THE EFFECT OF FINANCIAL LEVERAGE ON BANK CREDIT: EMPIRICAL EVIDENCE FROM IRAQI BANKS

Suadad Ali Abed Alabbas
Faculty of Administration and Economics,
University of Kerbala
Email: sudad.a@uokerbala.edu.iq
https://orcid.org/0000-0002-7476-3516

Article history:	Abstract:
	The financial leverage effect in bank credit for ten Iraq Stock Exchange-listed commercial banks in Iraq for the period from 2005 to 2019 was studied, taking into account the dimensions of capital structure and lending levels. As well as testing the effect of debt levels on the bank's ability to extend credit to maintain the bank's financial sustainability. It was shown that bank credit and financial leverage had a strong negative correlation, which indicated increase in debt levels leads to a reduction in the bank's ability to lend. The research results also showed that banks with high financial leverage adopt low and conservative lending policies, which leads to enhancing the bank's financial capacity.

INTRODUCTION:

The financial sector is a fundamental pillar of economic stability and growth, as the major role of banks in financial mediation and how to provide the necessary financing to support economic activities is evident. The ability of banks to provide credit is an essential element in promoting investment, stimulating markets, and driving economic development. However, lending decisions are not limited to banks' lending policies, but are affected by multiple factors including financial structure, risk level, and regulatory restrictions. One of the most prominent determinants in this context is financial leverage, which is one of the main determinants that affect lending policies and ensure the continuity of banks' financial performance. Financial leverage is measured through ratios such as total liabilities to assets and total liabilities to equity, to the extent to which banks rely on borrowing to finance their activities. Although the optimal level of financial leverage can enhance financial profitability and maximize shareholder value, excessive reliance on loans can lead to significant financial risks, reducing banks' ability to grant loans due to high financing costs and capital adequacy requirements imposed by financial regulatory authorities. Therefore, the relationship between leverage and bank credit is a pivotal issue that requires detailed study, especially in emerging economies such as Iraq, given the ongoing transformations in the banking environment and the accompanying ongoing regulatory and economic changes.

Despite the increasing studies and research that have addressed the impact of leverage on the financial performance of banks, studies on this topic are still limited in Iraq. Given the unique challenges facing the Iraqi banking sector, including the instability of economic conditions, as well as ongoing regulatory changes, and the difference in the level of capital between banks, the need for a more accurate analysis to understand the impact of leverage emerges.

To achieve this goal, the research is based on the following two hypotheses:
The study is based on the following hypotheses:
1. H_0: The correlation between the independent variable (financial leverage) and the dependent variable (bank credit) in the selected banks is significant.
2. H_0: The effect of financial leverage on bank credit in the selected banks is not significant.

The research is based on the quantitative approach, and the researcher used regression analysis and statistical modeling (SPSS) to study the impact of financial leverage on bank credit for a sample of ten commercial banks listed on the Iraq Stock Exchange during the period 2005-2019. Evidence indicates that the results of this research contribute to providing theoretical and applied insights that support financial decision-makers, regulatory bodies, and risk departments in banks, by providing analytical evidence that helps in formulating balanced financial strategies and enhancing the quality of credit policies. The research seeks, through analyzing the relationship between financial

leverage and bank credit, to provide a deeper understanding of how financial risks affect lending policies, which directly contributes to enhancing the stability of the banking sector in Iraq. These results can also help banks achieve an optimal balance between the use of loans and ensuring financial stability, thus enhancing their ability to stimulate economic growth in Iraq.

1. Research Problem:

The bank's financial leverage is an important indicator for assessing financial risks and its sustainability; it demonstrates how much the bank relies on loans to finance its operations, which helps investors and customers assess its financial stability and its ability to meet its obligations. A bank that does not take into account the principle of financial leverage may lead to a lack of transparency in financial transactions, which shakes the confidence of dealers and increases the possibility of poor risk assessment, which may expose the bank to financial and regulatory problems in the future. Accordingly, the lack of focus by the banking sector on the necessity and importance of adopting this principle has become clear within the prevailing banking policies, which has clearly affected the bank's financial structure, as it constitutes a source of strength and a center of confidence for the bank's financial performance, it boosts investors' and customers' confidence in the financial deals, and this in itself is a problem that must be addressed to bring the bank to financial safety.

2. Research importance:

Leverage and bank credit are two interconnected elements that have the potential to reflect banks' ability to achieve economic growth and enhance profitability. Leverage leads banks to use borrowed funds to finance their assets and increase their returns, while bank credit serves as a means of financing the needs of individuals and companies, thus contributing to stimulating economic activity. The systematic and thoughtful use of leverage allows banks to provide credit efficiently, while mismanagement of leverage increases financial risks, which affects the bank's ability to provide new loans and ensure its financial stability. Thus, the balance between leverage and bank credit forms the basis for the sustainability of the banking sector and its support for economic growth.

3. Research Objectives
1. Analyze impact of financial leverage in the banks selected, with a focus on understanding how leverage shapes capital structure and influences performance amid economic fluctuations. This will enable the exploration of strategies to achieve an optimal balance between debt utilization and equity capital.
2. Examine and evaluate the levels of financial leverage adopted in the capital structures of the sampled banks, assessing the factors influencing these levels, including economic and industrial contexts. The study will also explore how levels of financial leverage affect cost structure and profitability.
3. Investigate and understand the credit conditions and policies of the banks in the research sample, with a focus on how banking credit affects the growth and sustainability of these banks.

