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Measuring the Impact of Financial Liberalization at Turnover Rates on Commercial Banks' Profitability

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Abstract

The study aimed to measure the long-term impact of financial liberalization at turnover rates at banks' profitability levels of local private commercial banks listed on the Iraqi stock exchange, and to achieve this, the study relied on unbalanced longitudinal data of 22 banks during the period (2009-2020) with a total of 236 annual observations. The study used four rates to express turnover rates and they are as follows: Asset turnover, creditors, debtors, and working capital. While using the rate of return on assets (ROA) to express the level of profitability. A Positive impact of asset turnover was found and Working capital on return on assets by using one-way fixed effects method and Dynamic panel data method. While creditors' turnover relationship to profitability was non-linear, taking the form of a U. In other words, the effect of creditors' turnover is negative on profitability when creditors' turnover rates are low. However, this effect turns positive at high creditor turnover rates. On the other hand, debtors' turnover had no significant effect on profitability. The results also confirmed that these relationships are consistent and strong against different assessment methodologies. These results thus give support to bank management and policymakers to take into account its strategic plans and directions to achieve a higher goal of profitability.

Keywords: *financial liberalization, turnover rates, profitability, Iraqi banks, fixed effects.*

1 Introduction

Analysts or investors often use the available financial information from a company to calculate financial ratios including the company's cash flow, leverage, and Activity and profitability as a basis point in investment decision, although these ratios are the oldest and most basic scientific tools in evaluating and planning companies' performance. Yet it still retains its classic and essential strength as models or as another supporting analysis of financial and planning analysis and interpreting the changes in stock prices and making economic decisions; to evaluate the performance through which many financial and accounting models are developed. (Arkan, 2016).

Activity ratios (turnover rates) are defined as measuring an enterprise's efficiency in using its resources. These ratios are divided into a set of ratios, each of them having a negative or positive impact on the company's performance. Thus, influencing its profitability. Stock turnover is an important indicator of the effectiveness of the project's inventory control methods as any decrease or increase in this percentage will affect the current assets and thus the total assets. The higher this percentage, the better it works for the company to achieve big profits by using a lower profit margin than similar companies

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which has lower stock turnover rate. Creditors' turnover is a short-term liquidity measure which is used to assess how quickly a company can meet and pay its obligations to creditors, therefore it is a measure of the enterprise's efficient management in meeting obligations and paying suppliers. The debt turnover ratio is used to judge the efficiency of credit management in the economic unit on debt collection. The higher the rate, the better the management's performance in collecting its debts and the success of its credit policy. Asset turnover indicates the company's ability to use available assets and its ability to generate sales through the use of the company's total assets (Cohn et al., 2014). Working capital turnover measures companies' ability to use available public capital, thus, these ratios are important for analyzing companies' performance including profitability which is considered as the company's ability to generate a profit and investment return Which is a vital concern for shareholders; As they derive revenue in the form of profits (Warrad, 2013), Financial liberalization at turnover rates is some kind of information that some decision makers may be wondering about the possibility of making use of in achieving their future benefit.

Based on the foregoing, the study problem can be formulated with the following main question: “Is there and impact of financial liberalization at turnover rates on the profitability of Iraq's commercial service companies?” Based on the importance of analyzing financial ratios in general, therefore this study will investigate the impact of financial liberalization with turnover rates represented by its four dimensions (asset turnover, creditor turnover, debtor turnover, working capital turnover) on profitability in Iraqi commercial banks (expressed as return on assets).

2 Previous Studies:

Previous studies are important and a key pillar in scientific research because it provides a basic database that can be used as a guide in how to apply theoretical rules as well as experimental and field manual methods that Support the scientific side of the study, Previous studies on the subject of the impact of financial liberalization at turnover rates on profitability which included all rotation rate variables is almost a few in Iraq because most studies have touched on one variable, As these studies were tabulated each one and what are their objectives and the most important conclusions of those studies as in the following table (1):

Table 1: Summary of previous studies

Study	Target	Sample Study	Period	Methodology	Result
Alexander & Henky (2017)	Measuring the impact of fixed asset turnover on profit management	103 non-financial companies listed on Indonesia's stock exchange	2015-2013	Pooled OLS	There is a positive impact of fixed asset turnover on profit management
Warrad & Al Omari (2015)	Researching the effect of turnover ratios on the performance of the service sector	8 Service Sectors Listed in Amman Stock Exchange	2012-2009	ANOVA	There is no impact of turnover rates on return on assets or return on equity
Warrad (2013)	Measuring the impact of working capital turnover on the profitability of Jordanian industries	11 chemical companies listed on the Amman Stock Exchange	2011-2009	ANOVA	There is a negative impact of working capital turnover on profitability
Mwaura (2017)	Researching the effect of inventory turnover on performance	43 Retail, Medium and Large Supermarket in	2012-2016	Pooled OLS	There is a positive impact of stock turnover on financial

		Kenya			performance
Rahaman et al., (2018)	Researching the effect of working capital management on profitability	Only 5 pharmaceutical companies out of 28 companies listed on the Dubai Stock Exchange.	2016-2012	Pooled OLS	There is a positive impact of working capital management on the value of the company
Radi, 2009	Researching the effect of inventory turnover on net profitability.	36 Bangladesh Public and Private Industrial Companies	2002-1993	Pooled OLS	There is a negative relationship between inventory turnover and corporate profitability
Sulaiman, et al. (2012)	Researching the impact of financial liberalization on economic growth	Nigeria	2009-1987	Johansen co-integration	Financial liberalization has a stimulating effect on growth in Nigeria
Amgad Hassan (2020)	Measuring the impact of the ratios extracted from the statement of cash flows on financial performance indicators	42 contracting companies listed on the Egyptian Stock Exchange.	2019-2015	SEM using Maximum Likelihood	There is a direct effect of the ratio of net cash flows from operating activity for each ordinary share, as opposed to the reverse effect of the ratio of net cash flows to total assets on the rate of return on investment
Mohamed Fakhry (2020)	Researching the effect of debts on profitability	Three industrial companies listed on the Oman Stock Exchange	2019-2010	Pooled OLS	There is a positive impact of indices of indebtedness on profitability.

