indicator (2008)[6] implies that more efficient banks improve their market share and their earnings at the expense of less efficient banks; the higher the extent of competition in the market, the more pronounced would be the effect on inefficient banks.[7] On the other hand, the Herfindahl-Hirschman Index (HHI) and concentration ratio of the assets, loans, or deposits of the three largest banks are used to measure concentration in the market. A higher concentration index/ratio signifies low competition in the market. In the same vein, concentration ratio reflects the level of concentration where the share of assets, loans, and deposits held by the three largest banks serves as an indicator. In light of the sub-topics and issues triggered above, this study seeks to address and investigate the following within the Kuwaiti Banking industry landscape:

1. Traditional view on competition in the banking sector
2. Competition within the loan and deposit markets
3. Features of competition in the Kuwaiti banking sector
    - Customers and banking rates
    - Size of the economy, liquidity and number of players within the banking sector, and growth prospects

- Market Share of banks and appropriate measures of competition in the Kuwaiti banking sector
- Barriers to entrance and exit – licensing procedures and practices, capital requirements, regulations affecting bank activities
- Behavior of bank interest rate spread
- Competition and retail loan pricing, corporate loan pricing, and risk taking in corporate lending

4. Covid-19 and the geo-political environment's impact on banking competition
5. The implications of competition for the risk appetite of Kuwaiti banks
6. The implications of competition for Kuwaiti banks' profitability
7. The talent war among banks and its implications on banking performance from a cost to income perspective in Kuwait
8. New payment technologies and their implications for banks' fee income
9. Implications of digital banks and new Telco market penetration for the banking and financial services landscape.
10. Conclusion and recommendations

1. Traditional view on competition in the banking sector

In the aftermath of the devastating global financial crisis of 2008-2009, policy makers and regulators across the world were urged to rethink several banking specifics, of which banks' competitive behavior was of a prime concern given its serious implications for many other parameters of banks, especially risk profile and profitability. This specific issue has been widely and profoundly investigated in literature, conceptually and empirically, yet the repercussions of competition in the banking system for the two parameters is still controversial and inconclusive. This could be attributed to the diversity of banking system landscapes across the world in terms of size, number of operating banks, development, type (Islamic and conventional), as well as regulations, policies, and the degree of government intervention, to name a few. Literature has provided and documented the many ways in which competition may influence the risk profile and profitability of banks. However, the most prominent suppositions that explain the effect of competition on stability/risk-taking

fall under two hypotheses, namely competition-fragility developed by Keeley (1990)[8] and its alternative, competition-stability. The former suggests that more competition brings about fragility and instability in the banking system, hence making it more vulnerable to shocks and adverse effects. This can be attributed to the fact that in a banking market landscape where competition in intense, banks are inclined to assume more risk, which in turn brings about instability in the system at large. On the other hand, the latter holds that more competition makes the banking system stronger and more stable, in this regard Padoa-Schioppa (2001)[9] claims that competition is the gymnastics of banking: "*If banks were strengthened by the gymnastics of competition, the banking system would be stronger and more resilient to shocks*." However, full agreement on this claim has not been confirmed; in other words, there is no consensus. The Structure-Conduct-Performance (SCP) developed by Bain (1951)[10] argues that in a low competition environment, banks tend to collude to earn abnormal profits. In contrast, the Efficiency structure hypothesis argues that it is efficiency, not market structure, that leads to an increase in profitability. In other words, inefficient banks lose market share to efficient banks, therefore leading to a more concentrated market (lower competition), which in turn boosts the profitability of banks. Table 1 presents this influence in both developing and developed countries.

Table 1: Competition impact on risk and profitability of banks

Author	**Country**	**Risk profile**	**Profitability**
Khattak and Ali (2021)[11]	Six countries from the Middle East banking sector	Competition was captured to increase bank risk taking. It propels banks to take on more risk and invest in riskier portfolios to overcome the effects of declining margins. Similar results were documented in case of small banks.	Competition was documented to erode profitability. For big banks, it was found to pressure banks to decrease the loan rates and increase the deposit rates, which in turn lowers banks earnings. The same outcomes were captured when considering small banks.
		No difference was captured between Islamic and conventional banks in view of competition impact on banks' risk and profitability.	

Kouki and Al-Nasser (2017)[12]	31 African countries	Increase in market power is beneficial in terms of reducing risk and boosting stability.	Banks with more market power are able to be in command of the price and hence improve their profit. In addition, more market power means increase in income diversification, and hence profit.
Tan (2020)[13]	100 Chinese commercial banks		Low competition in the deposit market leads to higher profitability, and vice versa. This is explained by the fact that under a low competitive environment banks enjoy market power to set low deposit rates, whereas they offer higher deposit rates under higher competition to attract depositors; however, this results in higher interest expenses leading to lower profitability. On the other hand, higher competition in the loan market (many companies seeking financing) was found to increase profitability of banks.
Mirzaei et al. (2013)[14]	Banks from advanced and emerging economies		Lower competitive environment leads to higher bank profitability for advanced economies, where market share was documented to be the factor driving profitability instead of concentration. However, this was not the case for emerging economies, where concentration was observed to exert negative impact on profitability; this can be attributed to the impact of so-called "quiet life".

Bucevska and Hadzi Misheva (2017)[15]	Six Balkan countries		The banking industry concentration and market share were found insignificant in explaining profitability, which in turn supports efficiency hypothesis. Hence, it is efficiency not concentration that leads to earning higher profits.
Albaity et al. (2019)	276 Islamic and conventional banks across eighteen MENA countries	More competition induces banks to take more risk, and therefore renders them closer to insolvency. The excessive risk-taking stems from the appetite of banks to offset profitability lost to higher competition. Islamic banks are more prone to competition as the latter causes them to exacerbate their risk-taking.	Increased competition was found to be associated with low bank profitability. This suggests that banks' market power from high profitability is eroded in a highly competitive market, which exacerbates the risk-taking tendency of the banks to offset the lost profitability that tends to make them fragile.
		Competition-fragility was more prominent in the Islamic banking market. This suggests that Islamic banks are less competitive as compared to their conventional counterparts. Banks facing less competition accept less insolvency risk and credit risk and enjoy greater profitability. Hence, imprudent liberalisation intended to promote competition may render banks fragile in MENA countries.	
Nguyen and Tran (2020)[16]	37 Vietnamese commercial banks	When faced with more competition, banks are induced to take on more risk. Banks tend to increase their total loans to total asset ratio, which in turn exposes them to more liquidity risk.	Banks characterized with more competition (market power) tend to have more profitability. However, those faced with higher competition have lower profitability

As evident from the table, competition influence on risk profile and profitability depends on the nature of competition and the specificities of the banking sector under investigation. Hence, there is no joint general influence of competition on the two parameters, the

influence in a given banking system is attributed to the nature of the market itself in terms of size and number of banks, regulations, government intervention, development, type of banks (in case of dual banking systems). Table 2 summarizes the potential pros and cons of both competition and concentration in the banking market.

Table 2: Pros and cons of concentration and competition in the banking market

Competition	Pros	High competition drags interest rates down, reducing moral hazard and adverse selection problem among borrowers, and hence reduces loan default rates (Ibrahim et al., 2019)[17], which in turn promotes banking stability. Competition can be thought of as gymnastics for banks that makes them robust enough in the face of shocks (Padoa-Schioppa, 2001). Competition promotes financial innovations among banks, which leads to efficiency, and therefore more profits (Adu-Asare Idun and Aboagye, 2014)[18]. In a low competitive market, large banks can realize monopoly rents Bain (1951), and therefore greater profits. These profits are used as a capital buffer against financial shocks (Boyd and De Nicolo 2005)[19].
	Cons	Competition motivates small banks to engage in risky activities in hope for higher returns, thereby leading to the weakening of financial systems (Keeley (1990). Higher competition leads to erosion in franchise value, which in turn makes banks relax their investment requirements leading to excessive risk-taking (Keeley, 1990). In an environment where competition is intense, banks may face financial distress due to their inability to earn high profits that can be used as a buffer against financial distress, deterioration in asset quality, or macroeconomic and liquidity shocks (Khattak and Ali, 2021). More competition in the banking sector induces the banks to accept more risk and invest in riskier portfolios to contain the effects of the decline in margins, returns and most importantly to safeguard their market power, which eventually leads to overall lower performance (Khattak and Ali, 2021).

Concentration	Pros	More concentration boosts banks' profits according to SCP that argues that higher profits (monopoly rents) are derived from concentration (Bain, 1951); however according to the efficiency hypothesis, efficient banks can reduce prices leading to gaining more market share and profits (economic profits), this is in direct contrast with SCP (Demsetz, 1973)[20]. Fewer sizeable banks are less prone to crises and shocks. Fewer big banks can also better diversify and spread risk as compared to small banks. Fewer big banks are easier to control and supervise than many small banks (Beck et al. 2003)[21]. Fewer big banks can realize elevated profits by capitalizing on economies of scale and scope, and therefore have more buffers and less fragility against financial shocks (Hellmann et al., 2000)[22].
	Cons	High concentration is associated with less economic welfare because of pricing behaviour which imposes higher prices for financial services and loans (Maudos and De Guevara 2007)[23]. The notion of 'Too Big to Fail" makes large banks difficult to put under control due to moral hazard (Boyd & Runkle, 1993)[24]. Systemically important banks may engage in risky investment by virtue of the fact that they will be bailed out by the government in case they face insolvency or bankruptcy threat (Berger et al., 2009)[25]. Concentration coupled with market power can lead to deterioration of financial development (Hamadi and Awdeh, 2020)[26]. A high concentrated market is associated with low competition which in turn negatively affects the development of the economy. This can be explained through the "Quiet life Hypothesis" which argues that banks with more market power tend to experience sluggish life due to the enjoyed profits instead of the pursuit of efficiency (Hicks, 1935)[27]. Banks that mainly focus on loans are less diversified and are expected to be riskier (Ibrahim and Rizvi, 2017)[28]

2. Competition within the loan and deposit markets

In addition to competition in the asset market, competition can be observed in other segments of the banking sector, namely in the loan and deposit markets. Table 3

summarizes the impact of high/low competition in the loan and deposit markets on risk and profitability of banks.

Table 3: Competition in the loan and deposit markets and banking risk and profitability

Competition		Risk	Profitability
Deposit market	High	Absence of interest ceilings on deposits leads to erosion in franchise value and encourages moral hazard behavior by banks. A bank in financial distress has to offer higher interest rates on its deposits, which decreases its profitability. As competition gets intense among banks for deposits, banks are dragged towards fragility; this is because high competition erodes banks' market power of earning monopoly rents and lowers profit margins and charter value which inflames their risk taking motives to lift profit margins and compensate for diminished charter value.	Higher competition in the deposit market drives banks to increase the deposit interest rate, and therefore increase the interest expenses burden leading to a decline in profitability. High competition urges banks to put more effort and resources into attracting more deposits from the market, which in turn increases the cost leading to a decline in profitability.
	Low	Stringent activity regulation amplifies risk taking incentives by reducing banks' franchise values. In a low competitive market, banks take more risks if big banks consider themselves as Too-Important-to-Fail, and they get a subsidy in the form of a government safety net.	Lower level of competition in deposit market leads to an increase in the profitability of banks out of the enjoyed market power (price setting).
Loan market	High	In highly competitive markets, borrowers may enjoy the low interest rate charged by banks, this in turn places borrowers at ease when repaying the loan. Hence, this may reduce the risk of bank's portfolio. Low loan rates accompanied with high competition motivates borrowers to take less risk, thus reducing banks portfolio risk. Competition among banks tends to reduce loan rates, which makes borrowers safer precisely for the same reason that banks turn riskier when deposit rates rise.	A rise in the degree of competition among banks may lead to a decrease in lending rates to attract borrowers, this strategy in a competitive market brings about reduction in profit margin. If the loan market is extremely regulated, banks enjoying highly competitive status will not be more profitable because of the restrictions and imposed regulations.

	Low	In a low competitive market, banks enjoy more market power to set higher interest rates for borrowers which amplifies borrowers' default risk. The default risk is ultimately shifted to banks, which subsequently increases their moral hazard and adverse selection problem, in addition to worsening the risk of the bank's portfolio.	Low competition in the loan market increase banks' margins. Low competition in the loan market promotes banks' franchise values by earning monopoly rents and, thus, discouraging banks' incentives to take greater risk.