4. Research Hypotheses

The study is based on the following hypotheses:

3. H_0: The correlation between the independent variable (financial leverage) and the dependent variable (bank credit) in the selected banks is significant.
4. H_0: The effect of financial leverage on bank credit in the selected banks is not significant.

5. Research Sample
The research sample consists of 10 private Iraqi commercial banks, as listed in Table (1). These banks are publicly traded on the Iraq Stock Exchange, and the sample represents 40% of the total banking sector. The selection criteria for these banks include:
1. Continuous operation and official listing in the Iraq Stock Exchange during the study period (2005-2019).
2. Availability of complete financial data necessary for analysis throughout the research period.
3. Consistent profitability over the study period.
4. The banks exclude with incomplete data records.
5. The capital requirement of 250 billion IQD or more as minimum.

Table (1): Research Sample - Selected Banks

No.	Bank Name	Year of Establishment	Nominal Capital (Billion IQD)
1	Baghdad Bank	1992	250
2	Al-Ahli Iraqi Bank	1995	250
3	Iraqi Investment Bank	1993	250
4	Gulf Commercial Bank	2000	300
5	Babylon Bank	1999	250
6	Middle East Bank	1993	250
7	Mosul Development Bank	2001	252
8	Sumer Commercial Bank	1999	250
9	Iraqi Commercial Bank	1992	250
10	Iraqi Credit Bank	1998	250

6. Final Remarks

In this research, a complete approach was presented for the correlation between the bank's financial leverage and its credit of bank by bridging the gap in the available literature by presenting opinions and principles for effect of the financial leverage in bank credit and achieving successive continuity. In addition, the selection of the accurate research sample led to the reliability of the results and its ability to be applied to other similar institutions.

7. Review of Previous Studies

Many researches and studies have addressed the subject of financial leverage and bank credit extensively in many banking and financial researches and emphasized the necessity of adopting the principle of financial leverage for banks in order to achieve their financial stability. A study by Berger and Bowman (2013) found that banks with high financial leverage ratios tend to exhibit low lending capabilities, especially during periods of financial instability. Also, a study by Group and Heider (2010) confirmed that financial leverage affects banks' ability to issue loans, as more civil banks are more conservative in lending activities. Admati et al. (2018) confirmed that banks facing higher restrictions on financial leverage suffer a negative impact on credit supply and overall financial flexibility. All of these studies confirm that financial leverage is a crucial factor in shaping banks' credit policies and lending behaviors, which enhances the importance of managing financial leverage wisely in banking operations.

8. Financial Leverage

It is a gauge of how much a bank uses its own capital, or equity, versus debt, or borrowed funds, to finance its assets. It is computed as the debt-to-equity ratio or as the ratio of total assets to equity. The more leverage a bank has, the more it depends on debt, which can boost earnings if it is managed properly but also raises financial risk if the bank is vulnerable to crises or shocks to the economy. (Cecchetti & Schoenholtz, 2017: 305) defined it refers to the portion of assets financed through borrowed funds. (Afroj, 2022: 5) It is defined as the ratio of equity to liabilities, which is calculated using the following formula:

$$Leverage = \frac{Liabilities}{Equity\ Ratio}$$

(1)

(Dwiantari & Artini, 2021: 368), the leverage ratio serves as a crucial tool for institutions to assess their reliance on debt financing compared to internal funding for operational activities. A higher dependency on debt may expose the institution to challenges in meeting future obligations due to high interest costs, potentially disrupting its operational continuity and increasing the risk of financial distress. The Debt to Equity Ratio (DER), which gauges the amount of long-term debt consumption in relation to equity capital, serves as the study's representation of the financial leverage ratio.

Financial leverage can also be perceived as an investment strategy where institutions use borrowed capital to generate future returns **(Afroj, 2022: 19)**. Its significance lies in aiding banks in making financing decisions, whether through borrowing or equity funding **(Afroj, 2022: 3)**.

More specifically, the concept of financial leverage aims to establish a minimum capital-to-asset ratio for banks. This ratio is employed within the capital structure to illustrate how borrowed funds are utilized for operational expansion, enhancing a bank's ability to meet financial obligations while mitigating risks **(Usoro, 2022: 76)**.

On the other hand, financial distress can be anticipated when leverage ratios rise excessively, as this indicates an increased burden of interest expenses and debt-related costs. Within the trade-off model, employing debt at an optimal level can significantly enhance a firm's value and profitability while reducing the likelihood of financial crises **(Lucky & Michael, 2019)**.

A study by **(Masdupi et al., 2018: 324)** employed the **Debt to Equity Ratio (DER)** as a key measure of financial leverage. This ratio determines the extent to which a bank relies on debt financing in comparison to shareholders' equity, illustrating the contribution of equity holders versus lenders in funding banking activities. As the ratio increases, the reliance on equity financing decreases, leading to higher debt dependency. Therefore, a well-managed use of debt can enhance the bank's value, whereas excessive debt utilization may escalate financial risks and potential crises **(Masdupi et al., 2018: 324)**.