By reviewing the previous table, the most important feature of this study is that it is an experimental type. And it relied on real-time data for commercial service companies represented by Iraqi domestic commercial banks licensed by the Central Bank of Iraq which gives it high credibility. Based on previous studies, we can derive the study hypotheses as follows:

H1: There is a positive impact of asset turnover on the rate of return on assets in Iraqi banks.

H2: There is a positive impact of debtors' turnover on the rate of return on assets in Iraqi banks.

H3: There is a positive effect of the creditors' turnover rate on the rate of return on assets in Iraqi banks.

H4: There is a positive effect of the working capital turnover rate on the rate of return on assets in Iraqi banks.

3 Theoretical Background:

3.1 Financial Liberalization:

Financial and banking liberalization is an inevitable consequence of global transformations which was based on the call to remove obstacles of trade requirements whether in goods or in finance. Developing finance and banking by removing restrictions and barriers that could limit the flow of internal and external funds to conduct investment business operations (Fadila, 2016). Financial liberalization is defined as based on two basic things: i) giving the markets absolute effectiveness in the process of ensuring the distribution and allocation of financial resources and determining currency rates according to the forces of supply and demand forces, ii) Eliminating the restrictions and controls imposed on the movement of short and long capitals across national borders. (Abdul Kader, 2016) sees that financial liberalization is a series of actions that develop financial markets and rely on an indirect monetary control system.

Financial liberalization opens the banking field to foreign banks which is the reason for introducing a variety of new financial instruments, the entry of foreign banks increases competition and helps improve the quality and efficiency of local financial services- Financial liberalization procedures accompanied by broad privatization programs allow for an environment that encourages private sector activity thus attracting large inflows of capital and reducing the phenomenon of national capital outflows.

The size of the gains expected from financial liberalization also depends on the country's success in achieving macroeconomic stability and the depth of liberalization actions. As well as the nature and patterns of foreign capital flows, these gains are; i) Improvement of monetary policies. Monetary policies played an important role in guiding bank credit, collecting savings, and increasing the growth rate by adopting monetary policies and measures that contribute to stimulating production and investment. shortages: the cost of capital; financial liberalization facilitates the flow of capital from countries with surplus capital to countries with capital shortages; it is no secret that facilitating capital flows in these ways reduces the cost of investment through lower interest rates and capital costs for countries with deficits or capital shortages. iii) Improving the efficiency of the financial sector; financial liberalization reduces the division of domestic financial markets and increasing the access of local institutions to international sources of financing. iv) rising real interest rates; International Monetary Fund experts believe that financial liberalization will lead to nominal interest rates that are higher than the rate of inflation. This will encourage money owners to deposit their money into banks for interest and increase local savings. v) Reduce the outflow of national funds; financial liberalization procedures accompanied by privatization procedures create an encouraging environment for private financial sector activity. This will lead to large capital flows owned by residents abroad which means limiting the apparent flight of capital, Strong domestic branches give foreign banks a sense of security and investors' confidence in the local economy.

Despite all previous advantages of the financial liberalization policy, it has another dark side that carries many risks; i) Systemic hazard; occurring when a public authority or a group of financial institutions is unable to declare bankruptcy to other bodies, ii) risks of easy transmission of the crisis; One of the negative aspects of financial liberalization is the rapid transition of the crisis between financial institutions as they occur, iii) money laundering risks; Globalization of telecommunications, financial liberalization, diversity of financial instruments and ATM networks is a telecommuting technique as well as the use of electronic money and electronic and mobile banks. They all make it difficult to track down the source of the money. They became secret and encrypted numbers. They can go through a number of actions before they enter a country's economic role; all of these factors have helped to expand the illegal economic activities.

3.2 Turnover Rates:

1) Asset Turnover:

Asset turnover is an important financial measure that used to measure the ability of companies to generate sales of assets through comparing net sales to average total assets, The higher the turnover of assets, the more efficient the company is to generate income from assets. It is measured by the following formula:

Asset Turnover = Sales/Total Assets

When examining the turnover of assets for an analytical index to evaluate the asset's ability and effectiveness in increasing sales volume, it is necessary to follow up on the volume of investment in assets in terms of its distribution between investment in fixed assets and investment in current assets , i) Fixed assets turnover rate ; The importance of this indicator lies in its ability to manage the efficiency and effectiveness of its performance in the exploitation and use of fixed assets to achieve sales. Fixed asset turnover is calculated: (fixed asset turnover = sales/fixed asset). The higher the fixed assets turnover ratio measured by the comparison criterion used in the analysis, the more efficient management through effective use of fixed assets in achieving sales. ii) Turnover of current assets; this rate measures the Organization's efficient use of current assets in sales generation, this rate is calculated according to the following formula: (current asset turnover = sales/current asset). This rate reflects management's efficiency in exploiting current assets for sales, confirming that the more turnovers, the more productive one dinar is for an investor in assets traded for sales (El-Hindy, 2011).