Source: prepared by authors

3. Features of competition in the Kuwaiti banking sector

Banking systems in the MENA region, like most of the other banking systems across the world, have witnessed drastic and dramatic alterations such as consolidation, mergers, liberation of the banking system, and foreign banks' penetration of the local banking landscape in the past two decades. This has changed the size and structure of the banking markets, which in turn has had material impact on banks' competition, performance, and risk behaviour. On the one hand, big banks lowered the interest rate spread and made competition harsh for small banks in local markets. On the other hand, due to the high competition they face from large banks, small banks had their market power eroded, which in turn propelled them to indulge in risky activities and strategies in an attempt to regain their lost franchise value. The Kuwaiti banking landscape has not been an exception, where the banking market has gone through several financial landscape changing events. Prior to 1978, the financial sector in Kuwait was heavily protected against new entrants through the imposition of barriers to entry, which rendered the sector as characterized with low risk. This protection, on the other hand, led to high concentration in the banking market. This led the regulators and the central bank to consider linearization and revisiting regulations and barriers to entry, which has been crowned with corrective initiatives and reforms where foreign participants were allowed to flow into the Kuwaiti financial landscape, be it through foreign direct investment (FDI) as part of its New Kuwait Vision 2035 or establishing bank branches in the local market. Some reforms were introduced by the government such as the establishment of the Kuwait Direct Investment Promotion Authority (KDIPA) in 2013 to attract and entice foreign investment; this was one of the most prominent reforms, where a

new legislation was introduced whereby 100% foreign ownership across all economic sectors is allowed, in addition to incentives such as tax holidays of up to 10 years and customs exemptions. In March 2016, the government of Kuwait also launched the National Program for Economic and Fiscal Diversification (Istidama), which was primarily meant to diversify the economy, promote the private sector, and minimize the fiscal deficit. The Isdidama program, according to the world bank index, has improved the position of Kuwait in terms of ease of doing business. To boost the private sector, privatization of the Kuwait Boursa was announced in 2019; this bold initiative aimed at providing an investment environment based on international standards to attract foreign investors. These revamps were primarily meant to transform Kuwait into a regional financial and commercial hub. It goes without saying that the banking landscape in Kuwait has also changed in light of achieving the goals of the New Kuwait Vision 2035. Providing finance for various projects, offering the private sector and SMEs better access to credit, harnessing of the latest technology, promoting financial inclusion (allowing all segments of the society to have access to banks' products and services), diversification opportunities (targeting different sectors), promotion of sustainable growth, and promotion of Islamic banks' penetration has altered Kuwait's banking and financial services landscape in many ways. Loan and credit markets have changed owing to the new opportunities banks got exposed to out of the new vision and objectives. Competition among banks became intense for market share and power, risk behavior and investment strategies of banks have also changed in response to expanded opportunities, the use of new technologies, and the war for talented managers and customers. In addition, following the Covid-19 health crisis, banks are anticipated to aggressively press forward in certain aspects such as digital transformation, which will in turn insinuate that they will adopt aggressive competition strategies to gain more market share and attract customers. Currently, the banking system in Kuwait includes 11 domestic commercial banks (5 banks are Islamic) in addition to 12 branches of foreign organizations. This implies that in addition to competition between conventional banks, competition has become intense due to the presence of Islamic banks, banks with distinguished principles and business models. Competition among banks of the same type and with their counterparts of other type renders competition entangled and intense. The position of Islamic banks and their competitiveness is highly expected to get stronger by virtue of a

remarkable event that took place in the banking sector, namely the acquisition of Bahrain's Ahli United Bank (AUB) by Kuwait Finance House's (KFH's) and its plan to turn it into a sharia-compliant business.

3.1 Customers and banking rates

Attracting and engaging new customers while retaining the current ones is crucial for banks. In doing so, banks are required to offer competitive rates, products and services, while remaining adaptive to the changing marketplace and catering for the needs of customers, especially as the demand for digital financial offerings accelerates. In the Kuwaiti banking landscape, the discount rate set by the central bank is 4% after it was 3.50%, effective January 26, 2023. This increase was propelled by the need to reinforce financial and monetary stability, as well as the attractiveness of the national currency as a store of wealth; however, this was an unprecedented move as it pushed borrowing costs to their highest level since 2008. On the other hand, the interest charged on consumer loans and housing installment loans should not exceed 6.5 percent. In view of these movements in interest rates, competition among banks became intensified in search of additional deposits, especially government ones. The appetite for more deposits implies offering a high price to depositors, which in turn causes the spread to drop leading to a lower interest margin. This is associated with the interest rate limit on loans charged to individuals and companies, in other words, 4.25 percent discount rate, effective July 27, 2023, in addition to a margin of a maximum of 3.0 percent under the current interest rate structure. The banks compete for additional deposits for several reasons, including the demonstration of a strong financial position by the end of the year; however, this implies a trade-off between profit margin and attracting more depositors. Offering a higher deposit rate will render the bank an appealing venue for depositors, but this will not serve the bank in terms of cost and shrinking profits by virtue of the low spread banks will end up under the imposed limits. The maximum rate was 9.21 % and the minimum was 1.6 %[29].

"*We believe that higher interest rates [could] pose a challenge for sectors including real estate, but … lending to the construction sector is expected to remain elevated in the*

near term," says Junaid Ansari, head of investment strategy and research at Kamco Invest, a local asset management firm.[30]

3.2 Economy size, liquidity and number of players within the banking sector, and growth prospects in the Kuwaiti banking sector

The State of Kuwait is expected to put effort into strengthening institutions, improving business regulatory frameworks, in addition to corruption reduction and control. The gross domestic product growth strongly recovered in 2022 after it nosedived to -8.9%. The immense contradiction is attributed to a pale performance since 2019, due to the Covid-19 pandemic and depressed global oil prices.

According to the World Bank, ease of doing business in Kuwait improved materially in 2020. It is now regarded as one of the top-10 improvers in the world. This outstanding improvement is the result of the comprehensive reform program initiated and embarked on over the past year, which aligns with the 2035 vision. "*With a strong acceleration in the country's reform agenda, we applaud Kuwait's efforts to improve its overall business climate*," said Ghassan Alkhoja, Resident Representative of the World Bank Country Office in Kuwait. In view of the 2018/19 reforms, Kuwait made starting a business easier by merging procedures to obtain a commercial license and streamlining online company registration. In terms of time saving and cutting, Kuwait made dealing with construction permits easier by streamlining its permitting process, integrating additional authorities to its electronic permitting platform, enhancing inter-agency communication and reducing the time to obtain a construction permit. This has reduced the time needed to get a construction permit from 194 to 103 days, almost 50 days fewer than the Organisation for Economic Co-operation and Development (OECD) high-income economy average. It also reduced the time needed to get electricity, 49 days from 65, and made it easier by digitizing the application process, streamlining connection works and meter installations and using a geographic information system to review connection requests. As for property registration, Kuwait made it easier by streamlining the inspection process and property registration. It also enhanced the quality of its land administration system by publishing official service standards on property transfers. The time it takes to complete all necessary procedures was

reduced from 35 days to only 17 days. Kuwait has further improved access to credit information by guaranteeing borrowers the legal right to inspect their credit data and offering credit scores as a value-added service to banks and financial institutions. Kuwait strengthened minority investor protections by providing a 21-day notice period for general assembly meetings. Moreover, Kuwait made trading across borders easier by improving the customs risk management system and by implementing a new electronic clearance system. Finally, small and medium-size enterprises will be assisted by the relevant Kuwaiti authorities to expand internationally and steps are being taken to achieve this end (World bank, 2020).

The economy is generally open to foreign investment, but some sectors are restricted. A modern financial regulatory system facilitates and welcomes portfolio investment. As for the banking landscape, the banking sector remains well capitalized. Table 4 provides some indicators and indices on the Kuwaiti economy; it can be suggested that the Kuwaiti financial landscape still requires further efforts and amendments to make it appealing for both local and foreign investors. However, the current status of the economic and financial landscapes puts forward that the robust financial sector, proactive regulatory regime, and rising personal and institutional wealth make Kuwait an attractive and viable destination for international institutions to offer specialized products and services.

Table 4: Some Kuwaiti economy representative indices and indicators

Year	GDP Growth %	Economic Freedom	Financial Freedom	Investment freedom	Monetary Freedom	Business Freedom	Fiscal Health	Judicial Effectiveness	Government Spending	Tax Burden	Property Right
2013	1.2	63.1	50	55	71.6	57.7	N/A	N/A	61.5	99.9	50
2014	0.5	62.3	50	55	73.2	57.7	N/A	N/A	55.6	97.7	50
2015	0.6	62.5	50	55	74	58.6	N/A	N/A	61.1	97.7	45
2016	2.93	62.7	50	55	74.2	63.4	N/A	N/A	57.7	97.7	45
2017	-4.71	65.1	60	55	73.6	61.2	99.8	56.4	40.8	97.7	55.5
2018	2.43	62.2	60	55	73.7	57.2	99.3	53.5	20.5	97.7	52
2019	-0.6	60.8	60	55	70.6	57.4	99.1	43.3	17.3	97.7	52.9

2020	-8.9	63.2	60	55	73.2	61.3	99.6	47	22.4	97.7	57.1
2021	1.3	64.1	60	55	73.6	66	99.7	52.6	21.4	97.7	57.4
2022	8.7	58.3	60	55	71.7	55.4	99.7	42	4.0	97.7	41.9
2023	2.6	56.7	60	55	69.3	59.1	80.9	40.6	3.2	97.7	42.5

Note: All data was collected from the Heritage Foundation website (https://www.heritage.org/index) except GDP growth that was collected from IMF website (https://www.imf.org/en/Home).

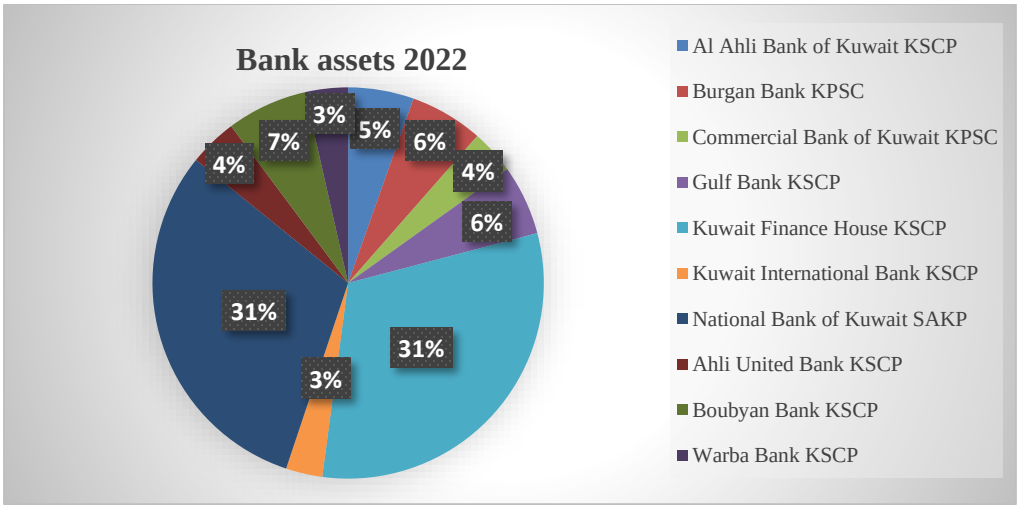
On the banking sector level, the number of banks making up the Kuwaiti banking landscape is 23, out of which 11 are domestic commercial banks (5 banks are Islamic) and 12 are branches of foreign organizations. The most common scenario most banking sectors across the globe are undergoing is rising interest rates. This serious challenge poses a threat to credit growth, in addition to the highly expected recession. In Kuwait, the major negative impact (downside risk) on the banking system stems from the lower oil prices. However, capital adequacy ratios for the sector are still considerably higher (18.4%) than the stipulated threshold under Basel III standards (10.5%) as of 2021, Q3[31]. On the other hand, non-performing loans (NPLs) for the sector at large remain at low levels regardless of the rising interest rates, standing at 1.5% by the end of June, 2022 (compared with 2.8% for the year previous period), with NPL coverage in excess of 300%. On the other hand, overall banking deposits bounced back in 2022, rising by 5.3% to KD 46.9bn ($152.8bn). Furthermore, the year 2022 marked the acquisition of AUB by KFH for $11.6bn. post-acquisition strategy includes conversion of AUB Bahrain and its subsidiaries into sharia-compliant businesses, as well as converting AUB Kuwait into a digital bank. Upon the completion of this process, KFH will become the second-largest Islamic lender in the world by assets (behind Saudi Arabia's Al Rajhi Bank), rendering it a lender with assets estimated at around $121bn. This has boosted KFH's market share of domestic assets from around 22% to 28%, this is quite close to the market share of NBK, which holds a market share of 33% (including its subsidiary Boubyan), according to calculations by Fitch. The high market shares possessed by KFH and NBK (en masse they have more than 50% market share in Kuwait [based on assets]), which made them enjoy more market power and dominance, has triggered the likelihood of further consolidation in the market among the country's smaller lenders. It is also expected, according to a March report from Moody's forecasts, that merger and acquisition activity will continue in the GCC banking sector. In

this regard, "*We still believe there is more room for consolidation in the [Kuwaiti banking] system. The competition is high and the impact is noticeable, especially on the consumer side where margins face extreme pressure*," said Mr Ashraf Madani, a vice-president and senior credit officer at Moody's. "*Two banks are already discussing M&A options and may see a deal concluded in 2023. Overall pressure on the smaller banks is higher than larger ones, but shareholder expectations remain high*.". In contrast, Junaid Ansari said that they didn't expect to see any further consolidation in the sector in the near term in Kuwait, given a balanced market, and healthy credit profiles and profits growth for most banks in the country. This statement is supported by the relief brought about by higher oil revenues (Jivraj, 2023)[32]

3.3 Market Share of the largest banks and appropriate measure of competition in the Kuwaiti banking sector

In view of the ongoing merger and acquisition activities witnessed in the banking landscape in Kuwait, competition is getting intense especially for smaller banks. Top banks in the Kuwaiti banking market possess huge market share in terms of assets, loans, and deposits; this implies that competition is harsh for smaller banks. Figures 1, 2, and 3 present key commercial banks in Kuwait by assets, deposits, and loans, respectively. Based on Figure 1, it can be observed that the top three banks in Kuwait, namely NBK, KFH, and Boubyan Bank, possess approximately 31 %, 31%, and 7% of the sector's total assets in 2022.

