World Economics & Finance Bulletin (WEFB)
Available Online at: https://www.scholarexpress.net
Vol. 51, October 2025
ISSN: 2749-3628

ANALYSIS OF THE DYNAMICS OF BANK DEPOSITS UNDER INTEREST RATE VOLATILITY IN THE IRAQI ECONOMY FOR THE PERIOD (2004-2024)

Mustafa Hussein Abdulali [1]
Corresponding author: Mustafa Hussein Abdulali
Email: mabdulali@uowasit.edu.iq

Article history:
Received: 26th August 2025
Accepted: 24th September 2025

Abstract:
The research aims to investigate the impact of savings and fixed interest rates on bank deposits (savings and fixed) with a comparison of which deposits are more responsive than others, by taking a series of data extending (2004-2024) in the Iraqi economy. Using the threshold model, we demonstrate regime-dependent price-quantity relationships that vary across products. The study finds that interest rates rise early, decline, and stabilize, and that deposit growth becomes less volatile over time. Short-term savings deposits are simultaneously positively correlated with the savings rate, consistent with rapidly adjusting portfolios. Time deposits exhibit negative short-term movement with their announced rate, consistent with supply-driven pricing and a defense against rollovers during times of limited liquidity. These results suggest that banks should engage in savings pricing only when the policy/management rate can be maintained above the savings floor, and that the time deposit rate should be used aggressively only when the TIR is below the threshold.

Keywords: Bank deposits, interest rates, Iraqi economy, threshold model.

INTRODUCTION.

Deposits are one of the most important sources of financing for commercial banks, which always seek to grow them. Since interest rates on deposits are one of the strategies for attracting deposits, although the nature of the response to interest rate changes may vary from one country to another depending on religious and ideological differences, Therefore, we find it important to identify the extent to which depositors in Iraqi commercial banks respond to these changes, even though not all deposits earn interest, as current deposits do not earn interest. while savings and fixed deposits do earn interest, albeit at varying rates. Therefore, we will focus our research on these two types of deposits and their response to interest rate changes.

Dai et al. (2025) conducted a study entitled "The Impact of Negative Interest Rates on the Shadow Banking System." This paper discusses the impacts of negative interest rate policy (NIRP) regarding the magnitude of shadow banking system. The research reached the conclusion that negative interest rate policy led to the shrinkage in the size of shadow banking systems. It was also revealed that the effectiveness of this policy is different depending on the properties of both countries and the financial system like the inflation rate and the magnitude of the system. The research established that the bigger the system, the bigger the contractions experienced in the medium to high inflation environments. The findings are strong and sound in the different tests involved. The article (Mirea et al., 2019) titled The Effect of Interest Rates on Household Income on Bank Deposits tries to draw attention to the correlation between household term deposits, average income, and deposit interest rate on deposits, and a multiple linear regression is used to emphasize the connection. The analysis of statistical data in Romania during the period 2004-2018 is the basis of the research and concludes that 67.3 percent of the trend in the household deposits can be attributed to the coincidental change in the variable of interest rate on deposits and average household income.

Meanwhile, Das (2002) concluded in his study "Interest Rates on Time Deposits in India" that public savings in the banking system are of paramount importance in steering the Indian economy. This study focuses on time deposits as the main component of these savings, accounting for approximately 85% of total deposits. It is a micro-level study on

[1] University of Wasit, College of Administration and Economics, Department of Economics, ORCID: 0009-0005-7337-725x

World Economics & Finance Bulletin (WEFB)
Available Online at: https://www.scholarexpress.net
Vol. 51, October 2025
ISSN: 2749-3628

the interest rate on time deposits in India. The study presented by Srivastava (2025) examines the impact of competition in the banking sector on deposits and retail deposit growth. The researchers came to the conclusion that the higher the growth rate of deposits through competition, the higher is its dependence on the banking market structure, the greater is its effect in less concentrated markets. The interest rates are not directly discussed, but the competition in the banking sector tends to be manifested in the interest rates charged on the deposits to win the customer and the market share. In a study conducted by (Bikker, 2018), the author examines what leads to the determination of interest rates on time deposits and savings accounts in the Dutch banking sector. The findings revealed that since the beginning of the global financial crisis, interest rates have been more sensitive to the risk of banks. The paper also revealed that time deposit interest rates are more likely to portray the macroeconomic environment as compared with savings account interest rates .