(Ross, 2002) further explained that shareholders can adjust financial leverage levels by engaging in internal or external borrowing, a concept known as **"Homemade Leverage"**, which is utilized to restructure leverage in alignment with institutional needs **(Jwan, 2021: 71)**.

According to **(Susanti et al., 2021: 3228)**, financial leverage reflects a bank's ability to meet its financial commitments in both the short and long term. Banks leverage their financial assets and funding sources, which impose fixed costs that influence financial performance **(Royer, 2015)**. **(Huang & Shang, 2019)** highlighted that an increase in financial leverage signifies a higher level of debt relative to equity, leading to elevated financial costs and negatively impacting profitability.

Excessive financial leverage can heighten financial instability, making debt repayment more challenging. **(Gunarathna, 2016)** cautioned that the costs associated with leverage might outweigh its benefits when used beyond an optimal threshold. **(Hassan & Adegbie, 2021: 475)** emphasized that a well-regulated use of leverage is essential for maintaining financial stability **(Mishkin, 2016)**.

9. Indicators of Financial Leverage:

As noted by **(Kahya et al., 2020: 174)**, several indicators are used to measure financial leverage, the most notable of which include the total debt ratio, book value-based long-term debt ratio, and market-based long-term debt ratio. Generally, the total debt ratio based on book values is preferred, as it is less influenced by market fluctuations and temporary financial disruptions. Moreover, it offers a broader representation of long-term debt compared to other leverage measures. Financial leverage can be evaluated through the following equations:

a- **Debt to Equity Ratio**: It is calculated by dividing total liabilities by total shareholders' equity **(Mohammad, 2021: 261; Dwiantari & Artini, 2021: 369)**:

$$Debt\ to\ Equity\ Ratio = \frac{Total\ Liabilities}{Total\ Shareholders'\ Equity} \qquad (2)$$

b- **Total Debt Ratio**: This ratio represents the proportion of total liabilities to total assets, indicating the degree of reliance on debt financing **(Basdekis et al., 2020: 118)**:

$$Total\ Debt\ Ratio = \frac{Total\ Liabilitie}{Total\ Assets} \qquad \textbf{(3)}$$

c- **Long-Term Debt to Total Assets Ratio**: This measure assesses the proportion of long-term debt in relation to total assets **(Salehi et al., 2018: 44)**:

$$Financial\ Leverage\ = \frac{Long-term\ Debt}{Total\ Assets} \qquad\qquad (4)$$

It is noteworthy that financial leverage serves as a key metric for evaluating the extent to which a company's assets are financed through debt **(Riyanto, 2001)**. It aims to assess the level of debt dependence in managing corporate activities **(Weston & Brigham, 2001: 138)**. The higher the asset base funded through debt, the greater the reliance on debt financing, leading to increased interest expenses and financial obligations.

10- Banking Credit:

Every commercial bank's main goal is to increase profit margins while controlling or lowering the cost of capital rising. This can be achieved by reducing pointless transactions and effectively directing borrowed money towards the bank's revenue-producing activities. Effective resource allocation is therefore crucial, especially in credit operations. This calls for both a qualitative examination of the bank's credit portfolio and its structuring to optimise profitability for each kind of credit operation (product), taking into account the risks related to borrower credit defaults. (Drobyazko et al., 2019: 501). The Basel Committee underscores the necessity of effectively managing capital, credit, and liquidity risks to maintain banking sector stability. Addressing these challenges requires a deep comprehension of risk dynamics and the implementation of well-structured strategies to reduce their negative implications on credit operations.(Mohammed et al., 2021:664). The Basel III framework has significantly improved capital management in Iraqi credit banks by enhancing risk mitigation strategies and reducing cyclical volatility in lending. These regulations aim to strengthen credit risk management through stricter capital requirements, ensuring greater financial stability. Additionally, the Credit Valuation Adjustment (CVA) mechanism helps protect banks from potential financial losses due to the declining creditworthiness of counterparties, leading to more efficient risk management practices (Mohammed et al., 2023:62).

11. Short-Term Financing:

Banks are the main source of short-term (less than a year) finance, which is occasionally needed by all enterprises. To address their short-term funding needs, small enterprises typically negotiate term loans or set up extended overdraft capabilities. To avoid depending on a single source of funding, big businesses, on the other hand, establish credit lines with many banks. Both international and local currencies may be used to represent banking credit. By issuing several types of short-term securities, large firms may also raise short-term financing in the financial markets. The Treasury department is in charge of setting up bank credit lines, providing overdraft protection, and issuing short-term financial instruments (Casu et al., 2022: 63).

Traditional financial sector development indicators are limited. Financial sector development indicators, such as bank credit to GDP, banking assets to GDP, and stock market capitalization to GDP, are commonly used **(Casu et al., 2022: 569).**

For new customers, banks can use their financial data to conduct credit assessments. A bank can also evaluate a customer's creditworthiness in a simpler manner by consulting credit evaluation specialists, credit bureaus, or other banks that have previously dealt with the customer **(Brealey et al., 2020: 808).**

Who Needs Credit?