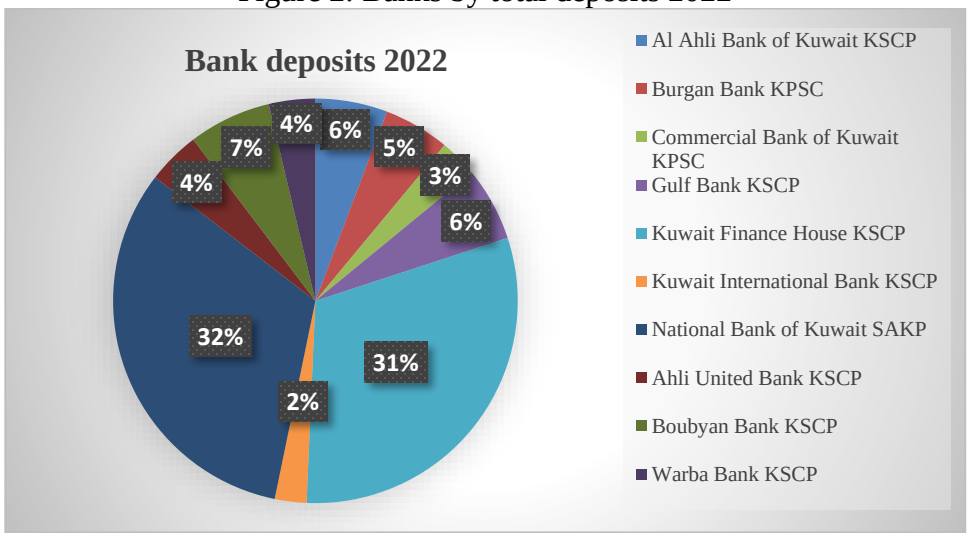
Figure 1: Banks by total assets 2022



Source: By author, data extracted from Refinitiv database

On the other hand, the deposit market is also concentrated as shown in Figure 2, where the same three largest banks possess 32%, 31%, and 7% of the sector's deposits in 2022, respectively. Burgan Bank and Gulf Bank possess 6% of total sector deposits each, which is roughly equal to that of Boubyan Bank.

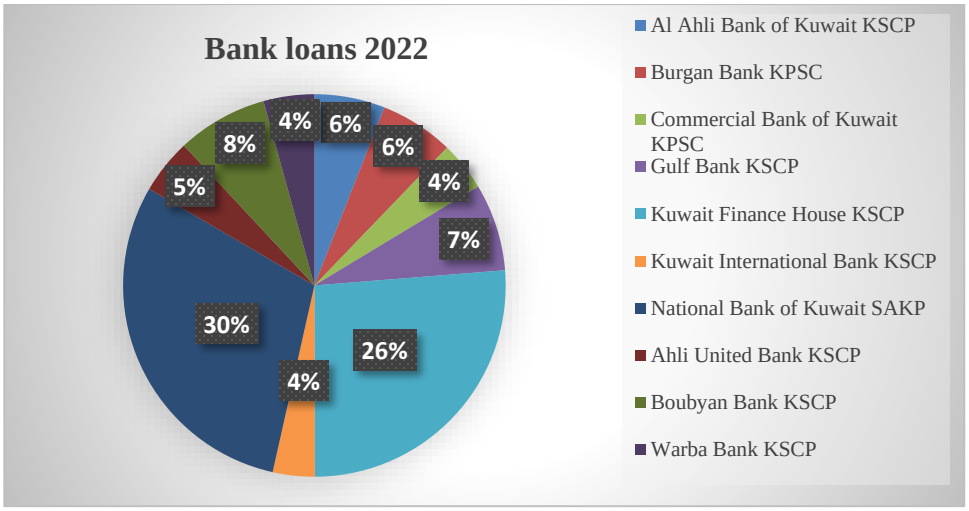
Figure 2: Banks by total deposits 2022



Source: By author, data extracted from Refinitiv database

As for loans, the same three largest banks hold 30%, 26%, and 8% of the sector's total loans in 2022, as shown in Figure 3, respectively. Gulf Bank possesses 6% of the sector total loans, which is roughly equal to Boubyan Bank. The remaining bank possesses between 3% to 5% of the sector's total assets, deposits, or loans. However, in respect to market share, the growth is all coming from the smaller banks, therefore they continue to gain market share and are able to compete with the larger banks.

Figure 3: Banks by total loans 2022



Source: By author, data extracted from Refinitiv database

Competition among banks can be computed using three prominent measures. However, under some circumstances, one measure can be preferred. The three measures are H-statistics developed by Panzar and Rosse, the Lerner Index, and the Boone Indicator. Given the limits/caps set by the regulators in the Kuwaiti banking sector for loan rates, the Boone Indicator would be the most suitable competition measure given its robustness and unbiased position against ceilings and floors. This is supported by Van Leuvensteijn et al. (2016) who argue that "*the Boone indicator is not biased by interest rate ceilings and floors, because it measures the relationship between profit differences and differences in marginal costs among banks.*" The indicator implies that the more efficient banks improve their market share and their earnings at the expense of less efficient banks; the higher the extent of competition in the market, the more pronounced would be the effect on the inefficient banks. In addition, the Boone Indicator, in comparison to the Lerner index and the H-statistics, has the advantage of measuring competition for several products, markets, and different classes of banks. These advantages provide insights to regulatory authorities when making policies, for it is not only known from this indicator which banking output is subject to more or less competitive pressures, but also different types of banks in terms of competition are compared (Tabak et al., 2012)[33]. The Boone indicator for bank *i* can be computed as shown in Equation 1:

$$\ln(MS_{ki}) = \alpha + \beta \ln(MC_{ki}) + e_{it} \quad \textbf{(1)}$$

where *i* represents a specific bank, *k* represents a specific bank output, *MS* is the market share, while *MC* is the marginal cost. β denotes the Boone indicator. In this study, competition will be investigated in different markets, hence *k* will be representing assets, loans, and deposits. It is noteworthy that the Boone indicator is time dependent, that is, it reflects competition over time, in other words, the Bonne indicator will be estimated on a year-by-year basis. Negative higher values of beta indicate higher competition and vice versa. Ratio of average variable cost to revenues has been used by several studies as a proxy for marginal cost, whereas relative values of profit and the ratio of variable cost to revenues were used by Boone and Weigand (2000)[34] as the independent variable; however, Boone et al. (2004)[35] used absolute values of profits instead of the former. This study considers use of translog cost function for the estimation of marginal cost; this is owing to the fact that it enables focusing on different segments of the market, such as asset, loan, and deposit markets. In addition, this study considers use of market share instead of profit values as the values of the former are always positive, whereas the values of the latter can be sometimes negative (negative values are excluded when log-linear specifications are considered). In other words, the use of market share helps to avoid the generation of biased results due to ruling out negative profits of inefficient banks, that is, ignoring banks with higher losses and inefficiency.

The marginal cost is estimated using translog cost function, where three outputs (total assets, total loans, and total deposits) and two input prices (price of funds, price of capital) are considered. Following Shair et al. (2019)[36], the specification of the translog cost function is represented by Equation 2 below:

$$\begin{aligned}\ln TC_{it} = {} & \delta + \gamma 1(\ln Y_{it}) + \omega 1(\ln W1_{it}) + \omega 2(\ln W2_{it}) + \gamma 2(\ln Y_{it})^2 + \\ & \gamma 3(\ln Y_{it})(\ln W1_{it}) + \gamma 4(\ln Y_{it})(\ln W2_{it}) + \omega 3(\ln W1_{it})^2 + \\ & \omega 4(\ln W2_{it})^2 + \omega 5(\ln W1_{it})(\ln W2_{it}) + e_{it}\end{aligned} \qquad \mathbf{(2)}$$

where TC is the total cost of a bank, *Y* represents two outputs, namely total deposits or total loans, *w* stands for two input prices with *W1* representing the price of funds which is measured by the ratio of interest expenses to total deposits, *W*2 represents the price of capital, which is measured by the ratio of non-interest expenses to total assets, two input prices are considered due to the fact that non-interest expenses include the labor cost as

well (Hasan and Morton, 2003)[37]. In other words, the price of capital considers the factors relating to the price of physical capital as well as the price of human capital. The linear homogeneity is ensured by normalizing the dependent variable and *W1* by another input price *W*2.

The marginal cost of total loans can be obtained by taking the first derivative of the dependent variable in the above (equation 2) in relationship to the output loans as follows:

$$MCTL_{it} = \frac{TC_{it}}{Y_{\mathrm{it}}}(\gamma 1 + \gamma 2\ln(Y_{it}) + \gamma 3\ln(W1_{\mathrm{it}}) + \gamma 4\ln(W2_{it})) \qquad (\mathbf{3})$$

The marginal cost of total deposits can be obtained similarly by taking the first derivative of the dependent variable in the above (equation 2) in relationship to the outputs deposits as below, Equation 4:

$$MCTD_{it} = \frac{TC_{it}}{Y_{\mathrm{it}}}(\gamma 1 + \gamma 2\ln(Y_{it}) + \gamma 3\ln(W1_{\mathrm{it}}) + \gamma 4\ln(W2_{it})) \qquad \mathbf{(4)}$$

The marginal cost of total assets can be obtained similarly by taking the first derivative of the dependent variable in the above (equation 2) in relation to the output assets as below, Equation 5:

$$MCTA_{it} = \frac{TC_{it}}{Y_{\mathrm{it}}}(\gamma 1 + \gamma 2\ln(Y_{it}) + \gamma 3\ln(W1_{\mathrm{it}}) + \gamma 4\ln(W2_{it})) \qquad \mathbf{(5)}$$

Accordingly, the model representing the impact of competition on profitability and risk profile are shown in Equations 6 and 7, respectively.

$$Prof_{it} = C + \sum_{j=1}^{j} \beta_j X_{it}^{j} + \sum_{l=1}^{l} \beta_l X_{it}^{l} + \sum_{m=1}^{m} \beta_m X_{it}^{m} + v_{it} + \mu_{it} \qquad \mathbf{(6)}$$

Where *i* refers to year and *t* refers to an individual bank, $Prof_{it}$ represents the profitability indicator for the specific bank at a specific year, *C* is the constant term. X_{it} are determinants of bank profitability, which are grouped into three different categories. Bank-specific determinants including bank size, interest rate spread, credit risk, liquidity risk, X_{it}^{j}; industry-specific determinants including competition in different banking markets, 3-bank concentration ratio, stock market development and

banking sector development, X_{it}^{l}; and macroeconomic determinants represented by inflation and GDP growth, X_{it}^{m}.

For the impact of competition and other relevant variables on the risk profile of a bank, we consider Model 7 shown below:

$$Risk_{it} = C + \sum_{j=1}^{j} \beta_j X_{it}^{j} + \sum_{l=1}^{l} \beta_l X_{it}^{l} + \sum_{m=1}^{m} \beta_m X_{it}^{m} + v_{it} + \mu_{it} \quad \textbf{(7)}$$

where $Risk_{it}$ represents the risk indicator for the specific bank at a specific year, C is the constant term. X_{it} are determinants of bank risk. Other specifications are the same as in Eq. 6. However, credit risk, liquidity risk, as well as capital risk are dependent variables in Eq. 7, income diversification is inserted in Eq. 7 as an additional explanatory variable.

Given that the sample is small, the Generalized Method of Moments (GMM) cannot be employed due to the problem of many instruments; this restriction (number of groups greater than the number of instruments) cannot be met under GMM. Hence, this study employs the Generalized Least Squares technique (GLS) to estimate Models 6 and 7. Under GLS, to decide between Ordinary Least Squares (OLS), fixed and random effects, Breusch-Pagan LM and Hausman tests are used. The former is used to decide between OLS and random effects and the latter between fixed and random effects. If random effect is superior to OLS, we proceed to decide between fixed and random effects, otherwise OLS is preferred. According to Table 5, random effect is found to be superior to OLS and fixed effect.

Table 5: Decision between OLS, Fixed and Random effects

Breusch-Pagan LM test	P-value (0.0000)	Random is superior to OLS
Hausman	P-value (0.9824)	Random is superior to fixed effect

Data source for entity-level, banks, information is retrieved from Refinitiv database. In this study, balanced panel data of 10 banks (5 Islamic and 5 conventional), operating in Kuwait from the year 2013 to 2022, is used, with 100 observations. Other macroeconomic data is collected from Heritage Foundation and world bank websites.