The research (Tran, 2024) will seek to examine the connection between sustainability, banks, deposits, investments, and interest rate using literature review. The paper discovered that the three variables deposits, investments, and interest rates have a reciprocal effect. The paper highlights the significance of comprehending the impact of the changes in interest rates on these variables as a subject of banking sustainability. Ngerebo-A. 2016) study focuses on the correlation between interests rates and profitability of commercial banks in Nigeria within the period of 1980 and 2014. The intention was to investigate the degree to which various interest rates influence the performance of profitability in terms of return on investment and on assets. The research revealed that the relationship between the interest rates charged by the central bank and the lending rates, savings rates and profitability of the commercial banks exist.

Theoretical Framework

First: The conceptual framework of interest rates

The concept of interest rates varies depending on the parties involved. For lending institutions, interest rates represent a return on their investments. while for borrowing entities, it is a cost. In other words, for banks, the interest rate is considered a cost when paid on bank deposits, and income when received by banks as interest on the loans they grant. The central bank is responsible for setting lending and borrowing interest rates, which can be explained as follows:

1 -Interest rates on deposits: These are the rewards paid on fixed deposits and savings deposits, i.e., the cash returns that depositors receive in exchange for giving up their cash liquidity for a certain period of time (Al-Dulaimi, 1990).

2- Interest rates on loans: These are the costs borne by borrowers when borrowing money from banks, and are determined by the lending rates paid by banks to obtain funds from those with surplus funds (savers), as well as by the Central Bank's rediscount rate (Al-Ani, 2002).

Second: The conceptual framework for deposits and their classifications

Deposits represent one of the main sources of commercial bank resources, and banks earn their profits from deposits through the profit margin they obtain from the difference between the interest earned on loans granted and the interest paid on those deposits (Howells, 2008). Therefore, banks rely primarily on the size and types of deposits in their credit policies when granting loans to customers, in addition to the policies followed by the central bank in determining the amount of credit granted.

A bank deposit is defined as a contract under which the depositor pays an amount of cash through one of the means of payment, and under which the bank undertakes to return this amount to the depositor upon request or when it matures, and undertakes to pay interest or profits according to the terms of the contract concluded between them (Al-Shammari, 2009).

Deposits can be classified according to various criteria, such as time, source, activity, and origin. The most well-known and widely used classification is based on time, and deposits can be classified as follows:

1- Current deposits (on demand): These are funds deposited by individuals and entities with commercial banks and can be withdrawn at any time by means of orders issued by the depositor to the bank for payment to him or to another person designated by the depositor in the order issued to the bank (Al-Sayrfi, 2013). They are also called demand deposits because they can be claimed immediately, i.e., without delay and without preconditions, and can be withdrawn by means of checks. This type of deposit constitutes the largest proportion of total deposits with commercial banks and is also the least costly source for the bank, as banks do not pay interest to current account holders, or pay a small amount of interest in some cases and only on large accounts when the balance of these deposits is not less than a specified amount. Given that they can be withdrawn at any time, these deposits carry a high degree of risk when large and sudden withdrawals occur.

2- Savings deposits: These are mostly small deposits, and the account holder is usually given a savings book and has the right to withdraw part or all of the deposit whenever they wish (Al-Azzawi & Khamis, 2010). This type of deposit is attractive to families' savings, as the amounts deposited and the interest accrued are recorded in a green book or a small blue withdrawal book called a savings book, which allows the depositor to make deposits or withdrawals at any

World Economics & Finance Bulletin (WEFB)
Available Online at: https://www.scholarexpress.net
Vol. 51, October 2025
ISSN: 2749-3628

time (Thomas, 2006). This type of deposit often carries a slightly lower interest rate than the interest paid on term deposits.