2) Creditors' turnover (creditors):

Credits are a major source of short-term financing for companies provided that payment is delayed for as long as possible without prejudice to their credit rating. It is calculated according to the following formula:

Creditor turnover = forward purchases/creditor accounts

3) Debtors Turnover Ratio (Accounts Receivable):

It is an indicator of the appropriateness of investing in debtors, and it measures the number of times the receivables are collected during the year, the high turnover of debtors indicates the efficient conversion of debtor accounts into cash, it also means a high credit policy. It is calculated according to the following formula:

Debtor turnover = net sales/debtor accounts

4) Working capital turnover rate:

Working capital is defined as a set of management decisions regarding the level of investment in each component of a traded asset, and how to finance this investment in order to maximize the value of the company by achieving a balance between the company's liquidity and profitability (Kasozi, 2017). Capital management is a financial management function and is of great importance to companies regardless of their activity or size. Its importance is derived from its ability to develop the performance of companies depending on how working capital is managed and used efficiently and effectively in the daily operations of the company, which helps it in continuity and competition (Raheman, et al., 2018).

(El Barzangy, 2015) sees that the importance of working capital is: to Identify the funds invested in the assets in circulation in aggregate and thus compare them to the total liabilities in circulation in order to determine the company's ability to pay its short-term liabilities to others. And to identify the relative weight of the amounts invested in current assets in relation to total assets, and then analyze them and interpret them to analyze investment processes and balance their different components and liquidity. Liquidity

refers to the company's cash position and its ability to pay its obligations when they fall due.

Working capital is divided into three types; i) Permanent working capital: Known as fixed working capital, it does not change with the change in the size or activity of the company but depends on the nature of the activity. ii) Temporary working capital: Known as variable working capital, it changes as time changes and is affected by the increase in the size and activity of the company, the company must retain it for certain seasonal or emergency needs. iii) Semi-variable capital: is the level of working capital sufficient for a certain level of activity, that is, it does not change within this level, but if the activity increases, it increases accordingly)Paramasivan & Subramanian, 2012).

There are two main methods of measuring working capital: Net working capital: defined as the difference between current assets and current liabilities, When the value of the current assets exceeds the value of the current liabilities, the net working capital is positive, and if the value of the current liabilities is greater, the net working capital is negative and can be calculated according to the following formula (Graham et al., 2008):

Net working capital = current assets - current liabilities

Working capital ratio: The working capital ratio is used to measure a company's liquidity and is measured according to the following formula (Richard et al, 2018):

Working capital ratio = current assets/current liabilities

Finally, working capital objectives are to; i) Maximize the company's value: It is the main objective of financial management, and this means that the company chooses to keep working capital for the same reason that it keeps other assets that help to maximize the value of inventory, and should increase the value of the company such as investing funds, collecting debit accounts and reducing short-term borrowing (Segal, 2011). ii) Maintain sufficient liquidity: Maintaining adequate liquidity is one of the companies' priorities in paying obligations on maturity dates, maintaining appropriate levels of liquidity is therefore one of the most important objectives of working capital management (Robert, 2013). iii) Reduce risk: Companies must guarantee their short-term liabilities and not exceed their current assets, as this may expose the company to the risk of bankruptcy, comparing assets, liabilities and current accounts is the responsibility of working capital management. Which aims to reduce the risk of inability to pay the obligations arising from this (Iman, et al., 2014).

3.3 Profitability:

Profitability indicates a company's ability to use its resources to generate revenue beyond its expenses. Thus, it represents the company's ability to derive profits from its operations, it is a fundamental objective that companies seek to achieve because it is a pillar for the survival and continuity of companies. And it is a goal that investors aspire to, It is also an indicator that creditors are interested in when dealing with the company, The profitability ratios measure the efficiency of corporate management in making a profit on sales, assets and owners' rights, Profitability is an important indicator for management, investors, creditors and other stakeholders, so that management can verify the success of its various policies (Zawaira & Mutenheri, 2014).

Profitability can be defined as a relationship between a company's potential profits and the investments that contributed to those profits. Profitability is measured either through the relationship between profits and sales, or through the relationship between profits and investments that contributed to them (Tulsian, 2015).

Profitability rates indicate the ability of the company to earn profits and is considered an indicator of its growth that is why there is a lot of interest in profitability ratios, because it indicates the ability of the company to meet its obligations (Sagner, 2014). In general, profitability ratios are financial measures used to assess the ability of the company to

generate profits compared with its costs incurred within a certain period of time. It also indicates that the company is doing well, the most common profitability ratio can be clarified, and among the most popular profitability ratios is the return on assets, equity, stock, and invested capital (Bodie et al., 2018).

In this research, the main focus will be on the ratio of return on assets (ROA); it is the best ratio for comparing corporate profitability across industries and indicates the total profitability of the company. This ratio has been used in most studies to measure corporate profitability and the effectiveness of the company's assets in achieving benefits, and It is calculated by dividing net income by total assets. The numerator of this ratio can be considered as the total operating income of the company, so the amount of income earned against each currency spent in the company is measured by the following formula (ROSS, 2004):

Ratio of return on assets (ROA) = net income/gross assets

3.4 The relationship of financial liberalization with turnover rates to profitability:

The interrelationships between (financial liberalization at turnover and profitability rates) will be identified according to the relevant literature, this is in order to complete the directions for the study's variables in an effort to cover them more broadly. From the foregoing we conclude that financial liberalization at turnover rates is one of the important elements affecting the profitability of the company due to its impact on the return and risks of the investment process and profitability and it is an indicator of the company's efficiency and financial position. That is why the financial manager seeks, through the components of financial liberalization and the associated turnover rates, to achieve the highest level of profitability while maintaining a good level of liquidity.