3.3.1 Summary statistics

Table 6 provides descriptive statistics for total costs, inputs, and outputs used in the computation of marginal cost of deposits, loans, and total assets, which will be used in the estimation of the Boone indicator.

Table 6: Input/output descriptive statistics

Variable	Mean	Std. Dev	Min	Max	N. Obs
Total cost	230.1149	235.7435	11.277	1011.43	100
Inputs					
Price of funds	0.0167	0.0071	0.0054	0.0358	100
Price of capital	0.0143	0.0039	0.0051	0.027	100
Outputs					
Total loans	5909.991	5491.049	294.273	24405.75	100
Total deposits	6715.145	6945.99	246.862	30059.41	100
Non-interest income	8215.383	8404.939	405.51	36969.45	100

Note: total cost = interest expenses and non-interest expenses, price of funds = the ratio of interest expenses to total deposits, price of capital = the ratio of non-interest expenses to total assets.

3.3.2 HHI index and Boone indicator

Table 7 provides HHI index values (concentration) in the Kuwaiti banking sector based on assets, deposits, and loans, in addition to concentration ratios of the largest three banks in Kuwait (National Bank of Kuwait, Kuwait Finance House, and Burgan Bank). HHI indices and CRs show that the sector is extremely concentrated[38].

Table 7: HHI index and CR-3 in the Kuwaiti banking sector

Year	**2013**	**2014**	**2015**	**2016**	**2017**	**2018**	**2019**	**2020**	**2021**	**2022**
HHI asst	0.191	0.196	0.196	0.194	0.195	0.193	0.188	0.189	0.193	0.211
HHI dep	0.192	0.198	0.197	0.196	0.196	0.197	0.192	0.194	0.200	0.217
HHI loan	0.175	0.182	0.183	0.183	0.183	0.181	0.175	0.176	0.173	0.184
CRa-3	0.678	0.684	0.667	0.666	0.664	0.655	0.639	0.643	0.639	0.679
CRd-3	0.680	0.684	0.665	0.664	0.661	0.655	0.639	0.646	0.646	0.682
CRl-3	0.638	0.640	0.626	0.630	0.631	0.622	0.595	0.602	0.588	0.624

Note: HHI asset, the market concentration based on assets; HHI dep, the market concentration based on deposits; HHI loan, the market concentration based on loans; CRa-3, concentration ratio of largest three banks based on assets; CRd-3, concentration ratio of largest three banks based on deposits; CRl-3, concentration ratio of largest three banks based on loans.

Table 8 provides the Boone indicator estimate based on deposits, loans, and assets. In essence, the Boone indicator is expected to be negative; however, in the case of the Kuwaiti banking sector it is positive. This is not quite striking as it reflects the nature of the sector being highly concentrated (based on Table 7, the three major banks hold more than 60% of

assets, deposits, or loans). They dominate the three markets. The positive value is feasible, and it would mean that the marginal costs of funds for banks are higher, and they will make more profit.

Table 8: Boone indicator in the Kuwaiti banking sector

Year	**2013**	**2014**	**2015**	**2016**	**2017**	**2018**	**2019**	**2020**	**2021**	**2022**
Boone dep	0.57	1.14	0.79	0.83	0.83	0.79	0.34	0.22	0.61	0.54
Boone loan	1.25***	1.22***	1.17***	1.15***	1.41***	1.46***	1.69***	1.58**	0.92**	1.73*
Boone asset	1.74***	1.79***	1.48***	1.23	1.76**	1.64**	2.37**	2.27*	1.07*	1.85

Notes: Boone dep, market competition based on deposits; Boone loan, market competition based on loans; Boone asset, market competition based on assets.
***, **, * denotes signification level at 1%, 5%, and 10% respectively.

Table 9 reports summary statistics of variables used in the profitability and risk models. Overall, the low standard deviation for ROAA, ROAE, credit risk, capital risk, and concentration indices signify the existence of homogeneity across banks regarding those variables. On the other hand, there is considerable heterogeneity in liquidity risk and bank

size among the banks, in addition to spread, bank sector development, and competition indicators at the sector level.

Table 9: Descriptive statistics of variables used in the models

Variable	Mean	Std. Dev.	Min	Max	Obs
ROAA	0.007	0.0058	-0.0143	0.0188	100
ROAE	0.0561	0.0507	-0.1392	0.1463	100
Credit risk	0.0444	0.0392	0	0.1663	100
Liquidity risk	0.9765	0.1605	0.67	1.52	100
Capital risk	0.1860	0.0393	0.135	0.4754	100
HHI asset	0.1946	0.0061	0.188	0.221	100
HHI deposit	0.1979	0.0068	0.192	0.217	100
HHI loan	0.1795	0.0040	0.173	0.184	100
CRa-3	0.6614	0.016	0.639	0.684	100
CRd-3	0.6622	0.0153	0.639	0.684	100
CRl-3	0.6196	0.0173	0.588	0.64	100
Boone asset	1.72	0.3860	1.07	2.37	100
Boone depo	0.666	0.2548	0.22	1.14	100
Boone loan	1.358	0.2487	0.92	1.73	100
LN assets	8.6153	0.884	6.005	10.518	100
Spread	2.63	0.3454	2.2	3.2	100
Diversification	0.2904	0.0859	0.1	0.564	100
BSD	1.4284	0.6631	0.6279	2.67	100
SMD	0.1826	0.1299	0.62	0.993	100
GDP growth	0.345	4.4322	-8.9	8.7	
Inflation	2.53	1.02	0.5	3.9	

Notes: ROAA, return on average assets; ROAE, return on average equity; credit risk, impaired loans to gross loans; liquidity risk, loans to deposit ratio; capital risk, capital adequacy ratio; HHI asset, HHI deposit, and HHI loans: concentration based on assets, deposits, and loans, respectively; CRa-3, CRd-3, CRl-3, concentration ratio of largest three banks based on assets, deposits, and loans, respectively; Boone asset, depo, and loan: Boone indicator a measure of competition based on assets, deposits, and loans, respectively; spread, lending rate minus deposit rate; LN assets, LN total assets; diversification, non-interest income to total income; BSD, banking sector development (sector assets to GDP, %); SMD, stock market development (market cap to GDP, %). GDP growth, gross domestic product growth (annual %); inflation, consumer price index (CPI).

3.3.3 Empirical results and discussion

Based on Table 12, overall, it is observed that competition in the different markets is not a significant determinant of profitability (ROAA). This is further supported by the positive values of Boone indicators in Table 8. This statistically low impact of competition can be attributed to the imposed restrictions on conventional banks such as ceiling or pricing cap by regulatory authorities. Concentration, on the other hand, proxied by HHI and CR-3, is documented as a significant determinant of profitability in the three markets. This is also not a striking finding as the banking sector in Kuwait is highly concentrated; in other words, large banks are better off in terms of generating profit. Interest rate spread is also observed to be a significant determinant of bank profitability; the higher the spread, the more income banks earn. Credit risk and liquidity risk are also significant in profitability determination; they exert a negative impact on profitability. Stock market development is documented as having a positive impact on profitability; a possible explanation for this is that the more developed the stock market, the easier fund seekers find it to access finance, which in turn expands the circle of lending activities, and therefore income generation for banks. GDP is observed to have a positive significant impact on profitability, this can be attributed to the fact that during times of economic growth and boom banks extend more loans and make more investment, which in turn boost lending and investment. In contrast, inflation, the other macroeconomic determinant, was documented as negatively affecting profitability; this is due to inflation effects on real value (adjusted for inflation). For robustness check, ROAE is used as an alternative proxy for profitability, Table 13. The results presented in Table 13 are robust and in line with those of ROAA (Table 12). One exception is observed where concentration (HHI) in the three markets is no longer a significant determinant of profitability; however, it maintained its positive impact.

As for risk (Model/Eq. 7), the findings, based on Table 14, suggest that concentration has a favorable impact on credit risk, where it reduces non-performing loans to total loans ratio. This holds for assets and deposits, but not for the loan market as the impact is favorable but insignificant. Spread is observed to exert a positive impact on credit risk. This can be due to the fact that higher spread implies charging high interest rates leading to amplifying default risk for borrowers. In the same vein, income diversification increases

credit risk; this can be attributed to monitoring difficulties banks face in monitoring loans as their monitoring ability differs across sectors and to the loans' exposure to sector downturns. Banks need to sufficiently understand the market or sector they are going to deal with. As for liquidity risk, Table 15, concentration is observed to increase loans to deposits ratio, this can be due to the notion that banks operating in high concentrated markets are inclined to have robust relationships with borrowers which would reduce the costs associated with asymmetric information (adverse selection and moral hazard problems) leading to high availability of credit to borrowers and consequently lower banks' liquidity. On the other hand, competition was found to have an insignificant impact on liquidity risk. Large sized banks tend to have lower loan to deposit ratios. This can be attributed to the high cost it takes to count on the lender of last resort as interest rates have been increased by CBK. GDP was found to increase loans to deposit ratio. During periods of high GDP, banks tend to expand their lending activities. Finally, capital risk (CAR), Table 16, was found to be insignificantly impacted by concentration and competition. This is owing to the fact that CAR is stipulated in Basel III accord and not determined by competition and concentration forces. In the same vein, spread and GDP were documented as having an insignificant effect on CAR. In contrast, size was found to exert a negative impact on CAR; an explanation for this would be the trade-off between CAR and profitability. Large banks tend to have a CAR level that does not pose capital risk exposure and concurrently does not reduce its profitability. Similarly, diversification was found to decrease CAR; banks engaging in non-interest income activities tend to lower their CAR looking for new sources of income other than those linked to interest.

3.4 Barriers to entrance and exit- licensing procedures and practices, capital requirements, regulations affecting bank activities.

The market is said to be competitive when barriers to bank entry and exit are few. Less restrictive regulations on bank entry exert pressure on incumbent banks and keep the sector competitive regardless of the degree of concentration (Demirgüç-Kunt & Martínez Pería 2010)[39]. Entry[40] makes firms watchful of their products prices and quality compared to their rivals as customers will switch away to new entrants if their needs are not catered for in

terms of price and quality. It also helps keep prices low, as well as driving equilibrium situation from one condition to another owing to the introduction and diffusion of innovations. On the other hand, barriers to exit, like barriers to entry, weaken the market discipline mechanisms of the competitive process, which act to relocate resources from one market or firm to another according to changing conditions. This can lead to less efficient firms staying in the market. As a result, resources (both financial and human capital) become trapped in existing firms instead of being relocated to their most efficient use (OECD, 2019)[41]. Exit can be thought of as a creative-destruction force that punishes unprofitable products and services, it helps renew the market population and keep the market dynamically efficient by allowing efficient and innovative firms in and driving away less efficient ones. Gilbert (1989)[42] defines barriers to exit as "*costs or forgone profits that a firm must bear if it leaves the industry...Exit barriers exist if a firm cannot move its capital into another activity and earn at least as large a return*". His definition includes both direct costs of exit as well as indirect opportunity costs of exit. Regardless of how barriers to exit are defined, they are in agreement that any obstacle that may force a firm to continue operating in a market as the economic costs of leaving might be higher than those incurred if it stays in the market.

On the other hand, barriers to entry are defined as impediments that makes it difficult for a firm to enter a market. Nonetheless, the types of impediments that should be considered as "barriers to entry" and therefore be acknowledged by competition authorities and courts is still controversial. Some scholars are of the view that an obstacle is not considered as an entry barrier unless it is something that the incumbent firms did not face when they entered. Others, however, argue that an entry barrier is anything that hinders entry and has the effect of reducing or limiting competition, regardless of its other characteristics (OECD, 2005)[43]. The debate between scholars and courts on what should be regarded as an entry barrier is still unsettled, yet they continue to be counted on as analytical tools. The U.S. Federal Trade Commission wrote in one merger decision: "*Unless there is a barrier to entry . . ., market power cannot be exercised indefinitely. Sooner or later, new firms will enter the market and drive prices back down to competitive levels. From the standpoint of the public, however, it makes a great deal of difference whether this occurs sooner or later. There may be little practical difference between an absolute barrier to*

entry and conditions of entry that delay restoration of competitive prices for decades." Generally, it can be argued that barriers to entry are to be thought of as any impediments or factors that not only absolutely prevent entry, but also retard it.