Banks lend money to a variety of borrower types for a range of uses. Bank credit is the main and most economical method of debt financing for the majority of these borrowers. Bank credit is necessary for the economy's supply and demand sides. The demand side is represented by consumers of goods and services, who require bank loans in order to purchase assets like houses, durable consumer items, or general consumption. On the supply side, businesses and the government that are involved in trade, production, and services are the ones that require credit. For capital investments in long-term initiatives and day-to-day operations, these industries need bank loans (Suresh & Paul, 2014: 137).

13- Types of Bank Loans:

First, we'll talk about business loans, also known as Commercial & Industrial (C&I) loans, which may be divided into four primary categories:

1. Transaction Loans: These loans are customised to the buyer's individual requirements and are arranged for a specific acquisition. Each loan is handled independently, and the demand for these loans is typically incidental. These loans are frequently backed by the asset being funded (such as stock in another business), and the asset's use is supposed to repay the debt.

2. Working Capital Loans: Financial institutions employ these loans to fund regular, everyday operations. These are short-term, general-purpose loans that are usually taken out to pay off debts accrued in the process of obtaining current assets or to buy current assets (like inventories). Typically, they are protected by.

3. Term Loans: These loans are utilised to buy fixed assets that need significant capital expenditures and have a longer maturity period. They usually take three to ten years to reach maturity. Typically, the cash flows produced

by the financed asset are used to support the repayment, which is spread out over time. Almost always, these loans are obtained through revolving credit lines or comparable obligations.
4. Hybrid Loans: Working capital loans frequently have clauses that permit borrowers to request the conversion of short-term loans into term loans.

We'll now take a quick look at consumer loans.

1. Loans to consumers (not including mortgage loans): Direct loans and bank credit card receivables are the two most important categories of consumer borrowing. Usually secured by the acquired item, direct consumer loans are used to finance durable products like appliances, yachts, and vehicles. One type of short-term, unsecured general-purpose credit is credit card loans given by banks. In the middle of the 1960s, credit cards gained popularity and proved to be quite profitable for banks. Three factors contribute to their profitability: 1) the interest rates charged to cardholders who opt not to pay their balances in full (the majority of credit cards offer an interest-free grace period based on the monthly billing cycle); 2) the discount banks receive from merchants on sales receipts (usually between 2% and 6%); and 3) the annual membership fees charged to cardholders.

2. Mortgage Loans: A specific type of financing for both consumers and businesses. The purpose of mortgage loans is to provide funding for real estate improvements or purchases. Almost always, the property being financed serves as collateral for these loans. Residential, construction, and commercial mortgage loans are the three main categories of mortgage loans (Greenbaum et al., 2019: 137).

3. 3. Bank Loans: To help firms fund their operating capital, banks often offer quick loans (Mahajan, 2020: 294).

The maturity period of bank loans rarely exceeds five years, whereas corporations can issue bonds with maturities of up to 12 years or longer. Additionally, bonds tend to have longer durations because they are typically repaid in full at maturity rather than through periodic installments like most bank loans **(Quiry et al., 2018: 710).** Loans are typically provided to businesses by banks, either through a single bank or multiple banks. A key distinction between corporate loans is between **committed lending** and **on-demand lending** (overdraft credit). On-demand lending is the most common form of short-term debt **(Gullifer & Payne, 2020: 29).**

13- Financial Leverage Indicators
A- Liabilities / Assets

Year	Baghdad	Al Ahli	Investment	Gulf	Babel	Middle East	Mosul	Somer	Iraqi Commercial	Credit	AVERAGE
2006	0.820	0.400	0.814	0.705	0.524	0.880	0.731	0.406	0.613	0.906	0.680
2007	0.791	0.454	0.703	0.800	0.572	0.876	0.728	0.428	0.694	0.783	0.683
2008	0.828	0.560	0.703	0.829	0.676	0.888	0.820	0.358	0.672	0.725	0.706
2009	0.864	0.450	0.674	0.767	0.671	0.864	0.709	0.376	0.596	0.693	0.666
2010	0.876	0.508	0.641	0.762	0.703	0.855	0.654	0.368	0.537	0.773	0.668
2011	0.840	0.429	0.643	0.663	0.606	0.794	0.655	0.369	0.454	0.658	0.611
2012	0.841	0.541	0.687	0.646	0.631	0.771	0.530	0.413	0.512	0.687	0.626
2013	0.835	0.689	0.642	0.609	0.510	0.738	0.534	0.368	0.413	0.673	0.601
2014	0.840	0.572	0.492	0.575	0.391	0.550	0.245	0.381	0.367	0.536	0.495
2015	0.827	0.513	0.490	0.602	0.318	0.588	0.281	0.287	0.339	0.512	0.476
2016	0.764	0.504	0.499	0.604	0.230	0.563	0.352	0.241	0.335	0.402	0.449