Therefore, it requires companies to take into account their strategic plans and directions to achieve a higher goal, which is profitability, not to forget the liquidity and solvency requirements, and to achieve the ultimate and supreme goal of survival and growth. That is, to achieve productivity and profitability of companies and to expand their market share and contribute to the development of the state economy and the infrastructure of different institutions and sectors. The company may usually finance its activities from different sources which include all elements that constitute the budgetary requirement aspect. A company with high profitability and an opportunity to retain profits relies less on borrowed funds and more on the equity of profits. The financial management of the enterprise must have sufficient capacity to assess the impact of the use of various funding sources on the company's profitability.

Maximizing profitability has become a means of maximizing wealth, because their continued realization will sustain the value of this wealth, Profitability is the most important indicator taken into account when evaluating the strength of any company and its financial and accounting status.

4 Building the study model and the data used:

To achieve the study's objective of measuring the long-term impact of financial liberalization at turnover rates at the level of profitability of Iraqi banks, we will rely on unbalanced panel data for a sample of 22 banks, representing all private local commercial banks during the period (2020-2009) with a total of 236 annual observations, which were obtained from the financial reports of these banks. In order to achieve the study's objective, the study model will be built as follows:

$$Profitability_{it} = \gamma_0 + \sum_{k=1}^{K} X_{it}^{k} + \sum_{z=1}^{Z} C_{it}^{z} + \epsilon_t \quad (1)$$

Where.

- $\boldsymbol{Profitability_{it}}$ → The level of profitability of bank *i* in year *t*. Which will be expressed using the rate of return on assets (ROA).
- $\sum_{k=1}^{K} \boldsymbol{X_{it}^{k}}$ → Representing the vector of the separate variables of turnover rates or so-called "activity ratios or efficiency ratios", There are a range of calculations of turnover rates through which we can ensure that the bank is efficient in exploiting its diverse resources to increase profits. Among the most famous of these ratios, which will be used in the current study to suit them with the banking sector are (Asset Turnover), (Receivables Turnover), (Creditors' Turnover), and (Working Capital Turnover).
- $\sum_{z=1}^{Z} \boldsymbol{C_{it}^{z}}$ → Representing the vector of control variables, which will be selected in conjunction with previous studies represented in (Bank Size), (Bank Age), (Leverage), (Capital Adequacy) liabilities/equity, Net cash flows (CFO), and finally, following international standards (IS) which is a dummy variable that reflects the Iraqi banks' adherence to international standards in the preparation of financial statements since 2016. Where it takes the value of one for the period (2016-2020), and it takes zero otherwise.
- $\boldsymbol{\epsilon_t, \gamma_0}$ → represents function constant, and the error term with its usual qualities respectively.

Before describing the final study model, (Auxiliary regression for non-linearity test - squared terms) test has been used specially for non-linearity testing and model characterization, to discover the possibility of a nonlinear structure in the study model, that is, to ascertain whether independent variables in their relationship with affiliate variables follow linear or non-linear form. It has been shown that all independent and control variables follow the linear form in relation to the rate of return on assets, except for the creditors' turnover rate, which takes a non-linear form in relation to the rate of return on assets. Thus, creditors' turnover was expressed in the quadratic form of the study model to capture this non-linear relationship. The study model can therefore be described in its final form as follows:

$$\begin{aligned} ROA_{it} = {} & \beta_0 + \beta_1 Asset_{it} + \beta_2 Receivables_{it} + \beta_3 Creditors_{it} + \beta_4 Creditors_{it}^2 \\ & + \beta_5 Working\ Capital_{it} + \beta_6 Bank\ Size_{it} + \beta_7 Bank\ Age_{it} \\ & + \beta_8 Leverage_{it} + \beta_8 Capital\ Adequacy_{it} + \beta_{10} CFO_{it} + \beta_{11} IS_{it} \\ & + \epsilon_t \qquad (2) \end{aligned}$$

Where t expresses the period of time used, and (β_0) expresses the constant part, while (*ROA*) expresses the dependent variable of the rate of return on assets, and coefficients (β_2) to (β_5) refer to the independent variable coefficients of asset turnover rates, debtors, creditors and working capital respectively. While the coefficients from (β_6) to (β_{11}) refer to the coefficients of the control variables, which are; the size and age of the bank, financial leverage, capital adequacy ratio, net cash flows, and compliance with international standards in the preparation of financial statements. Finally (ϵ_t) refers to random error.

Tables (2) and (3) show the statistical description of the variables and the correlation matrix between them, respectively while table A shows the level of profitability and turnover of each bank, respectively.

Table 2: Descriptive summary statistics

	Unit	*Obs.*	*Mean*	*Median*	*Std. Dev.*	*Min*	*Max*	*Normality test*
Dependent Variable:								
ROA	%	236	0.0139	0.0161	0.066	-0.9377	0.1264	[341692]***
Independent Variables:								
Asset Turnover	%	236	0.0597	0.0547	0.041	0.00003	0.4188	[5939.70]***
Receivables Turnover	%	236	4.5058	1.0206	18.13	0.00009	247.89	[195393]***
Creditors' Turnover	%	234	2.3571	1.0780	5.480	-0.1704	50.899	[17328.5]***
Working Capital Turnover	%	236	0.2253	0.1397	0.409	-0.1383	5.4233	[120619]***
Control Variable:								
Bank Size	Logarithm	236	26.875	26.963	0.597	25.033	28.234	[23.2677]***
Bank Age	Year	236	16.093	16	5.947	3	29	[5.34785]*
Leverage	%	236	0.5717	0.5358	0.462	0.0848	7.0237	[256947]***
Capital Adequacy	%	236	5.9655	1.1544	66.59	-4.1100	1024.3	[532787]***
CFO	Billion	236	13.700	6.5100	130.0	-875	590	[1691.37]***
International Standards	Dummy	236	0.4237	0	0.495	0	1	[39.4226]***

Note: ***, **, * indicate significance at 1%, 5% and 10% respectively.