There are different types of barriers to bank entry and exit. As for barriers to entry, there are a variety of barriers banks may encounter when planning to enter a specific banking sector, these could be capital requirements, legal/regulatory requirements and compliance, security concerns, competition, market complexities, geographical differences, access to financing, vertical integration of incumbents (operating in in two stages of the chain of production), loyalty of customers to incumbents, economies of scope enjoyed by incumbents rendering the entry unprofitable for potential entrants, and economies of scale enjoyed by incumbents. In addition, barriers to exit are considered as indirect forms of barriers to entry; this is because if it is costly to exit, there will be no incentive to entry, that is, exit costs should be reasonably assumed before entry. The assumption is not inclusive of unforeseen changes such as new technologies or change in legal/regulatory opportunities that may take place post-entry. On the other hand, barriers to exit include, among other things, direct exit costs such as labor related exit cost, regulatory exit requirements, and indirect exit costs such as sunk costs (investments that cannot be recovered in case of exit), long-term contracts with customers and any penalty costs incurred from cutting short the agreement can serve as a barrier to exit, government interventions, bankruptcy regimes, managerial barriers to exit (conflict between the goals of the owners and managers).

In Kuwait, with respect to regulatory efficiency, Kuwait has taken many initiatives to enhance its regulatory framework. The government provides numerous subsidies and controls prices through state-owned utilities and enterprises. As for the open markets, the economy is generally open to foreign investment, but some sectors are restricted. A modern financial regulatory system facilitates and welcomes portfolio investment. The banking sector remains well capitalized. Barriers to bank entry have been relaxed after an amendment to the Kuwaiti Banking Law of 1968 took place, where the National Assembly granted the green light to foreign banks to establish operations in Kuwait[44].

3.5 Behavior of bank spreads

The Kuwaiti banking sector is dominated by commercial lending, with personal loans/financing forming the largest share by sector. The interest rate in Kuwait remained unchanged at 4 % in April 2023. The maximum level was 7.25 % and the minimum was 1.5 %. Table 10 below provides data on interest rate spread (lending rate minus deposit rate, %) in Kuwait over the period 2013-2022, based on International Monetary Fund statistics. It can be observed that the spread has witnessed a relative decline since 2019, which implies that competition among banks increased, in other words, lower spread reflects higher competition, and vice versa. On the other hand, the Central Bank of Kuwait has increased the discount rate leading to tighter margins. Retail lending in Kuwait is subject to a pricing cap and high competition for corporate lending exerted pressure on loan repricing.

Table 10: Interest rate in Kuwait banking sector 2013-2022

Year	**2013**	**2014**	**2015**	**2016**	**2017**	**2018**	**2019**	**2020**	**2021**	**2022**
L	4.6	4.3	4.3	4.5	4.7	4.8	4.8	4.1	3.7	3.9
D	2	2	1.9	1.6	1.6	1.7	1.9	1.6	1.4	1.6
Spread	2.5	2.2	2.4	2.9	3.1	3.2	2.9	2.5	2.3	2.3

Notes: L, lending interest rate; D, deposit interest rate; Spread, interest rate spread.
Source: The World Bank.

3.6 Competition and retail loan pricing, corporate loan pricing, and risk taking in corporate lending.

In pricing their loans, banks consider several factors, of which cost of funds, operating costs associated with servicing the loan or loans, risk premium for default risk, and a reasonable profit margin on capital are of great significance. These factors are normally included in the so-called “Cost-plus loan-pricing model”. In addition to the aforementioned factors, competition (market power) from other lenders plays a vital role in the determination of spreads and loan pricing, especially in today’s banking environment where bank deregulation has significantly intensified competition for both loans and deposits from

other financial service institutions, which in turn narrowed the profit margins for all banks. The model that considers competition from other institutions is called the “Price-leadership model”, where banks rely on the prime or base rate set by key banks and is the rate of interest charged to a bank's most creditworthy customers on short-term working capital loans. The importance of this model lies in being a reference or benchmark for several other types of loans. Under this model, where competition is the consideration, banks aim to reduce funding and operating costs and the risk premium is as competitive as possible. Given that the risk associated with loans is primarily attached to its characteristics and borrower, the assignment of a risk or default premium is one of the complicated aspects of loan pricing. Hence, using credit-scoring systems is one of the risk-adjustment methods employed to setting an appropriate default premium when determining the rate of interest charged to a specific borrower; this includes evaluating potential borrowers and underwriting all forms of consumer credit, including credit cards, installment loans, residential mortgages, home equity loans and even small business lines of credit. On the other hand, banks that adopt risk-based pricing can offer competitive prices on the best loans across all borrower groups and reject or price at a premium those loans that represent the highest risks. Borrowers with good credit scores and lower risk will get a reduced price on a loan as a reflection of the expected lower losses the bank will incur. Moreover, two other factors also impact the risk premium charged by a bank, namely the collateral required and the term, or length, of the loan. In general, when a loan is secured by collateral, the risk of default by the borrower decreases. As for the term of the loan, the shorter the term, the lower the risk by virtue of the fact that the ability of the borrower is less likely to change in the short run.

In Kuwait, banks offer a variety of loans, namely personal loans, consumer loans, housing loans, auto loans, loans against cash collateral, international mortgages, and loan services. Retail loans, in the case of conventional banks, in Kuwait is subject to pricing cap, which exerts pressure on banks’ capabilities when repricing loans. Following the increase in the discount rate by the CBK, and the pricing cap imposed on loans, the interest rate charged by banks increased and net interest improved. This also implied that there could be some migration from current and savings accounts to term deposits in the higher interest rate environment, which will place extra pressure on banks’ funding costs. It is clear that

in banks in Kuwait have to consider many factors in pricing loans in addition to high competition for corporate lending. Pricing of loans in the Kuwaiti banking sector is unique as it does not follow the usual process of charging a spread above respective interbank rates, but loan yields are priced off the main policy interest rate, which is the discount rate. In fact, this brings about a more direct influence on loan yields whenever the discount rate changes irrespective of the behavior of interbank rates (KIBOR). As all banks mainly consider the discount rate in pricing their loans, the differences among banks in terms of pricing is reduced. Given this change in benchmark interest rates, Kuwaiti banks should experience less variation in their net interest margin in comparison with their GCC peers (Ghoussoub, 2020)[45].

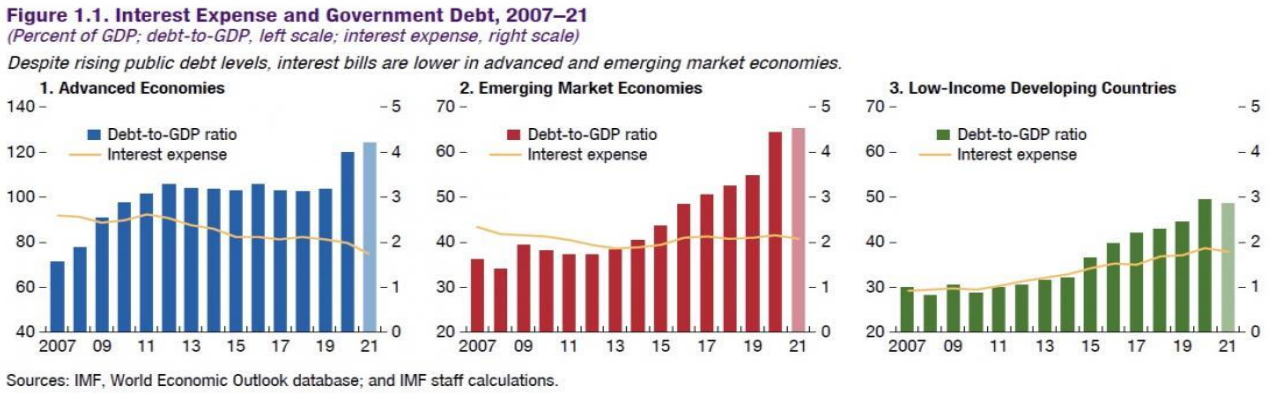
4. Covid and geo-political environment impact on banking competition

The health crisis caused by Covid-19 was one of the worst crisis the world has undergone in its history. It not only claimed millions of lives, but also touched upon every walk of life and left many to struggle under the pressure of financial distress. As such, governments, government agencies, institutions, companies, and individuals had to change their behaviour in order to cope with the dilemma. Governments programs and the financial services industry were in the forefront to combat the effects of the crisis. Companies that could not weather the financial storm caused by the crisis were forced to exit the market and left behind them a serious problem to confront, job losses by the million. On the other hand, governments had to take bold actions to support SMEs and micro-businesses, the self-employed, artisans, liberal professionals, retailers, as well as keeping an open eye on banks given the serious consequences that could result if they failed. As for the banking industry, many requirements had to be revisited to keep banks active and intact in pursuing their operations. In Kuwait, the capital conservation buffer of 2.5%, which was released during the pandemic, was raised to 1% on 1 January 2022 and returned to 2.5% on 1 January 2023. Regulatory liquidity requirements, which had also been relaxed during the crisis, were also reinstated in two phases. The regulatory minimum for the liquidity Coverage Ratio (LCR) and the Net Stable Funding Ratio (NSFR), which were both reduced to 80% from 100% during the pandemic, were raised to 90% on 1 January 2022 and returned to

100% on 1 January 2023. The relaxed capital and liquidity regulatory requirements have mostly benefitted a small number of fast-growing banks.

The Covid-19 crisis affected not only individual countries, but it also changed the global balance of power as well as geo-economics and geo-politics. The recovery is still underway along with uncertainties overwhelming the landscape. Nonetheless, the gap between emerging and developing countries and the advanced economies is prominent. This is coupled with the fierce competition between the US and China. The gap is mainly attributed to the ability of countries in mobilizing public finances. Advanced countries managed to significantly increase their public spending, while emerging countries did so but to a lesser extent. On the other hand, low-income countries had slightly lowered their public spending. It is obvious that the speed towards recovery significantly varies between three types of country. Some countries managed to boost their debt level, while other countries did not; this could be attributed to their respective central banks' expansionary monetary policies. Figure 4 shows that interest bills are lower in advanced and emerging economies despite the high levels of public debt. However, the debt of the richest countries has grown around 20 GDP percentage points since 2019 and they have accumulated a stock of debt equivalent to 120 % of their GDP. For emerging countries, the debt level has grown only by 10 GDP percentage points to 65 % of GDP and for the poorest countries debt growth has been from 5 GDP percentage points to less than 50 % of GDP. These figures could be a signal for a "systemic debt crisis" looming and call for debt restructuring initiatives sooner. It is noteworthy to mention that increasing public spending may trigger serious inflation concerns.

Figure 4: Interest bills in advanced and emerging economies



Source: IMF, World Economic Outlook database; and IMF staff calculation

The gap between the three types of country in terms of recovery speed was not witnessed during the great recession of 2008-2009, where advanced countries suffered more than emerging and developing ones. One may argue that this is a sign that a geopolitical issue could be the case, but when looking back at the global financial crisis, it is clear that the crisis emerged in advanced economies first and got transmitted to the rest of the world, and hence the claim of geopolitical issue is somewhat misleading. However, the race between the US and China towards recovery and dominance may be the most relevant geopolitical issue at the current stage. China returned to pre-crisis activity levels in 2020, while the US was anticipated to do so in the first half of 2022. On the other hand, low-income countries may manage to return to pre-pandemic activity levels in 2023.

In the banking sector, more capital (buffers) was required for banks to absorb the financial shock brought about by Covid-19. In doing so, banks had to hold sufficient capital to remain intact, this is alongside complying with capital requirements and activity restrictions imposed by regulators and policy makers, especially in concentrated banking markets, which were mainly aimed at preventing banks from engaging in risky activities triggered by the increased competition. Seven trends are expected to dominate and reshape strategies[46] in the banking landscape post-pandemic, namely a new monetary policy, digitalization, regulation, economic growth, new entrants, competitive landscape, and government support. Dealing with these trends reshaping the future of the banking industry will mainly lie upon the shoulder of regulatory authorities. The measures to be taken are related to fiscal policy (public debt and deficit), monetary policy (credit provision assurance, appropriate policy rate), and regulations (supporting the flow of credit to the economy, mitigating operational and financial risks for the banking system and increasing operational capacity to respond to short term financial stability). Change in regulatory framework is imperative. The is a dire need to consider the following: borrower relief measures, regulatory flexibility maintaining sound capital levels, postponed or revised implementation timeline of ongoing regulation such as Basel III standards and supervisory and reporting activities.