3- Fixed deposits (term deposits): These deposits are defined as deposits whose maturity date is determined by agreement between the bank and the depositor, and the depositor is not entitled to withdraw them until after the agreed period has elapsed (Al-Himyari, 2006). The customer can only withdraw them after a specified period of time has elapsed since their deposit and with prior notice. Therefore, many economists and researchers do not consider them to be cash, but rather a means of keeping idle funds, albeit with a return (interest) that increases gradually depending on the term and size of the deposit. Because they are less liquid than deposits (current and savings), banks rely on them to finance their credit operations more than they rely on other sources, as the nature of these deposits does not require large cash reserves like those required for other types of deposits. They represent the relinquishment of cash liquidity for a specified period of time in exchange for a certain interest rate (Cochran, 1971).

Third: The relationship between interest rates and bank deposits.

Interest rates are an important, fundamental factor that influences the stimulation and attraction of bank deposits, especially fixed deposits and savings deposits. Changes in interest rates affect the movement of deposits. According to studies, interest rates are directly related to bank deposits, especially fixed deposits and savings deposits. The higher the interest rate on deposits, the higher the demand for them, and vice versa. Interest rates vary according to the term of the deposit, whether monthly or annual. If the deposits are short-term, we find that their interest is lower than the interest paid on long-term deposits, as the latter are more exposed to inflation risks, which prompts the depositor to demand higher interest on their savings (Nashour, 2021). In other words, the longer the borrowing period, the greater the risk, and therefore the higher the interest rates, and vice versa. Figure 1 illustrates the extent to which bank deposits respond to changes in lending rates through supply elasticity:

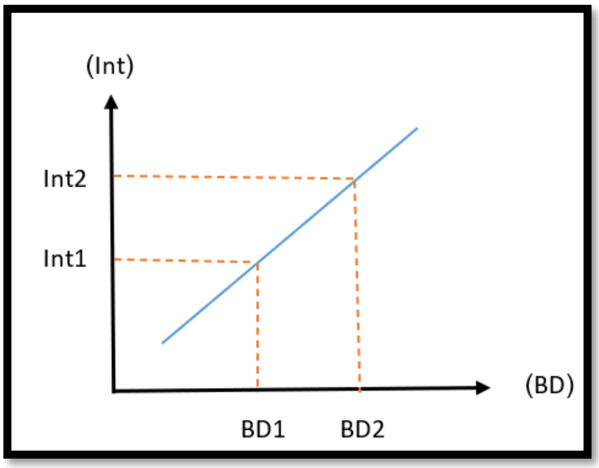

Figure (1) Relationship between interest rates and bank deposits

From the figure above, we observe that the increase in the interest rate from int1 to int2 leads to a change in the volume of bank deposits in the same direction from BD1 to BD2, which illustrates the positive relationship between the interest rate and the volume of deposits. Therefore, in order to maintain deposit growth at a positive rate ΔBD, the change in the interest rate ΔInt must always be positive.

Data Collections

This paper examines the dynamics of bank deposits of the Iraqi economy during the period 2004-2024 under the regime of interest rate volatility. The short term change in the deposit behavior and change in the structure is reflected with the help of quarterly data. The data set consists of the information on the amounts of deposits and deposit interest rates, of two national authoritative institutions. The Central Bank of Iraq, General Directorate of Statistics and Research provided time series data of deposits of various years, specifically, the Annual Statistical Bulletin. The interest rate data were taken out of Central Organization of Statistics (the Ministry of Planning) in their Quarterly Early Warning Indicators reports. This combined data will enable us to examine the sensitivity of savings and time deposits to interest rates fluctuations to generate empirical data on the nature of the relationship between monetary policy transmission and mobilization of deposits in Iraq.