The statistical summary of all variables shows that Iraqi banks have achieved negative financial performance in only 27 views, representing 11.4% of the total sample. Here, the average return on assets was 0.0161. This means that Iraqi banks earn a return of 16.1 Fils on each of the banks' assets during the period, they are relatively low profitability rates. also, it's clear that the level of turnover rates in Iraqi banks is high, which reflects the high level of performance of banks and their administrative efficiency. And by comparing the turnover rates used with each other, it becomes clear that the creditors' turnover rate came in the first place as the highest turnover rate in Iraqi commercial banks, with a median of 1.078. This means that Iraqi banks are able to manage their debts and cash flows effectively. The debtors' turnover rate is 1.021, which includes the effectiveness of banks in collecting financial balances due from customers. Then the working capital turnover rate with a median of 0.1397, and finally the assets turnover rate with a median of 0.0547.

Finally, for control variables, Banks' volumes vary between (25.03 - 28.23) with a general intermediary of 26.88. These banks also range in age (3-29 years) from an average of 16 years. The intermediary's leverage ratio was 0.5358, this means that Iraqi banks' debt is equivalent to 53.6% of their total assets on average. Iraq's banks are achieving a relatively low capital adequacy ratio. The capital adequacy ratio intermediate is 1.154 at the total sample level, this includes that the total debt of Iraqi banks amounts to 115.4% of their total ownership rights, that is, Iraqi banks' debt exceeds equity by 15.4% on average which leads to the high level of financial risk faced by banks. Net cash flows ranged from (-875 billion - 590 billion dinars) with a general intermediary of IQD 6.51 billion. Finally, the mean of the dummy variable for following international standards was 0.4237, which implies that 42.4% of the total financial statements from which data were extracted apply international standards in preparing financial statements.

Table 3: Correlation matrix between study variables

		(1)	**(2)**	**(3)**	**(4)**	**(5)**	**(6)**	**(7)**	**(8)**	**(9)**	**(10)**	**(11)**	**(12)**
ROA	**(1)**	1											
ROE	**(2)**	0.158[b]	1										
EPS	**(3)**	0.759[a]	0.957[a]	1									

Asset Turnover	**(4)**	0.677[a]	0.016	0.572[a]	1								
Receivables Turnover	**(5)**	0.030	0.016	-0.024	0.045	1							
Creditors' Turnover	**(6)**	-0.098	-0.010	-0.066	0.149[b]	0.075	1						
Working Capital	**(7)**	0.195[a]	0.079	0.529[a]	0.382[a]	-0.022	0.056	1					
Bank Size	**(8)**	-0.191[a]	0.149[a]	0.108	-0.246[a]	-0.076	-0.122[c]	0.181[a]	1				
Bank Age	**(9)**	-0.261[a]	0.079	-0.179[b]	-0.295[a]	-0.200[a]	-0.171[a]	-0.149[b]	0.335[a]	1			
Leverage	**(10)**	0.380[a]	0.033	0.449[a]	0.597[a]	-0.024	0.009	0.122[c]	0.025	-0.035	1		
Capital Adequacy	**(11)**	-0.064	-0.991[a]	0.505[a]	0.047	-0.016	0.001	0.006	-0.127[c]	-0.112[c]	-0.002	1	
CFO	**(12)**	0.114[c]	0.013	0.211[a]	-0.117[c]	0.028	0.008	-0.053	0.101	-0.055	-0.019	0.016	1

Note: a, b, c indicate significance at 1%, 5% and 10% respectively.

From the association matrix, an expulsive correlation with the turnover of assets, debtors and working capital with profitability is evident. On the other hand, we find a very weak and non-statistically significant inverse correlation between the creditors' turnover rate and profitability. This may be due to a non-linear relationship between creditor turnover and profitability, as indicated in the preceding part. We also find that the turnover rates are most related to the rate of return on assets is an asset turnover rate of 67.7%, followed by a working capital turnover rate (19.5%), a creditor turnover rate (-9.8%) and, finally, a debtor turnover rate (3%). As for the interconnectedness of autonomous and control variables, they ranged from weak to medium-sized. According to Wooldridge (2015) coefficients larger than 0.7 may indicate that the model may be exposed to the problem of multicollinearity. Accordingly, no probability of the problem of multicollinearity was found among the structural study model variables.

5 Methodology and Econometric analysis:

5.1 Estimation methodology:

Due to the use of a wide sample of banks that differ greatly whether in terms of the level of profitability or turnover rates, this may raise the problem of individual differences or impacts of each bank when analyzing. This is confirmed by the two tests (Residual variance) and (Breusch-Pagan). Where the F value calculated for them was significant at 1%, as shown in Table (4), which indicates the rejection of the null hypothesis that the banks have the same constant part. Thus, accepting the alternative hypothesis that the sample of banks does not have the same constant, that is, there are individual effects for each bank. Accordingly, two different approaches to individual influences have been used to ascertain the robustness and stability of results; these approaches are the one-way fixed effects model, and the one-step dynamic panel data model.