5. The implications of competition for risk appetite of Kuwaiti banks

Banks' risk taking behavior is determined by several factors, of which competition in the market is the main factor. This has been a serious challenge, especially during the global health crisis triggered by Covid-19. Banks had to hold sufficient capital to cope with the effects of the crisis and weather the repercussions of the storm it brought about. At the same time, they had to ensure they remained competitive enough against other peers in the market. In the GCC region, during the crisis, banks were enjoying solid buffers which served as a shield against the crisis and the fall in oil prices. Serious challenges lay ahead for banks to deal with, namely, deterioration of asset quality, a fall in Net Interest Margins (NIMs) due to lower interest rates, and a potential tightening in liquidity, which could affect profitability. This leads to expectation of risk costs during and in the aftermath of the crisis. However, KSA and Kuwaiti banks exhibited robust asset quality metrics coupled with strong capitalization levels and liquidity buffers, which will assist banks to withstand the storm triggered by the crisis (Ghoussoub, 2020)[47]. To stay resilient and maintain funding normal business activities, whether corporate or retail, banks had to deal with the three aforementioned challenges, namely (i) a possible weakening in asset quality; (ii) a fall in interest rates and the consequent pressure on banks' (NIMs); and (iii) a potential tightening in liquidity. At the end of 2019, Kuwaiti banks had a non-performing loans ratio (NPL) of 1.4% while enjoying a material NPL coverage ratio (provisions divided by NPLs) in excess of 280%. This was substantiated by provisions exceeding gross loans (2.57); this means that even if NPLs were to reach 2.57%, the coverage ratio would not fall below 100%. However, cost of risk (credit provisioning as a % of average gross loans) for Kuwaiti banks as of 2018 exceeded its GCC peers, which reflects that Kuwait's measure has been remaining high. Imperative measures taken by relevant authorities to keep the banking sector intact in the face of the health crisis has brought about alterations in competition among banks. In the process of complying with the stipulated measures to confront the crisis, banks had to revise their risk-taking behavior in order to remain competitive enough so as to maintain previous profitability, and, at large, not to exit the market. Another factor that contributed to competition in the Kuwaiti banking landscape is allowing foreign banks to operate more than one branch as of 2015. However, the banking system in Kuwait is

extremely protected by strict central bank regulation along with intervention when necessary (e.g., during the Covid-19 pandemic, CBK provided liquidity if needed, decreased discount rates, repo rates, reduced capital adequacy ratio, and reduced risk weighting for SMEs as well as a maximum limit for the interest rate banks charge them so as to distance them from bankruptcy. Despite taking the necessary measures to ensure the survival of SMEs, a report by Stiftung's Transformation Index (BTI) showed that out of 500 businesses to which a survey was distributed, 45% didn't manage to survive and were forced to shut down, while 26% are on the verge of closure (BTI, 2022)[48]. Given that the CBK lends material consideration to the stability of the KD and the sustainability of the local banks. Geoffrey Martin (2022)[49] argues that "*alongside spending cuts, the government needs to develop a broader financial sector, and drive private sector participation and growth as quickly as possible. Much of this must be done in opposition to Kuwait's banking sector, which is resistant to facilitating bond and equity markets as it creates competition for their deposits and loans and means that they will lose their commercial lending advantages*".

6. The implications of competition for Kuwaiti banks profitability

Competition in a banking sector plays a significant role in the determination of Banks profitability. In a scenario where competition is intense, low concentration, banks compete in deposit and loan markets offering high deposit rates and low loan rates to attract potential depositors and borrowers. In this scenario banks could be enticed to engage in risky activities and overlook the quality of borrowers, which in turn gives rise to the problem of passive selection leading to a high default rate. In the alternative scenario, banks operating in low-competition sectors enjoy market power (price setting). In this case, banks are known as systemically important financial institutions due to their importance and the disastrous effects they could bring about if they go bankrupt, hence they get bailed out by the government if they face financial problems. As a result, these banks may trigger moral hazard and engage in risky activities knowing that they will be backed by the government if things go wrong. On the other hand, the enjoyed market power may cause them to indulge in so-called quiet life at the expense of efficiency and pursuit of more innovative products to advance the market. Two banks in Kuwait, namely NBK (including its subsidiary

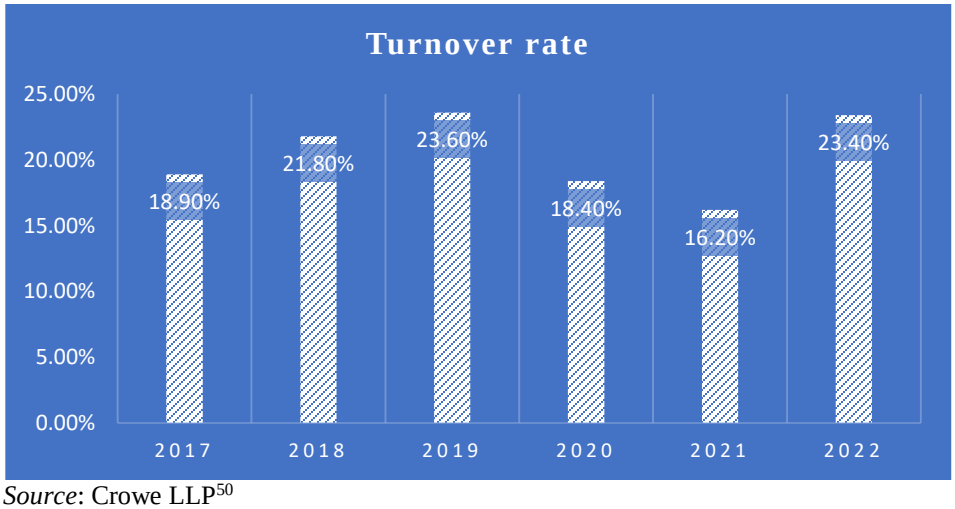
Boubyan) and KFH (after absorbing AUB's Kuwaiti operations) hold 28% and 33% of the banking sector assets respectively. This indicates that the banking sector in Kuwait is considerably concentrated. Given the strong competition position enjoyed by the two banks, consolidation prospect is highly expected among small banks to face the intense competition from the two giant lenders. Nevertheless, consolidation may not take place in case the market gets balanced and credit profiles and profits growth become healthy for other small banks, especially after the relief brought by higher oil revenues. Despite the several challenging events faced by the banking industry across the globe such as the pandemic, inflation, war, rising interest rates, supply chain disruptions, the four largest banks in Kuwait recorded material improvement in net profit by the end of the year 2022. NBK recorded KD 509.1 million (40.5% increase compared to 2021), KFH reported KD 357.7 million (47% increase compared to 2021), Burgan recorded KD 52.13 million (15% increase compared to 2021), and Gulf Bank recorded KD 61.8 (47% increase compared to 2021).

7. Talent war among banks and its implications for banks' performance from a cost to income perspective in Kuwait

With the unprecedented transformation and advancement in the banking industry in terms of technologies and innovations, it became inevitable for banks to attract and hire staff well-equipped and informed about their use so that they are harnessed in favor of the bank. For banks to boost their competitive position and the advantages it brings, banks seek and search for competent staff capable of harnessing new emerging technologies. Regardless of competition for depositors and borrowers, banks are currently competing for talented staff, it is better known as the "War for Talent". This type of employee is vital for banks to maintain and grow their operations. Banks lacking skilled employees capable of originating greater amounts of loans will be exposed to challenging pressures that limit their productivity, scalability, and long-term growth. In searching for skilled employees, banks incur not only recruitment costs, but also the time that it sometimes takes to find talented employees for specific positions within a bank. Struggling to find talent will cause a bank to fall behind and miss out on opportunities to further develop areas that require more time and resources. Success in 2022 requires banks to seek solutions that don't require hiring

additional resources given that hiring talent can be burdensome for them. In other words, they have to leverage technology to remove the barriers of tedious routine work to accelerate small business lending. This can be achieved by building their respective tech and leveraging fintech partnerships. The latter, fintech partnerships, will allow banks to empower their current employees to focus on more strategic areas of the business, like building relationships with borrowers. As compared to hiring new employees and providing them with training, numeration and automation of processes such as loan applications, document collection, and underwriting, etc. via technology solutions is far better in terms of time saving for banks in their day-to-day activities. Hence, battling the war for talent could be a wrong decision in the presence of a better alternative, leveraging numerated platforms. Figure 5 shows that banks' employees stayed put in their jobs at the height of the pandemic but have bolted for other employers in 2022 at the highest rate in at least six years. Employees are on standby to leave their current jobs if better opportunities are secured elsewhere. Hence, it seems challenging for banks not only to hire talented staff, but also to retain them. Therefore, to tackle this issue, instead of focusing on generous salaries and benefits alone, banks must improve their training programs and culture to keep their employees energized and engaged. It becomes more challenging if low unemployment rates and increasingly intense competition for top recruits from banking rivals as well as other industries persist, which means that high turnover is highly expected to continue. Banks also need to make their employees feel valued, grant them recognition and growth opportunities, and provide them with a flexible, healthy, diverse, and transparent workplace to keep them committed.

Figure 5: Employees turnover rate



Source: Crowe LLP[50]

In terms of the cost and income implications of the war for talent and numerated platforms, it is obvious that numerated platforms reduce work and time procedures/operations takes to be done as well as associated costs, which in turn contribute to net income. On the other hand, hiring talented and skilled employees incurs material non-interest expenses, namely higher salaries, compensations, and benefits.

8. New payment technologies and its implications for banks fee income

Traditionally, banks have two main sources of income, interest income and non-interest income. The former is generated from lending activities, the core activities of banks, where they accept deposits and from the accumulated deposits the banks lend money, or what is known as margins. On the other hand, the latter is generated from non-core activities; this includes loan processing fees, late payment fees, credit card charges, service charges, penalties, etc. With advancement in communication and information technology and the emergence of new financial technology innovations such as Financial Technology (Fintech), these innovations include peer-to-peer lending, cryptocurrencies, and mobile payments. These innovations paved the way for banks to expand and look for new sources of non-interest income, as the latter contribute significantly to total revenues, and therefore profitability. The emergence of fintech has significantly boosted the role of e-banking methods such as ATMs, mobile banking, internet banking, and debit and credit cards, which allowed banks to generate substantial transaction fees. However, the latest developments in fintech allowed most customers to have access to services without interacting with banks

directly (non-intermediary financial services). This is considered as a threat to banks' traditional fee-income generating method. Thakor (2019)[51] found that payments, clearing, and settlement services are the highest number of fintech service providers, and the payment system is one of the most likely disrupted areas by Fintech. Ozili and Outa (2019)[52] stated that payment services fee is the largest source of non-interest income for a bank, which means that when this source of income is disrupted by Fintech payment, the bank faces the threat of losing a great deal of its income source. This threat, in turn, will also negatively affect banks' profitability. This effect of fintech payment can be observed in the reduction in customer deposits as well as a reduction in the fee-based income generated by banks, and also in their competition position (Chen et al., 2020)[53]. Accordingly, for banks to contain the threat fintech poses to their business, it is recommended that banks create a synergy with fintech firms in the form of fintech-bank collaboration. This collaboration will result in a reciprocal benefit, where banks will be empowered to increase fee-based income and profits, and fintech firms will be able to secure funds for larger investment such as infrastructures, access to customers, and build a trustworthy reputation through banks.

9. Implications of digital banks and new Telco market penetration for banking and financial services landscape

Since their emergence, digital banks and new telco has transformed the global financial industry and posed unprecedented challenges for incumbent banks. They have lessened the role played by traditional banks in advancing financial services landscape. This is along with increasingly digitally advanced customers, notably millennials and post-millennials, seeking more convenience and better customer services via mobile or tablet platforms. Many areas including financial servicing have been experiencing acceleration in the adoption of financial technology, especially during and in the aftermath of the health crisis Covid-19 triggered. This has posed competitive threats to incumbent banks and propelled them to look for ways to stay contestable in the face of new players such as startup companies specializing in financial technology. The latter provides the same traditional services banks provide. Hence, it is imperative for banks to embrace digital transformation to boost their competitiveness in terms of customers attraction and reduction in costs.

Embracing digitalization by banks could deepen concentration in the banking system with sizeable banks gaining market share, while smaller and less-profitable banks with finite customer bases may eventually exit the market. One advantage of banks' digitalization is enhancing financial inclusion; however, digitally illiterate customers may face difficulties accessing banking services, and some bank employees could lose their jobs due to automation (Liu, 2021)[54]. The digital transformation of the banking industry can be broadly seen from two lenses, namely technologies used and services affected, as shown in Table 11. Different technologies such as cloud technology, AI-powered chat boxes, and robot advisory platforms can be more efficient, cheaper, and more transparent substitutes for many human-performed tasks within banks.

Table 11: Banking digital transformation dimensions

Financial Services	**Technology**
• Payments, clearing, settlement • Credit, deposits, and capital-raising • Wealth Management • Investment banking • Communication	• Cloud • AI/machine learning/advanced data analytics • Big data • Distributed ledger (DLT) • Application programming interfaces (APIs) • Robot advisor • Mobile technology

Source: Liu (2021)

The real penetration of the financial services landscape by digital innovations took place in the after math of the Global Financial Crisis (GFC), the time during which banks were busy struggling to fix balance sheets and set more stringent regulations. The young generation of customers was attracted by fintechs and bigtechs that provided them with new innovations and high quality digital-based services which cater for their ever-changing needs. Citi (2019)[55] has estimated that digitalization could cut banks' operational cost by

30 percent to 50 percent mainly due to fewer branches and employees, but revenues would also decline for all banks by 10 percent–30 percent due to enhanced competition and transparency. Nonetheless, the advantages of digitalization could vary by the size of the banks and their business models, suggesting a probably more concentrated banking industry. It is also expected that digitalization will affect not only less digitally competent employees in some job roles, but also will make it difficult for digitally-illiterate customers who are less open to embracing technology, as well as those living in remote areas to access financial services. Regarding social benefits, the latter two types of customers, if empowered to get used to technology and digital innovations, will make banks' digitalization more efficient in terms of customer reach or financial inclusion. Karlan et al. (2016)[56] studied the behavior of credit, savings, insurance, and payments and documented that digital financial services remarkably enhance client well-being both directly and through enabling a broader ecosystem.