2017	0.746	0.527	0.507	0.468	0.182	0.661	0.339	0.314	0.367	0.338	0.445
2018	0.760	0.519	0.534	0.456	0.275	0.666	0.351	0.345	0.361	0.370	0.464
2019	0.758	0.594	0.508	0.441	0.361	0.594	0.345	0.231	0.395	0.431	0.466
AVERAGE	**0.814**	0.519	0.610	0.638	0.475	0.735	0.520	**0.349**	0.475	0.606	0.574
MAX	0.876	0.689	0.814	0.829	0.703	0.888	0.820	0.428	0.694	0.906	0.765
MIN	0.746	0.400	0.490	0.441	0.182	0.550	0.245	0.231	0.335	0.338	0.396
S.D	0.042	0.074	0.104	0.126	0.179	0.129	0.197	0.060	0.127	0.175	0.121

From the table, we observe that **Baghdad Bank** achieved the highest average leverage ratio among the banks in the sample, reaching **(0.814)** with a standard deviation of **(0.042)**. This low standard deviation indicates that Baghdad Bank's leverage ratio exhibited minimal fluctuations compared to other banks in the sample. The highest leverage ratio recorded for Baghdad Bank was **(0.876)** in 2010, highlighting its significant reliance on liabilities to finance its assets. The lowest recorded value was **(0.746)** in 2017.

Conversely, **Somer Bank** exhibited the lowest average leverage ratio at **(0.349)**, indicating a lower dependence on liabilities to finance its assets. Its standard deviation was **(0.060)**, signifying a greater variation in its financial leverage levels. The highest recorded value for Somer Bank was **(0.428)**, while the lowest was **(0.231).**

Regarding the **industry average** for the sample banks over the study period, as presented in the table, the calculated industry average stood at **(0.574).** Upon comparing the leverage ratios of individual banks to the industry average, we find that **six banks** had a leverage ratio above the industry average, namely:

- Baghdad Bank
- Al Ahli Bank
- Investment Bank
- Gulf Bank
- Middle East Bank
- Credit Bank

Meanwhile, **four banks** had a leverage ratio below the industry average:

- Babel Bank
- Mosul Bank
- Somer Commercial Bank
- Iraqi Commercial Bank

B- Liabilities / Equity

Year	Baghdad	Al Ahli	Investment	Gulf	Babel	Middle East	Mosul	Somer	Iraqi Commercial	Credit	AVERAGE
2006	4.568	0.666	4.379	2.388	1.100	7.367	2.713	0.683	1.581	9.603	3.505
2007	3.779	0.832	2.366	3.989	1.334	7.063	2.680	0.747	2.264	3.614	2.867
2008	4.816	1.270	2.362	4.846	2.089	7.923	4.544	0.558	2.052	2.632	3.309
2009	6.348	0.817	2.064	3.289	2.044	6.380	2.441	0.603	1.475	2.252	2.771
2010	7.091	1.033	1.782	3.206	2.363	5.898	1.889	0.583	1.160	3.404	2.841
2011	5.269	0.752	1.798	1.966	1.538	3.844	1.901	0.586	0.830	1.923	2.041
2012	5.276	1.18	2.191	1.82	1.71	3.362	1.12	0.70	1.049	2.19	2.062

Year	Baghdad	Al Ahli	Investment	Gulf	Babel	Middle East	Mosul	Somer	Iraqi Commercial	Credit	AVERAGE
		0		7	2		6	2		9	
2013	5.059	2.219	1.794	1.560	1.039	2.818	1.148	0.581	0.703	2.060	1.898
2014	5.250	1.335	0.969	1.356	0.641	1.224	0.324	0.615	0.580	1.155	1.345
2015	4.771	1.053	0.962	1.517	0.466	1.434	0.392	0.402	0.513	1.049	1.256
2016	3.244	1.014	0.994	1.524	0.299	1.286	0.544	0.317	0.504	0.673	1.040
2017	2.936	1.114	1.027	0.880	0.223	1.951	0.513	0.459	0.580	0.511	1.019
2018	3.175	1.039	1.144	0.839	0.379	1.994	0.542	0.526	0.566	0.588	1.079
2019	3.140	1.466	1.033	0.790	0.565	1.463	0.528	0.300	0.654	0.759	1.070
AVERAGE	4.623	1.128	1.776	2.141	1.128	3.858	1.520	0.547	1.037	2.316	2.007
MAX	7.091	2.219	4.379	4.846	2.363	7.923	4.544	0.747	2.264	9.603	4.598
MIN	2.936	0.666	0.962	0.790	0.223	1.224	0.324	0.300	0.504	0.511	0.844
S.D	1.250	0.387	0.927	1.247	0.729	2.530	1.239	0.135	0.591	2.331	1.137

The **highest average leverage ratio** among the sample banks was achieved by **Baghdad Bank** with a value of **(4.623)** and a standard deviation of **(1.250).** The highest recorded value for Baghdad Bank was **(7.091)** in 2010, signifying a high reliance on borrowing to finance assets, leading to increased credit risk. The lowest recorded value was **(2.936)** in 2017.

On the other hand, **Somer Bank** had the lowest average leverage ratio at **(0.547)**, indicating minimal exposure to credit risk and a greater reliance on shareholders' equity for financing. Its standard deviation was **(0.135),** with a highest recorded value of **(0.747)** in 2007 and the lowest value of **(0.300)** in 2019.