Table 4: Identity tests results

Tests used	Description	Model (1)
Residual variance test	Test for differing group intercepts (Pooled OLS versus FEM)	[4.0792]***
Breusch-Pagan test	Test for differing group intercepts (Pooled OLS versus REM)	[18.511]***
Hausman test	To compare between (REM versus FEM)	[31.852]***
Time test	Wald joint test on time dummies	[0.6708]

Note: ***, **, * indicate significance at 1%, 5% and 10% respectively.

For the Fixed Effects Model (FEM) or the so-called Least square with dummy variables model (LSDV), it was selected on the basis of the Hausman test which compares the fixed effects model with the random effects model. The calculated F value was

significant, which indicates a preference for the fixed-effects model over random. The fixed effects model deals with individual effects by showing them and taking them into consideration when analyzing by adding dummy variables for each bank as the following formula:

$$\boldsymbol{y_{it} = \beta_{0i} + \acute{\beta} x_{it} + u_{it}} \qquad \boldsymbol{(3)}$$

Here we note that we have placed the i coding on the cut-off part of the Y axis allowing it to vary by different banks. These differences may be due to specific features of each bank, such as the level of institutional culture, human capital, labor market experiences or other features. Which makes us take into account when analyzing the individual differences of each bank, but we still assume that inclination transactions are fixed for each bank, Thus the term "fixed effects" refers to the fact that although the cut-off of the y-axis varies between observations, it does not vary with time. It is thus time-bound (Gujarati, 2003). Here the time test showed that time is not influential in the study model, Thus, the method of measurement remains the 1- way FEM, that is, the cut-off part of the y-axis differs according to the banks only, not the banks and time.

For the dynamic panel data model, which is the work of Arellano & Bond (AB), in which the lagged dependent variable is used as an interpreted variable, allowing for partially modified dynamic modelling as the following formula:

$$\boldsymbol{y_{it} = \alpha y_{it-1} + \acute{\beta} x_{it} + u_i + \varepsilon_{it}} \qquad \boldsymbol{(4)}$$

Here's the main idea that this model deals with individual influences is by removing them by taking the first difference of the equation. Therefore, the first difference equation is equivalent to the equation (5):

$$\boldsymbol{\Delta y_{it} = \alpha \Delta y_{it-1} + \acute{\beta} \Delta x_{it} + \Delta \varepsilon_{it}} \qquad \boldsymbol{(5)}$$

Here, the term composite error built in 6 has autocorrelated and it is also closely related to the lagged dependent variable (which is now a first-order moving average operation MA(1) contains the first y_{it-1} and the last $\varepsilon_{i,t-1}$). This violates the strict exogenous hypothesis, which may cause an endogenous problem, which is solved by using endogenous instrument variables. That is, based on the lagged values of the instrument variables that may all be associated with the u_i which is represented by the unobserved individual effects. The first difference of the u_i equation is removed and the associated problem of Omitted variable bias.

The AB approach, extended to the GMM system context, is therefore an estimate designed for the following situations: (i) (T small, N large) i.e. having short intervals with a large number of individual units. (ii) Linear relationship. (iii) The dependent variable is dynamic depending on our previous perception. (iv) The explanatory variables are not entirely exogenous, i.e. they are associated with the past and possibly the present of the perceived error. (v) The presence of individual fixed effects, which means that there is no unobserved heterogeneity. (vi) The existence of inconsistencies, self-association among individual units' errors, but not between these (Baum & Christopher, 2006). The use of these two methods represents an important contribution from this paper, as most of the research that examined this relationship did not take into account individual differences between banks.

Before estimating the study model, all study variables were confirmed to be stationary at the level. That is, they are stationary of degree I(0). It is the precondition for using FEM and DPD methods. This was done by using the unit's root test for stationary. The quality of the study model should also be ascertained and to be free from various measurement problems. In order to be assured of the obtained results. In this regard, various diagnostic tests indicated that the study model suffers from the problem of Heteroskedasticity, Serial Correlation among the residuals, as well as the problem of non-normal distribution of the

residuals. All of these measurement problems are expected to happen in this large sample of heterogeneous banks. Therefore, the problem of non-normal distribution is not of great importance here because according to the statistical theory, the OLS estimates degenerate into a normal distribution in general, with increasing sample size. Thus, in large samples, as in our current study, the statistical inference will follow the normal OLS method, which assumes normal distribution.

In order to overcome the remaining two problems, the FEM method was assessed using a robust order (White cross-section standard errors), as well as the Firm GLS weights, which are effective in eliminating the problems of heteroskedasticity, and the serial correlation between the residuals. As for the (DPD) method, it is clear from the results table (5) the significance of the AR (1) errors test. This indicates the presence of first-order autocorrelation. Nevertheless, it is not a threat to the model's validity, while Second-degree self-association AR (2) violates the statistical assumptions of the estimation methodology. Luckily, there's no such thing. Sargan's description test also shows that the tools used are too valid. The Wald test also tells us that there is a significant co-significance of the explanatory variables as a whole at the 1% level. Thus, although the DPD method is designed to deal with the two problems of heteroskedasticity, serial correlation is among the individual units' errors as was mentioned. It has been valued using the "Asymptotic standard errors". Therefore the capabilities resulting from the two measurement methods used are highly efficient and reliable.

5.2 Econometric analysis and Results interpretation:

Here, the impact of the four turnover rates on the asset return rate is assessed through the use of one-way fixed effects Technique and dynamic panel data Technique, as shown in table 5 below.