10. Conclusion and recommendations

This study aimed to investigate the role played by competition in the determination of bank profitability and risk in the Kuwaiti banking sector. It, firstly, explored competition from the theoretical lens in light of assets, loans, and deposits. Then it cast light on features of competition in the Kuwaiti banking sector, customers and banking rates, size of the economy, liquidity and number of players within the banking sector, and growth prospects. It also addressed the most appropriate measure of competition in light of the regulatory environment of Kuwait. Specifically, it presented the Boone indicator as being the most relevant measure of competition in the Kuwaiti banking sector. It further addressed barriers to entrance and exit and their effects on bank activities. Furthermore, it looked at the relevance of behavior of interest rate spread to competition, and the relation between competition and retail loan pricing, corporate loan pricing, and risk taking in corporate lending. The paper also covered diverse themes including Covid-19 and the geo-political environment's impact on banking competition, the implications of competition for the risk appetite of Kuwaiti banks, the implications of competition for Kuwaiti banks' profitability, the talent war among banks and its implications on banks' performance from a cost to income perspective in Kuwait, new payment technologies and their implications for banks'

fee income, and finally, the implications of digital banks and new Telco market penetration for the banking and financial services landscape. The findings documented the non-determining impact of competition for profitability and risk, which can be attributed to the higher concentration in the market. On the other hand, the findings documented the highly significant favorable impact of concentration as a determinant of profitability and risk. This substantiates the favorable impact the recent acquisition of AUB by KFH will have on the sector at large, the acquisition rendered the KFH larger and more competitive side by side with NBK. The increased dominance of NBK and KFH has raised the prospect of further consolidation in the market among the country's smaller lenders. Interest rate spread was observed to exert a significant positive impact on bank profitability. Stock market development was observed to exert a positive impact on profitability. The more developed the stock market, the easier borrowers find it to access funds, which in turn expands bank lending activities, and therefore income generation. GDP growth and inflation found to be affecting profitability positively and negatively, respectively. As for risk measures, competition was found to have no significant effect on credit, liquidity, and capital risks. In addition to being favorable for profitability, concentration was also documented to be favorable for the banking sector in Kuwait in terms of reducing credit risk, while increasing the loan to deposit ratio, which does not necessarily mean high liquidity risk. As for capital risk, concentration was observed to reduce capital adequacy ratio. In Kuwait CAR was documented as being sufficient to withstand adverse financial events, where banks realize the trade-off between having an extremely high CAR and good profitability. Banks in Kuwait maintain a good level of CAR; not too high to reduce profitability, and not too low to impair banks' ability to absorb shocks and financial distress. Overall, it can be concluded that it is concentration that, in the first place, drives profitability and the risk profile of banks in the Kuwaiti banking sector. Apart from profitability and risk determination, the study shed light on Covid-19 and the geo-political environment's impact on banking competition. The health crisis showed the depth of the recovery gap between developed, emerging, and developing nations, which was mainly attributed to their ability to mobilize public finances. It also showed how the race towards recovery between China and the US is accelerating. At the banking sector level, capital buffers were of significant importance in absorbing the financial distress brought about by the Covid-19 crisis. The new trends

reshaping the future of the banking industry landscape post-pandemic, namely new monetary and fiscal policies, digitalization, regulation, economic growth, new entrants, competitive landscape, will mainly lie upon the shoulder of the government support and regulatory authorities. The study also touched upon the "Talent war" among banks, it stresses that it is not all about hiring talented staff, but also how to retain them given the recent high employee turnover rate. To do so, banks need to improve their training programs and culture to keep their employees energized and engaged. In addition, banks also need to make their employees feel valued, grant them recognition and growth opportunities, provide them with a flexible, healthy, diverse, and transparent workplace to keep them committed. The study also showed that, in light of new payment technologies, banks are recommended to create a synergy with fintech firms in the form of fintech-bank collaboration. This collaboration will result in a mutual benefit, where banks will be empowered to increase fee-based income and profits, and fintech firms will be able to secure funds for larger investments such as infrastructures, access to customers, and build a trustworthy reputation through banks. Finally, it showed that, in the era of digital banks and the Telco market, incumbent banks need to embrace digitalization to stay competitive in the face of digital players. This can be achieved by providing enhanced digital financial services that improves client well-being both directly and through enabling a broader ecosystem. Considering these findings, the following recommendations have been made:

- Given the positive ROAA and ROAE as well as reduced risk in light of the current highly concentrated market, concentration of the market is to be valued and encouraged. This is in line with the view of Beck et al. (2003) that fewer big banks are easier to control and supervise than many small banks.
- In the era of Talent war, banks need to improve their training programs and culture to keep their employees energized and engaged. In addition, they also need to make their employees feel valued, grant them recognition and growth opportunities, provide them with a flexible, healthy, diverse, and transparent workplace to keep them committed.
- In the current digital environment, banks are recommended to create a synergy with fintech firms in the form of fintech-bank collaboration. This will benefit both

parties; banks will be empowered to increase fee-based income and profits, and fintech firms will be able to secure funds for larger investments such as infrastructures, access to customers, and build a trustworthy reputation through banks.

- Incumbent banks need to embrace digitalization to stay competitive in the face of digital players. They are to provide enhanced digital financial services that improve client well-being both directly and through enabling a broader ecosystem.

Table 12: Random effect estimation results: profitability model (ROAA)

	Asset			Deposit market			Loan market		
	ROAA			ROAA			ROAA		
Boone asset	0.0002								
	(0.70)								
HHI asset		0.189							
		(1.81)*							
CR-3 asset			0.045						
			(1.76)*						
Boone depo				0.001					
				(1.02)					
HHI depo					0.189				
					(1.83)*				
CR-3 depo						0.065			
						(1.87)*			
Boone loan							0.001		
							(1.51)		
HHI loan								0.093	
								(1.58)	
CR-3 (loan)									0.028
									(1.69)*
Size	0.0004	-0.0004	0.0002	0.0003	-0.0005	0.00005	0.00025	0.0002	0.00028
	(0.24)	(-0.28)	(0.11)	(0.21)	(-0.35)	(0.03)	(0.17)	(0.14)	(0.19)
Spread	0.0032	0.0034	0.0034	0.0031	0.0036	0.0037	0.0031	0.0029	0.0029
	(2.71)***	(2.62)***	(2.65)***	(2.64)***	(2.59)**	(2.63)***	(2.67)***	(2.69)***	(2.59)***
NPL	-0.028	-0.025	-0.028	-0.029	-0.024	-0.027	-0.028	-0.028	-0.028
	(-3.44)***	(-2.35)**	(-3.15)***	(-3.34)***	(-2.17)**	(-2.94)***	(-3.32)***	(-3.25)***	(-3.30)***
LR	-0.0045	-0.0058	-0.0049	-0.0046	-0.0059	-0.0051	-0.0048	-0.0048	-0.0047
	(-1.30)	(-1.68)*	(-1.39)	(-1.36)	(-1.74)*	(-1.44)	(-1.31)	(-1.39)	(-1.34)
BSD	0.0008	0.0025	0.0015	0.0012	0.0017	0.0012	0.00088	0.002	0.0014
	(1.02)	(1.61)	(1.35)	(1.30)	(1.50)	(1.29)	(1.05)	(1.50)	(1.33)
SMD	0.013	0.0058	0.015	0.013	0.0072	0.017	0.012	0.0082	0.013
	(2.18)**	(1.22)	(2.28)**	(2.18)**	(1.52)	(2.37)**	(2.09)**	(1.81)*	(2.21)**
GDP growth	0.0002	0.00008	0.0007	0.00018	0.00002	0.00015	0.00016	0.00018	0.0002
	(2.34)**	(1.95)*	(2.30)**	(2.22)**	(0.56)	(2.27)**	(2.25)**	(2.28)**	(2.39)**
Inflation	-0.0008	-0.00097	-0.0011	-0.00087	-0.0009	-0.0013	-0.00068	-0.0008	-0.001
	(-1.95)*	(-2.17)**	(-2.22)**	(-2.07)**	(-2.18)**	(-2.22)**	(-1.91)*	(-2.17)**	(-2.27)**
Constant	-0.0089	-0.034	-0.038	-0.0086	-0.034	-0.052	-0.008	-0.021	-0.025
	(-0.73)	(-1.62)	(-1.59)	(-0.75)	(-1.64)	(-1.73)*	(-0.73)	(-1.41)	(-1.43)
R^2	0.46	0.49	0.47	0.46	0.50	0.47	0.46	0.46	0.46
Wald test	705.70	70.62	795.26	72.12	79.87	53.93	269	78.15	1443
	[0.000]	[0.000]	[0.000]	[0.000]	[0.000]	[0.000]	[0.000]	[0.000]	[0.000]
N Obs	100	100	100	100	100	100	100	100	100

Notes: ROAA, return on average assets; HHI asset, HHI deposit, and HHI loans: concentration based on assets, deposits, and loans, respectively; CRa-3, CRd-3, CRl-3, concentration ratio of largest three banks assets, deposits, and loans, respectively; Boone asset, depo, and loan: Boone indicator a measure of competition based on assets, deposits, and loans, respectively; Size, LN assets; spread, lending rate minus deposit rate; NPL, non-performing loans to total loans; LR, liquidity risk measured by loans to deposits; BSD, banking sector development (sector assets to GDP, %); SMD, stock market development (market cap to GDP, %). GDP growth, gross domestic product growth (annual %); inflation, consumer price index (CPI).
***, **, * significance level at 1%, 5%, and 10% respectively.
z values are between round brackets, and p-value of Wald test is between square brackets.

Table 13: Random effect estimation results: profitability model (ROAE)

	Asset			Deposit market			Loan market		
	ROAE			ROAE			ROAE		
Boone asset	0.0031								
	(0.77)								
HHI asset		1.56							
		(1.54)							
CR-3 asset			0.45						
			(1.66)*						
Boone depo				0.01					
				(1.22)					
HHI depo					1.54				
					(1.55)				
CR-3 depo						0.59			
						(1.68)*			
Boone loan							0.010		
							(1.32)		
HHI loan								1.05	
								(1.94)*	
CR-3 (loan)									0.34
									(1.80)*
Size	0.0022	-0.004	0.0004	0.002	-0.0048	-0.0005	0.0013	0.0006	0.0013
	(0.17)	(-0.29)	(0.03)	(1.22)	(-0.34)	(-0.03)	(0.10)	(0.05)	(0.10)
Spread	0.026	0.027	0.027	0.025	0.029	0.030	0.025	0.023	0.023
	(2.98)***	(2.87)***	(2.95)***	(3.00)***	(2.79)***	(2.81)***	(3.01)***	(2.99)***	(2.91)***
NPL	-0.20	-0.17	-0.20	-0.21	-0.17	-0.19	-0.21	-0.20	-0.20
	(-4.60)***	(-2.52)**	(-3.93)***	(-4.56)***	(-2.29)**	(-3.50)***	(-4.24)***	(-4.25)***	(-4.29)***
LR	-0.077	-0.087	-0.08	-0.077	-0.088	-0.08	-0.079	-0.081	-0.079
	(-2.05)**	(-2.23)**	(-2.10)**	(-2.12)**	(-2.26)**	(-2.11)**	(-2.06)**	(-2.16)**	(-2.08)**
BSD	0.0013	0.015	0.008	0.005	0.0089	0.005	0.002	0.015	0.009
	(0.13)	(0.89)	(0.65)	(0.46)	(0.67)	(0.49)	(0.21)	(1.05)	(0.77)
SMD	0.15	0.088	0.16	0.14	0.099	0.18	0.14	0.093	0.15
	(2.58)**	(1.53)	(2.68)***	(2.55)**	(1.80)*	(2.72)***	(2.49)**	(1.87)*	(2.61)***
GDP growth	0.0014	0.0005	0.001	0.0014	0.00012	0.0011	0.0012	0.0015	0.0016
	(2.25)**	(1.80)*	(2.25)**	(2.19)**	(0.32)	(2.24)**	(2.21)**	(2.28)**	(2.39)**
Inflation	-0.0076	-0.009	-0.011	-0.0087	-0.009	-0.013	-0.0068	-0.0078	-0.01
	(-2.50)**	(-2.42)**	(-2.36)**	(-2.50)**	(-2.45)**	(-2.31)**	(-2.44)**	(-2.50)**	(-2.47)**
Constant	-0.055	-0.26	-0.35	-0.05	-0.26	-0.45	-0.049	-0.191	-0.25
	(-0.50)	(-1.33)	(-1.51)	(-0.47)	(-1.32)	(-1.58)	(-0.46)	(-1.44)	(-1.62)
R^2	0.44	0.47	0.45	0.44	0.48	0.46	0.45	0.45	0.45
Wald test	926.58	262.56	107.53	297.67	406.79	169.79	218.24	17603.36	108.65
	[0.000]	[0.000]	[0.000]	[0.000]	[0.000]	[0.000]	[0.000]	[0.000]	[0.000]
N Obs	100	100	100	100	100	100	100	100	100

Notes: ROAE, return on average equity; HHI asset, HHI deposit, and HHI loans: concentration based on assets, deposits, and loans, respectively; CRa-3, CRd-3, CRl-3, concentration ratio of largest three banks assets, deposits, and loans, respectively; Boone asset, depo, and loan: Boone indicator a measure of competition based on assets, deposits, and loans, respectively; Size, LN assets; spread, lending rate minus deposit rate; NPL, non-performing loans to total loans; LR, liquidity risk measured by loans to deposits; BSD, banking sector development (sector assets to GDP, %); SMD, stock market development (market cap to GDP, %). GDP growth, gross domestic product growth (annual %); inflation, consumer price index (CPI).
***, **, * significance level at 1%, 5%, and 10% respectively.
z values are between round brackets, and p-value of Wald test is between square brackets.