Table 1. Variables, Codes, and Sources

Variable)	Code	Source

World Economics & Finance Bulletin (WEFB)
Available Online at: https://www.scholarexpress.net
Vol. 51, October 2025
ISSN: 2749-3628

Savings Deposits	SAV	Central Bank of Iraq, General Directorate of Statistics and Research – Annual Statistical Bulletin, various years. https://cbi.iq/page/142
Time Deposits	TIM	Central Bank of Iraq, General Directorate of Statistics and Research – Annual Statistical Bulletin, various years. https://cbi.iq/page/142
Savings Interest Rate	SIR	Ministry of Planning, Central Organization for Statistics – Quarterly Early Warning Indicators, various years. https://www.cosit.gov.iq/ar/national-accounts/income
Time Deposit Interest Rate	TIR	Ministry of Planning, Central Organization for Statistics – Quarterly Early Warning Indicators, various years. https://www.cosit.gov.iq/ar/national-accounts/income

Statistics Framework:

This study measures how bank deposits respond to interest rate movements using quarterly Iraqi data for 2004Q1–2024Q4 on savings deposits (SAV), time deposits (TIM), the savings rate (SIR), and the time-deposit rate (TIR). The empirical strategy proceeds in three steps. I diagnose the time-series properties and the contemporaneous lead–lag patterns. Second, I estimate a linear benchmark to anchor interpretation. Third, I estimate discrete threshold regressions that allow slope coefficients to change when interest rates cross endogenous cutoffs. The analysis and variable construction follow the project dataset and scope . I compute sample cross-correlations to inform whether contemporaneous or lagged effects dominate, using

$$\hat{\rho}\_xy(k) = cov(x_t, y_{t+k}) \div (\sigma_x \times \sigma_y)$$ (Box & Jenkins, 1976).

The linear benchmark relates deposits to their corresponding interest rate:

$$y_t = \alpha + \beta \times x_t + \varepsilon_t,$$

where $y_t \in \{SAV_t, TIM_t\}$ and $x_t \in \{SIR_t, TIR_t\}$. I estimate the model by OLS with heteroskedasticity-consistent covariance as needed and treat β as the average semi-elasticity of deposits with respect to the relevant rate. To capture state dependence, I estimate single-threshold regressions in which the slope changes when the threshold variable q_t (here, the contemporaneous interest rate) crosses an unknown cutoff γ. The two-regime specification is (Hansen, 2000; Bai & Perron, 2003a):

$$y_t = \alpha_1 + \beta_1 \times x_t + \varepsilon_t \; if \; q_t < \gamma$$

$$y_t = \alpha_2 + \beta_2 \times x_t + \varepsilon_t \; if \; q_t \geq \gamma$$

I obtain $\hat{\gamma}$ by a trimmed grid search that minimizes the residual sum of squares over admissible quantiles of q_t:

$$\hat{\gamma} = argmin\_\{\gamma \in \Gamma\} \, SSR(\gamma).$$

I test for the presence and number of thresholds using sequential sup-F tests that compare an L-threshold model to an (L+1)-threshold alternative under trimming; critical values account for nuisance parameters under non-standard asymptotics (Bai & Perron, 2003b). When a single threshold is supported, I report regime-specific slopes β_1 and β_2, which quantify how deposit sensitivity differs below and above $\hat{\gamma}$.

I assess model adequacy using standard residual diagnostics. I test normality with the Jarque–Bera statistic

$$JB = n \times [\, S^2 \div 6 + (K - 3)^2 \div 24 \,],$$

where S and K are sample skewness and kurtosis (Jarque & Bera, 1987). I test residual autocorrelation with Breusch–Godfrey LM tests at lags 1 and higher, and I report the Ljung–Box portmanteau statistic

$$Q(m) = n \times (n + 2) \times \sum\_\{k = 1\}\^m \, \hat{\rho}_k^2 \div (n - k)$$

(Ljung & Box, 1978; Breusch, 1978; Godfrey, 1978). I test heteroskedasticity with Breusch–Pagan and White tests; if detected, I re-compute inference with robust covariance estimators (Breusch & Pagan, 1979; White, 1980). These checks ensure that the reported regime coefficients and threshold inferences rest on well-behaved residuals. Under this framework, the linear model provides a baseline elasticity, while the threshold model reveals policy-relevant nonlinearities: the deposit response can be weak in one rate regime and strong in another. The combination of comprehensive pre-testing, trimmed threshold search, sequential testing for structural changes, and disciplined diagnostics delivers internally consistent estimates of interest-rate sensitivity in Iraq's deposit markets (Bai & Perron, 2003a; Bai & Perron, 2003b; Hansen, 2000).