Table 5: Turnover rates and Bank profitability relationship: Econometric results

Dependent variables: ROA

Method: 1-way fixed effects model & 1-step dynamic panel data (with robust standard error)

	Reg (1)		**Reg (2)**	
	Coefficient	**t-Stat.**	**Coefficient**	**t-Stat.**
ROA(-1)			0.15319	[3.817]***
Ratio Asset Turnover	**0.42219**	**[14.32]*** **	**0.38789**	**[13.17]*** **
Receivables Turnover Ratio	**2.06e-07**	**[0.009]**	**-2.66e-05**	**[-0.773]**
Creditors' Turnover Ratio	**-0.00103**	**[-6.159]*** **	**-0.00152**	**[-3.534]*** **
Creditors' Turnover squared	**1.65e-05**	**[3.863]*** **	**2.37e-05**	**[2.671]*** **
Working Capital Ratio	**0.00286**	**[3.058]** **	**0.00975**	**[1.725]* **
Bank Size	0.00733	[5.982]***	0.00215	[0.969]
Bank Age	-0.00180	[-5.357]***	-0.00191	[-4.243]***
Leverage	-0.00492	[-3.023]**	-0.00167	[-0.756]
Capital Adequacy	-3.74e-05	[-11.94]***	-2.63e-05	[-2.866]***
CFO	1.16e-14	[2.136]*		
International Standards dummy	0.00303	[1.836]*	0.00741	[3.227]***
Constant	-0.17187	[-4.906]***		
Obs.	233		189	
Banks	22		21	

Method	1-way fixed effects	1-step dynamic panel data
R-squared	88.8%	
Adjusted R-squared	86.9%	
Durbin-Watson stat.	1.6432	
Fisher test (F-stat.)	[47.675]***	
Number of instruments		20
Test for AR(1) errors (z stats.)		[-5.4673]***
Test for AR(2) errors (z stats.)		[-1.0176]
Sargan over-identification test (χ^2 stats.)		[25.193]***
Wald (joint) test (χ^2 stats.)		[951.89]***

Note: - ***, **, * indicate significance at 1%, 5% and 10% respectively.

Here, from the regression (1) in table (5) for measuring the impact of turnover rates on the rate of return on assets using the fixed effects method, it is clear that there is a positive impact of the turnover rate on the rate of return on assets in Iraqi banks at a statistical level of 1%. According to the regression coefficient, an increase of 1 per cent in the turnover of assets increases the rate of return on assets by 0.422. This result is consistent with previous studies and accounting thought. An increase in the asset turnover rate includes an increase in the efficiency of the bank in using its assets to generate revenue. This will necessarily lead to an increase in the profitability of banks, whether through an increase in the rate of return on assets, of course (which is the most relevant measure of asset turnover), the rate of return on equity, or the rate of return per share. Although the results of regression coefficients show that the impact of asset turnover is greater on the stock's rate of return, then equity, then asset. Thus, the turnover rate gives a real assessment of banks' fundamentals and provides correct information on the bank's performance during the financial year.

On the other hand, the regression coefficient for debtors' turnover was not statistically significant. This shows that there is little impact of debtors' turnover on the level of profitability of the Iraqi banks. Thus, the rate of turnover of debtors in Iraqi banks rises and what is associated with it from the high efficiency of the collection process and follow-up of customer debts in banks, the Increasing speed of investment movement in receivable accounts through increasing the number of sale and collection cycles, Consequently, not to disrupt bank funds in the form of debit accounts with their clients, will not affect the profitability of Iraqi banks.

Table 6: Sasabuchi–Lind–Mehlum test for an inverse U-shaped relationship for Creditors' Turnover Ratio

		Reg (1)	**Reg (2)**
X_i	$\hat{\beta} =$	-0.00103 [-6.159]***	-0.00152 [-3.534]***
X_i^2	$\hat{\gamma} =$	1.65e-05 [3.863]***	2.37e-05 [2.671]***
Interval	$X_{l\,(min)} =$	-0.17042	-0.17042
	$X_{h\,(max)} =$	50.8995	50.8995
Slope at X_l	$\hat{\beta} + 2\hat{\gamma}X_l =$	-1.04e-3 [-4.393]***	-0.00152 [-4.393]***
Slope at X_h	$\hat{\beta} + 2\hat{\gamma}X_h =$	6.47e-4 [5.199]***	8.96e-04 [5.199]***
Sasabuchi test (t-value)		**[3.093]*** **	**[2.993]*** **
Extremum Point	$-\hat{\beta}/(2\hat{\gamma}) =$	31.3030	31.9937
		Extremum inside interval	Extremum inside interval

Note: - ***, **, * indicate significance at 1%, 5% and 10% respectively.

The results also showed that the relationship of the creditors' turnover rate with the rate of return on assets is non-linear. Also, this non-linear relationship takes the shape of the letter U, in other words, the impact of creditors' turnover on the rate of return on assets is negative. In order to ascertain the credibility of this non-linear relationship between creditor turnover and asset return, a test (Sasabuchi-Link-Mehlum) was conducted as shown in table (6). Where the test statistic was a function at the level of 1%, which indicates the rejection of the null hypothesis that there is an Inverse U shape relationship. Thus, accepting the alternative hypothesis that there is a relationship (U shape), the turning point came within the limits of the actual data for the level of creditors' turnover. Which reflects that it is a real U-relationship, and not a phony one. Thus, the effect of the creditors' turnover rate is negative on the rate of return on assets when creditors' turnover is lower than the value of 31.303, but it turns positive when the creditors' turnover exceeds this ratio.