Table 14: Random effect estimation results: risk model (credit risk)

	Asset			**Deposit market**			**Loan market**		
	Credit risk (NPL/TL)			**Credit risk (NPL/TL)**			**Credit risk (NPL/TL)**		
Boone asset	-0.003								
	(-0.40)								
HHI asset		-1.046							
		(-2.65)***							
CR-3 asset			-0.28						
			(-1.60)*						
Boone depo				-0.003					
				(-0.26)					
HHI depo					-1.017				
					(-2.83)***				
CR-3 depo						-0.39			
						(-2.07)**			
Boone loan							-0.0075		
							(-0.94)		
HHI loan								-0.44	
								(-0.82)	
CR-3 (loan)									-0.16
									(-1.33)
Size	0.0045	0.0069	0.0052	0.0044	0.0071	0.0056	0.0049	0.0048	0.0047
	(0.44)	(0.63)	(0.50)	(0.44)	(0.66)	(0.53)	(0.47)	(0.46)	(0.46)
Spread	0.024	0.022	0.023	0.025	0.021	0.021	0.024	0.026	0.026
	(2.08)**	(1.78)*	(1.87)*	(2.00)**	(1.69)*	(1.75)*	(1.99)**	(2.10)**	(2.03)**
Diversif	0.081	0.07	0.077	0.083	0.071	0.074	0.078	0.08	0.079
	(2.94)***	(2.31)**	(2.61)***	(2.94)***	(2.26)**	(2.47)**	(2.78)***	(2.73)***	(2.68)***
BSD	-0.015	-0.024	-0.019	-0.016	-0.019	-0.017	-0.015	-0.021	-0.019
	(-0.88)	(-1.32)	(-1.06)	(-1.00)	(-1.12)	(-1.01)	(-0.89)	(-1.18)	(-1.08)
SMD	-0.049	-0.005	-0.057	-0.047	-0.013	-0.071	-0.043	-0.025	-0.051
	(-0.80)	(-0.09)	(-0.91)	(-0.77)	(-0.22)	(-1.10)	(-0.71)	(-0.40)	(-0.83)
GDP growth	-0.0017	-0.0011	-0.0017	-0.0017	-0.0008	-0.0015	-0.0016	-0.0017	-0.0018
	(-2.22)**	(-1.67)*	(-2.33)**	(-2.37)**	(-1.17)	(-2.19)**	(-2.38)**	(-2.34)**	(-2.40)**
Inflation	0.0044	0.0056	0.0068	0.0052	0.0053	0.0077	0.0039	0.0048	0.0061
	(2.54)**	(2.84)**	(2.30)**	(2.60)***	(2.41)**	(2.51)**	(2.42)**	(2.22)**	(2.30)**
Constant	-0.025	0.13	0.16	-0.032	0.13	0.24	-0.027	0.031	0.067
	(-0.29)	(1.47)	(1.37)	(-0.33)	(1.38)	(1.78)*	(-0.29)	(0.29)	(0.65)
R^2	0.31	0.33	0.32	0.31	0.33	0.32	0.31	0.31	0.31
Wald test	1583.05	139.47	197.59	211.08	145.44	158.55	403.92	201.80	194.68
	[0.000]	[0.000]	[0.000]	[0.000]	[0.000]	[0.000]	[0.000]	[0.000]	[0.000]
N Obs	100	100	100	100	100	100	100	100	100

Notes: Credit risk; non-performing loans to total loans; HHI asset, HHI deposit, and HHI loans: concentration based on assets, deposits, and loans, respectively; CRa-3, CRd-3, CRl-3, concentration ratio of largest three banks assets, deposits, and loans, respectively; Boone asset, depo, and loan: Boone indicator a measure of competition based on assets, deposits, and loans, respectively; Size, LN assets; spread, lending rate minus deposit rate; diversif, income diversification measured by non-interest income to total income; BSD, banking sector development (sector assets to GDP, %); SMD, stock market development (market cap to GDP, %). GDP growth, gross domestic product growth (annual %); inflation, consumer price index (CPI). ***, **, * significance level at 1%, 5%, and 10% respectively.

z values are between round brackets, and p-value of Wald test is between square brackets.

Table 15: Random effect estimation results: risk model (liquidity risk)

	Asset			Deposit market			Loan market		
	Liquidity risk (loan/depo)			**Liquidity risk (loan/depo)**			**Liquidity risk (loan/depo)**		
Boone asset	0.018								
	(1.17)								
HHI asset		3.37							
		(2.80)***							
CR-3 asset			1.25						
			(2.52)**						
Boone depo				0.0062					
				(0.24)					
HHI depo					3.11				
					(2.44)**				
CR-3 depo						1.47			
						(2.87)***			
Boone loan							0.035		
							(1.98)**		
HHI loan								2.57	
								(1.50)	
CR-3 (loan)									0.97
									(2.00)**
Size	-0. 13	-0.14	-0.14	-0.13	-0.15	-0.14	-0.134	-0.134	-0.13
	(-3.89)***	(-4.23)***	(-3.93)***	(-3.88)***	(-4.31)***	(-4.14)***	(-3.95)***	(-3.77)***	(-3.95)***
Spread	0.004	0.0051	0.005	-0.005	0.0074	0.011	-0.0014	-0.0079	-0.0087
	(0.16)	(0.20)	(0.21)	(-0.21)	(0.29)	(0.44)	(-0.06)	(-0.31)	(-0.35)
Diversif	0.15	0.19	0.17	0.14	0.19	0.18	0.16	0.16	0.16
	(1.29)	(1.82)*	(1.49)	(1.25)	(1.88)*	(1.60)	(1.39)	(1.38)	(1.41)
BSD	0.03	0.062	0.05	0.035	0.047	0.042	0.034	0.066	0.054
	(0.75)	(1.42)	(1.38)	(0.86)	(1.13)	(1.09)	(0.89)	(2.04)**	(1.56)
SMD	0.21	0.072	0.025	0.20	0.10	0.30	0.18	0.074	0.23
	(1.03)	(0.34)	(1.19)	(1.01)	(0.47)	(1.46)	(0.95)	(0.51)	(1.10)
GDP growth	0.005	0.0031	0.0048	0.0049	0.0023	0.0044	0.0045	0.005	0.0057
	(3.47)***	(2.97)***	(3.28)***	(3.24)***	(2.48)**	(3.16)**	(3.09)***	(3.50)***	(3.69)***
Inflation	-0.013	-0.021	-0.026	-0.018	-0.019	-0.028	-0.013	-0.017	-0.024
	(-0.95)	(-1.18)	(-1.36)	(-1.05)	(-1.12)	(-1.60)	(-0.82)	(-0.99)	(-1.24)
Constant	1.83	1.39	1.05	1.88	1.43	0.87	1.87	1.53	1.31
	(6.96)***	(4.26)***	(2.90)***	(6.87)***	(4.09)***	(1.97)**	(6.77)***	(6.49)***	(3.79)***
R^2	0.28	0.30	0.28	0.27	0.30	0.29	0.28	0.28	0.28
Wald test	34.40	35.56	32.40	109.38	54.40	42.10	32.13	694.45	32.52
	[0.000]	[0.000]	[0.000]	[0.000]	[0.000]	[0.000]	[0.000]	[0.000]	[0.000]
N Obs	100	100	100	100	100	100	100	100	100

Notes: Liquidity risk; total loans to total deposits; HHI asset, HHI deposit, and HHI loans: concentration based on assets, deposits, and loans, respectively; CRa-3, CRd-3, CRl-3, concentration ratio of largest three banks assets, deposits, and loans, respectively; Boone asset, depo, and loan: Boone indicator a measure of competition based on assets, deposits, and loans, respectively; Size, LN assets; spread, lending rate minus deposit rate; diversif, income diversification measured by non-interest income to total income; BSD, banking sector development (sector assets to GDP, %); SMD, stock market development (market cap to GDP, %). GDP growth, gross domestic product growth (annual %); inflation, consumer price index (CPI). ***, **, * significance level at 1%, 5%, and 10% respectively.

z values are between round brackets, and p-value of Wald test is between square brackets.

Table 16: Random effect estimation results: risk model (capital risk)

	Asset			Deposit market			Loan market		
	Capital risk (CAR)			Capital risk (CAR)			Capital risk (CAR)		
Boone asset	-0.004								
	(-0.27)								
HHI asset		-0.48							
		(-1.26)							
CR-3 asset			-0.3						
			(-1.16)						
Boone depo				-0.025					
				(-1.77)*					
HHI depo					-0.38				
					(-1.13)				
CR-3 depo						-0.18			
						(-0.97)			
Boone loan							-0.005		
							(-0.80)		
HHI loan								-1.92	
								(-1.43)	
CR-3 (loan)									-0.33
									(-1.14)
Size	-0.035	-0.035	-0.035	-0.035	-0.035	-0.035	-0.035	-0.034	-0.035
	(-2.17)**	(-2.10)**	(-2.16)**	(-2.13)	(-2.08)**	(-2.13)**	(-2.16)**	(-2.17)**	(-2.16)**
Spread	-0.0015	-0.0008	-0.002	0.0007	-0.0009	-0.0015	-0.00003	0.003	0.002
	(-0.08)	(-0.04)	(-0.10)	(0.04)	(-0.05)	(-0.08)	(-0.00)	(0.19)	(0.12)
Diversif	-0.099	-0.10	-0.10	-0.093	-0.10	-0.10	-0.11	-0.10	-0.10
	(-1.76)*	(-1.86)*	(-1.78)*	(-1.86)*	(-1.87)*	(-1.81)*	(-1.77)*	(-1.82)*	(-1.78)*
BSD	0.031	0.027	0.027	0.022	0.029	0.031	0.031	0.0063	0.024
	(3.34)***	(2.75)***	(3.13)***	(3.03)***	(3.09)***	(3.27)***	(3.38)***	(0.44)	(2.83)***
SMD	-0.16	-0.14	-0.17	-0.15	-0.15	-0.17	-0.16	-0.06	-0.17
	(-2.67)***	(-2.51)**	(-2.61)***	(-2.69)***	(-2.53)**	(-2.61)***	(-2.71)***	(-1.22)	(-2.61)***
GDP growth	0.0005	0.0009	0.0006	0.0004	0.0009	0.0006	0.0006	0.0004	0.0003
	(0.87)	(1.60)	(0.99)	(0.75)	(1.94)*	(1.09)	(1.01)	(0.65)	(0.54)
Inflation	0.006	0.007	0.009	0.0079	0.007	0.008	0.006	0.006	0.009
	(1.76)*	(3.04)***	(4.49)***	(3.53)***	(2.93)***	(3.90)***	(1.98)**	(1.88)*	(4.43)***
Constant	0.6	0.67	0.81	0.60	0.65	0.71	0.59	0.87	0.81
	(2.75)***	(2.88)***	(2.22)**	(2.84)***	(3.00)***	(2.47)**	(2.84)***	(2.24)**	(2.17)**
R^2	0.44	0.44	0.44	0.45	0.44	0.44	0.44	0.45	0.44
Wald test	89.89	102.81	102.71	1673.95	121.64	160.50	96.08	158.21	137.69
	[0.000]	[0.000]	[0.000]	[0.000]	[0.000]	[0.000]	[0.000]	[0.000]	[0.000]
N Obs	100	100	100	100	100	100	100	100	100

Notes: Capital risk; capital adequacy ratio (CAR) Basel3; HHI asset, HHI deposit, and HHI loans: concentration based on assets, deposits, and loans, respectively; CRa-3, CRd-3, CRl-3, concentration ratio of largest three banks assets, deposits, and loans, respectively; Boone asset, depo, and loan: Boone indicator a measure of competition based on assets, deposits, and loans, respectively; Size, LN assets; spread, lending rate minus deposit rate; diversif, income diversification measured by non-interest income to total income; BSD, banking sector development (sector assets to GDP, %); SMD, stock market development (market cap to GDP, %). GDP growth, gross domestic product growth (annual %); inflation, consumer price index (CPI). ***, **, * significance level at 1%, 5%, and 10% respectively.

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