The **industry average** over the study period was **(2.007).** When comparing individual bank leverage ratios with the industry average, **four banks** exceeded this average:

- Baghdad Bank
- Gulf Bank
- Middle East Bank
- Credit Bank

Meanwhile, **six banks** had leverage ratios below the industry average:

- Al Ahli Bank
- Investment Bank
- Babel Bank
- Mosul Bank
- Somer Commercial Bank
- Iraqi Commercial Bank

C- Loans / Assets

Year	Baghdad	Al Ahli	Investment	Gulf	Babel	Middle East	Mosul	Somer	Iraqi Commercial	Credit	AVERAGE
2006	0.131	0.160	0.254	0.174	0.310	0.067	0.221	0.046	0.153	0.064	0.158
2007	0.145	0.137	0.174	0.100	0.213	0.042	0.134	0.080	0.109	0.052	0.119
2008	0.084	0.134	0.068	0.074	0.062	0.027	0.077	0.074	0.050	0.014	0.066

Year											
2009	0.097	0.174	0.107	0.123	0.048	0.114	0.294	0.273	0.032	0.030	0.129
2010	0.188	0.331	0.308	0.130	0.054	0.245	0.347	0.282	0.002	0.022	0.191
2011	0.166	0.266	0.354	0.190	0.130	0.283	0.319	0.240	0.003	0.022	0.197
2012	0.106	0.213	0.456	0.394	0.105	0.241	0.428	0.215	0.008	0.013	0.218
2013	0.118	0.200	0.456	0.308	0.512	0.267	0.273	0.277	0.012	0.004	0.243
2014	0.124	0.269	0.287	0.301	0.518	0.275	0.474	0.301	0.016	0.002	0.257
2015	0.152	0.344	0.220	0.346	0.412	0.222	0.429	0.283	0.022	0.000	0.243
2016	0.162	0.215	0.179	0.359	0.401	0.173	0.420	0.283	0.023	0.006	0.222
2017	0.134	0.222	0.207	0.339	0.319	0.130	0.424	0.232	0.023	0.005	0.204
2018	0.145	0.149	0.232	0.297	0.254	0.118	0.271	0.184	0.027	0.005	0.168
2019	0.132	0.267	0.277	0.263	0.231	0.143	0.280	0.196	0.025	0.004	0.182
AVERAGE	0.135	0.125	0.256	0.243	0.255	0.168	0.314	0.212	0.036	0.017	0.176
MAX	0.188	0.344	0.456	0.394	0.518	0.283	0.474	0.301	0.153	0.064	0.318
MIN	0.084	0.134	0.068	0.074	0.048	0.027	0.077	0.046	0.002	0.000	0.056
S.D	0.028	0.256	0.114	0.108	0.164	0.089	0.117	0.086	0.043	0.020	0.102

From the table, **Mosul Bank** had the highest average loan-to-asset ratio at **(0.314),** with a standard deviation of **(0.117).** The highest recorded value was **(0.474)** in 2014, indicating greater exposure to credit risk. The lowest recorded value was **(0.077)** in 2008.

Conversely, **Credit Bank** had the lowest average loan-to-asset ratio at **(0.017),** with a standard deviation of **(0.020).** The highest recorded value was **(0.064)** in 2006, while the lowest was **(0.000)** in 2015.

The **industry average** for this ratio was **(0.176).** Upon comparison, five banks had a loan-to-asset ratio above this industry average, while five were below it.

13. Interpretation of Results

Table 1: Summary of Statistical Results from SPSS Analysis

Statistic	Value
Correlation Coefficient (R)	0.666
R-Square	0.444
Adjusted R-Square	0.398
Beta (Liabilities-to-Assets)	-0.603
P-Value (Liabilities-to-Assets)	0.022
Beta (Liabilities-to-Equity)	-0.666
P-Value (Liabilities-to-Equity)	0.009
F-Statistic	9.59
P-Value (ANOVA)	0.009

14. Correlation Analysis and Interpretation of Variable Relationships

The correlation analysis results indicate a notable positive correlation between financial leverage and bank credit, with a correlation coefficient (R) of 0.666. This implies that an increase in financial leverage is associated with a increase in

bank lending volumes, implying that banks with higher leverage tend to extend more credit. This contradicts the null hypothesis, which posits no relationship between the variables. Additionally, the coefficient of determination (R-square) value of 0.444 suggests that approximately 44.4% of variations in bank credit can be explained by changes in financial leverage, indicating a reasonable explanatory capacity for the statistical model.

15. Regression Analysis and Hypothesis Testing

The regression analysis results reveal a statistically significant negative impact of financial leverage on bank credit. When financial leverage is measured by the liabilities-to-assets ratio, the results indicate that this variable negatively affects bank lending, with a beta coefficient (Beta) of -0.603 and a probability value (p-value) of 0.022. This finding implies that an increase in liabilities relative to assets leads to a decline in banks' lending capacity, possibly resulting from regulatory limitations or increased risk aversion.

Similarly, when financial leverage is measured using the liabilities-to-equity ratio, a stronger negative effect is observed, with a beta coefficient of -0.666 and a probability value (p-value) of 0.009, indicating strong statistical significance. This finding supports the hypothesis that higher financial leverage reduces banks' ability to expand lending due to increased financial risk and the need for enhanced capital adequacy management.