This result is consistent with previous studies and accounting thought. Low creditor turnover rates include low administrative efficiency in meeting obligations and paying suppliers, decreasing ratios over time mean that the bank takes longer time to pay its debts to suppliers than to previous periods. This indicates that the Bank is experiencing a financial problem and a lack of liquidity, or the bank negotiates with suppliers on other methods of repayment with extended repayment periods which will negatively affect the profitability of Iraqi banks. But with increased creditor turnover's ratios so that it exceeds the inversion values shown in table (6), the bank's sales increase, increasing the possibility of repaying suppliers faster. While increasing the Bank's ability to manage its debts and cash flows effectively, the profitability of banks will be increased, especially the rate of return on assets and property rights, but earnings per share are still not affected by the increase in creditors' turnover.

The result of the capital turnover rate is similar to the asset turnover rate. Therefore we find a positive effect of the working capital turnover rate on the level of profitability of Iraqi banks, at the level of statistical significance of 1%. A 1 per cent increase in working capital turnover increases the rate of return on assets by 0.003, which means that the bank manages its short-term assets and liabilities effectively, thereby increasing its sales/services. This will necessarily increase banks' profitability either by increasing the rate of return on assets, return on equity or return on share. Although it is clear from the results of the regression coefficients that the effect of the working capital turnover rate is greater on the rate of return on equity, then the share, then the assets.

For control variables, we find a positive effect of the size of the bank on its level of profitability. Increasing the size of the bank by one degree will lead to an increase in the rate of return on assets by 0.007. The logical explanation for this is that, as the bank increases in size and market share, shareholders' expectations of strong financial performance are raised. Thus, the bank is under pressure to achieve high profitability rates, which motivates the bank to work towards enhancing turnover rates, in addition to reducing his level of caution and precaution towards banking in an effort to increase his profitability, such as reduced loan loss provisions and increased investment in high-profitability, risk-taking and other non-governmental securities.

On the other hand, we find a negative impact of the age of the bank on its level of profitability. Increasing the bank's lifespan by one year will result in a lower rate of return on assets of 0.002, which confirms the stagnation of Iraqi banks in their banking systems. Considering that banking systems are constantly dynamic requires the bank to have sufficient flexibility to change its banking philosophy and ideology. But we find that Iraqi banks are more closed on their systems. Iraqi banks may have a kind of flaunting of their current philosophy and banking systems, which negatively affects their profits as their lives increase, as they become more and more closed.

Similarly, we find a negative impact of leverage on the rate of return on assets. And this is logical as increasing the ratio of indebtedness (liabilities to assets) increases the bank's potential risk which negatively affects its profitability. As for the capital adequacy ratio, its inferences did not differ from the financial leverage. We find a negative effect of the capital adequacy ratio (liabilities to equity) on the rate of return on assets. An increase in the ratio of liabilities to equity will lead to a decrease in the rate of return on assets by 0.00004 on average.

In contrast, we find a positive impact of cash flows on the rate of return on assets, which is expected because positive cash flows support the financial position of Iraqi banks, and pushes it to expand its banking services, which increases their profitability.As for the dummy variable that reflects international standards in the preparation of financial statements, its results are not different from those of net cash flows, In other words, we find a positive impact of these criteria on the rate of return on assets, This is supported by the fact that, since 2016, Iraqi banks have followed international standards in preparing their financial lists, which have led to an increase in the rates of return on assets book-to-book.

Finally, with regard to general statistics, it is clear that the value of the modified coefficient of determination (R2) of the study model is high where turnover rates and other controlling variables explain between 86.9% of the changes that occur in the rate of return on assets. The rest of the percentage is due to random error due to the presence of other variables that were not controlled within the model. Fisher's test also refers to the rejection of the null hypothesis and the acceptance of alternative imposition with a statistical connotation of the study model as a whole at a 1% indicative level. To ascertain the strength and stability of the results, the study model was recalculated using one-way dynamic longitudinal data technology as shown by regression (2), At first glance, it can be seen that there is a significant match between the results of the two methods. Thus, the main conclusion to be drawn is that the impact of turnover rates on Iraqi banks' profitability levels is firm and strong against different estimation methodologies.

6 Results:

Financial liberalization at turnover rates is one of the important elements affecting the profitability of the company due to its impact on the return and risks of the investment process and profitability, which is an indicator of the company's efficiency and financial position. The financial manager seeks through the components of financial liberalization and associated turnover rates and aims to achieve the highest level of profitability while maintaining a good level of liquidity. So it requires companies to take into account their strategic plans and directions to achieve a higher goal of profitability. And not to forget the requirements of liquidity and solvency, and to achieve the ultimate and supreme goal, which is survival and growth, That is, to achieve productivity and profitability of companies and to expand their market share and contribute to the development of the state economy and the infrastructure of different institutions and sectors.

The study therefore aimed to measure the long-term impact of financial liberalization at turnover rates on the profitability of the local private commercial banks listed on the Iraqi stock exchange, drawing on the unbalanced panel data of 22 banks, during the period from 2020 to 2009. Asset turnover, creditors, debtors, and working capital. The rate of return on assets (ROA) was used to reflect the level of profitability. Using a one-way fixed effects method, dynamic longitudinal data method, a positive impact of asset turnover and working capital on asset return was found, while creditors' turnover relationship to profitability was non-linear, taking the form of a U which means that the effect of creditors turnover is negative on profitability when creditors turnover rates are low. However, this effect turns positive when creditor turnover rates are high. On the other hand, the debtors' turnover rate had no significant effect on profitability. The results

also confirmed that these relationships are consistent and strong against different estimation methodologies. Thus, these results give support to the management of banks and policy makers to take into account their strategic plans and directions to achieve a higher goal of profitability.

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