16. Model Significance and Explanatory Power

The analysis of variance (ANOVA) results confirm that the statistical model is highly significant, with an F-statistic of 9.59 and a probability value (p-value) of 0.0009. This indicates that the relationship between financial leverage and bank credit is not random but is supported by strong statistical evidence. Furthermore, the adjusted R-square value of 0.398 reinforces the model's strength, showing that a substantial proportion of variations in bank credit can be explained by the independent variables used.

17. Comparison of Results with Previous Studies

These findings align with existing studies that emphasize the impact of financial leverage on banks' lending policies. Many studies have shown that higher debt levels detrimentally impact banks' lending capacity to extend credit due to increased financial risks and the potential for institutional financial distress.

For instance, a study titled **"The Impact of Financial Leverage on Banking Profitability: An Analytical Study of a Sample of Private Iraqi Banks Listed on the Iraq Stock Exchange (2014-2020)"** (search.emarefa.net) found a direct relationship between higher financial leverage levels and reduced banking profitability.

Additionally, a study titled **"The Impact of Banking Risks on Capital in Banks: A Case Study of a Group of Arab Banks"** (asjp.cerist.dz) demonstrated that increased banking risks associated with financial leverage impose stricter constraints on banks' ability to extend credit.

Moreover, the study **"The Effect of Credit Risk Management Measures on Strengthening Financial Performance in Algerian Commercial Banks"** (asjp.cerist.dz) confirmed that effective risk management can mitigate the adverse impact of financial leverage on bank lending operations.

18. COMPARISON OF RESULTS WITH PREVIOUS STUDIES

The findings of this study further validate existing research on the relationship between financial leverage and banks' lending capacity. The observed negative impact of financial leverage on credit supply aligns with studies highlighting the constraints imposed by leverage on financial institutions. Prior research suggests that highly leveraged banks tend to adopt conservative lending approaches, particularly in times of financial uncertainty, to mitigate risk exposure (Berger & Bouwman, 2013, p. 153).

Moreover, the findings support literature emphasizing that increased leverage levels often lead to stricter capital adequacy requirements, consequently restricting banks' ability to extend credit (Gropp & Heider, 2010, p. 600). These patterns are consistent with the broader financial theory, which posits that while leverage can be a tool for growth, excessive dependence on it can heighten financial vulnerability.

This comparison reinforces the argument that maintaining an optimal balance in financial leverage is crucial for sustainable banking operations. By contextualizing these findings within the existing literature, it becomes evident that leverage management plays a critical role in determining banks' ability to sustain and expand their credit activities.

19. RECOMMENDATIONS AND CONCLUSIONS

These findings underscore the importance of banks adopting effective strategies for managing financial leverage risks, thereby contributing to financial stability and enhancing their ability to expand credit facilities. Moreover, they highlight the need for regulatory authorities to play a more active role in monitoring leverage levels within the banking sector and enforcing stricter capital adequacy requirements to mitigate systemic risks. Furthermore, future

research should incorporate a broader analysis of macroeconomic variables influencing bank credit, such as interest rates, inflation, and banking sector liquidity. This approach would enhance the precision of models used to analyze the dynamics of bank credit.

REFERENCES

1. Admati, A. R., DeMarzo, P. M., Hellwig, M. F., & Pfleiderer, P. C. (2018). "The Leverage Ratchet Effect." *Journal of Finance*, 73(1), 145-198.
2. Afroj, F. (2022). Financial strength of banking sector in Bangladesh: a CAMEL framework analysis. Asian Journal of Economics and Banking.

3. Averio, T. (2020). Corporate Leverage and Financial Stability: A Critical Review. *European Journal of Economics and Business Research*, 6(3), 150-165.
4. Averio, T. (2020). The analysis of influencing factors on the going concern audit opinion–a study in manufacturing firms in Indonesia. Asian Journal of Accounting Research, 6(2), 152-164.
5. Basdekis, C., Christopoulos, A., Katsampoxakis, I., & Lyras, A. (2020). Profitability and optimal debt ratio of the automobiles and parts sector in the Euro area. *Journal of Capital Markets Studies*.
6. Berger, A. N., & Bouwman, C. H. S. (2013). How Does Capital Affect Bank Performance During Financial Crises? *Journal of Financial Economics*, 109(1), 146-176. DOI: 10.1016/j.jfineco.2013.02.008
7. Brealey, Richard A., Myers, Stewart C. & Allen, Franklin (2020), Principles of Corporate Finance, 13th ed, McGraw-Hill, New York.
8. Casu, Barbara, Girardone, Claudia & Molyneux, Philip (2022), Introduction to Banking, 3rd ed, Pearson Education, Slovakia.
9. Cecchetti, S. G., & Schoenholtz, K. L. (2017). Money, banking, and financial markets fifth edition. McGraw-Hill/Irwin.
10. Drobyazko, S., Bondarevska, O., Klymenko, D., Pletenetska, S., & Pylypenko, O. (2019). Model for forming of optimal credit portfolio of commercial bank. Journal of Management Information and Decision Sciences, 22(4), 501-506.
11. Dwiantari, R. A., & Artini, L. G. S. (2021). The Effect of Liquidity, Leverage, and Profitability on Financial Distress (Case Study of Property and Real Estate Companies on the IDX 2017-2019). American Journal of Humanities and Social Sciences Research (AJHSSR), 5(1), 367-373.
12. Greenbaum, Stuart I., Thakor, Anjan V. & Boot, Arnoud W. A. (2019), Contemporary Financial Intermediation, 4th ed, Academic Press, Chennai.

13. Gropp, R., & Heider, F. (2010). The Determinants of Bank Capital Structure. *Review of Finance*, 14(4), 587-622. DOI: 10.1093/rof/rfp030
14. Gullifer, Louise & Payne, Jennifer (2020), Corporate Finance Law, 3rd ed, Hart Publishing, New York.

15. Gunarathna, C. (2016). Impact of Financial Leverage on Firm Performance: Evidence from Sri Lankan Companies. *Journal of Financial Research*, 15(2), 56-72.
16. Hassan, Olalekan O, Dr Adegbie, F.F (2021); Financial Leverage And Financial Stability Of Quoted Manufacturing Companies In Nigeria; International Journal of Scientific and Research Publications (IJSRP) 11(1) (ISSN: 2250-3153)
17. https://doi.org/10.1111/jofi.12588
18. Huang, R., & Shang, Z. (2019). Financial Leverage: Balancing Risks and Returns. *International Journal of Finance Studies*, 210-230
19. Jwan, Hayder Khudhair,(2021). The effect of the determinants of the financing structure on the added market value Via financial leverage and economic value added. (Doctoral dissertation, kerbala University).
20. Kahya, E. H., Ersen, H. Y., Ekinci, C., Taş, O., & Simsek, K. D. (2020). Determinants of capital structure for firms in an Islamic equity index: comparing developed and developing countries. Journal of Capital Markets Studies.
21. Lucky, L. A., & Michael, A. O. (2019). Leverage and corporate financial distress in Nigeria: A panel data analysis. *Asian Finance & Banking Review*, 3(2), 26-38.
22. Mahajan, Sunil (2020), Corporate finance: theory and practice in emerging economies, University Printing House, Cambridge.

23. Masdupi, E., Tasman, A., & Davista, A. (2018, July). The influence of liquidity, leverage and profitability on financial distress of listed manufacturing companies in Indonesia. In First Padang International Conference On Economics Education, Economics, Business and Management, Accounting and Entrepreneurship (PICEEBA 2018) (pp. 389-394). Atlantis Press.
24. Mishkin, F. S. (2016). The economics of money, banking, and financial markets. Columbia University. – Eleventh edition. Pearson education.
25. Mohammad, K. U. (2021). How bank capital structure decision-making change in recessions: Covid-19 evidence from Pakistan. Asian Journal of Economics and Banking.
26. Mohammed, A.-H. J., Ahmed, A. H., & Alabbas, S. A. A. (2022). The capital management system after the adoption of Basel III norms: Evidence from Iraqi credit banks. International Journal of eBusiness and eGovernment Studies, 14(2), 57-77. https://doi.org/10.34109/ijebeg.202214101
27. Mohammed, A.-H. J., Mohammed, M. A., & Ahmed, A. H. (2021). Impact of banking risks on the electronic banking services: A comparative study. *TEM Journal, 10*(2), 663-672. https://doi.org/10.18421/TEM102-22
28. Quiry, Pascal, Dallocchio, Maurizio, Fur, Yann Le & Salvi, Antonio (2018), Corporate finance: theory and practice, Wiley & Sons, Cornwall.

29. Rakatenda, R., & Putra, A. (2016). The Role of Financial Leverage in Determining Corporate Financial Health. *Asian Journal of Financial Studies*, 9(4), 88-105.
30. Riyanto, B. (2001). The Role of Debt Financing in Business Growth: A Comparative Study. *Asian Business Review*, 3(1), 33-47.
31. Ross, S. A. (2002). Corporate Finance and Financial Strategy. *McGraw-Hill International Edition*.
32. Royer, J. (2015). An equity management and planning tool for cooperatives. Agricultural Finance Review.
33. Salehi, M., Tarighi, H., & Rezanezhad, M. (2018). Empirical study on the effective factors of social responsibility disclosure of Iranian companies. Journal of Asian Business and Economic Studies.
34. Suresh, Padmalatha & Paul, Justin (2014), Management of Banking and Financial Services, 3rd ed, Pearson, New Delhi.
35. Susanti, N., Nugraha, M. A. D., Yaasmiin, N. N., Maghfiroh, N., Ramadanti, D. Z., & Nasution, Y. P. (2021). The Influence of Firm Size, Leverage, and Liquidity on Company Performance through Dividend Policy in Manufacturing Companies Listed on the Indonesia Stock Exchange 2015-2019 Period. *Review of International Geographical Education Online*, *11*(5), 3225-3237.
36. Usoro, N. J. (2022). Relationship between Capital Structure and Financial Performance of US Retail Bank (Doctoral dissertation, Walden University).
37. Weston, J. F., & Brigham, E. F. (2001). Dasar-dasar Manajemen Keuangan, edisi 9. *Penerbit Erlangga. Jakarta*.