World Economics & Finance Bulletin (WEFB)
Available Online at: https://www.scholarexpress.net
Vol. 51, October 2025
ISSN: 2749-3628

Results and Discussion:

The descriptive statistics summarize the central tendency, dispersion, and shape of quarterly deposit growth and interest rate series over 2004Q1–2024Q4. They provide a first view of location shifts, volatility, and distributional features that matter for estimation and inference in later models:

Table 2. Descriptive Statistics for SAV, SIR, TIM, and TIR (Quarterly, 2004Q1–2024Q4, N=84)

	SAV	SIR	TIM	TIR
Mean	3.408613	4.961264	4.801112	6.613269
Median	2.560846	4.460896	1.709567	5.872403
Maximum	14.39019	9.803010	52.51246	12.14955
Minimum	-0.981249	3.360000	-3.636817	4.750000
Std. Dev.	3.837617	1.696454	9.279048	1.921289
Skewness	1.159931	1.433966	2.913992	1.510586
Kurtosis	3.733766	4.428748	12.90432	4.592408
Jarque-Bera	20.72060	35.93224	462.2135	40.82133
Probability	0.000032	0.000000	0.000000	0.000000
Observations	84	84	84	84

Table 2 shows right-skewed distributions for all the variables with medians lower than means. Savings deposit growth averaged 3.41 with a median of 2.56 and varied between -0.98 and 14.39, pointing to largely moderate growth punctuated by occasional booms. Time deposit growth has a mean of 4.80 and a median of 1.71, and ranges between -3.64 to 52.51, showing occasional but very large growth alongside some shrinkage. Lesser interest rate ranges are observed. The rate of saving is 4.96 and ranges between 3.36 and 9.80. The time-deposit rate has 6.61 as its average and will fall within the range of 4.75 to 12.15. The mean term premium is approximately 1.65 which is in accordance with a positive premium in committing funds that have a longer maturity and is the standard rate of liquidity preference. The pattern of dispersion between deposit growth and rates is very different. The coefficients of variations of growth of savings 1.13 and time deposits 1.93 are high whereas of the savings rate 0.34 and time-deposit rate 0.29 are low. This disparity makes sure that balance sheet flows are much more volatile than administered or policy rates. Shape diagnostics substantiate this opinion. The skew of all series is positive and is particularly high in time deposit 2.91, which is consistent with episodic expansions. Kurtosis is greater than the Gaussian standard of 3 on all the variables and extreme on time deposits 12.90, indicating heavy tails and outliers. All variables that are rejected by JarqueBerra tests with p-values of 0.001 or less reject normality. There are practical financial and economic implications of these findings. To begin with, the positive term spread means that the bank will treat term commitment systematically and has a structural motivation to encourage households and firms to transfer funds into time deposits in response to an opportunity. Second, the fat-tailed time deposit growth distribution is the property indicating sensitivity to discrete events- institutional campaigns, regulation changes or macro shocks- where large inflows are caused by the short-lived occurrence of events. Third, the weak deterioration in the time series of deposit growth, with minimum of -0.98 and -3.64 of savings and time deposits respectively, is evidence of episodic withdrawals or portfolio rebalancing and not of an ongoing erosion, which is consistent with the stickiness of deposits under precautionary motives. Fourth, the significant non-normality alerts against the use of Gaussians-based standard errors and promotes strong inference, transformation of growth and model specification allowing regime changes and accommodation of outliers. Combinations In combination, the table suggests a steady and cyclical rate environment and lumpy deposit dynamics, of which time deposits are the most responsive and concentrated the risk.

World Economics & Finance Bulletin (WEFB)
Available Online at: https://www.scholarexpress.net
Vol. 51, October 2025
ISSN: 2749-3628

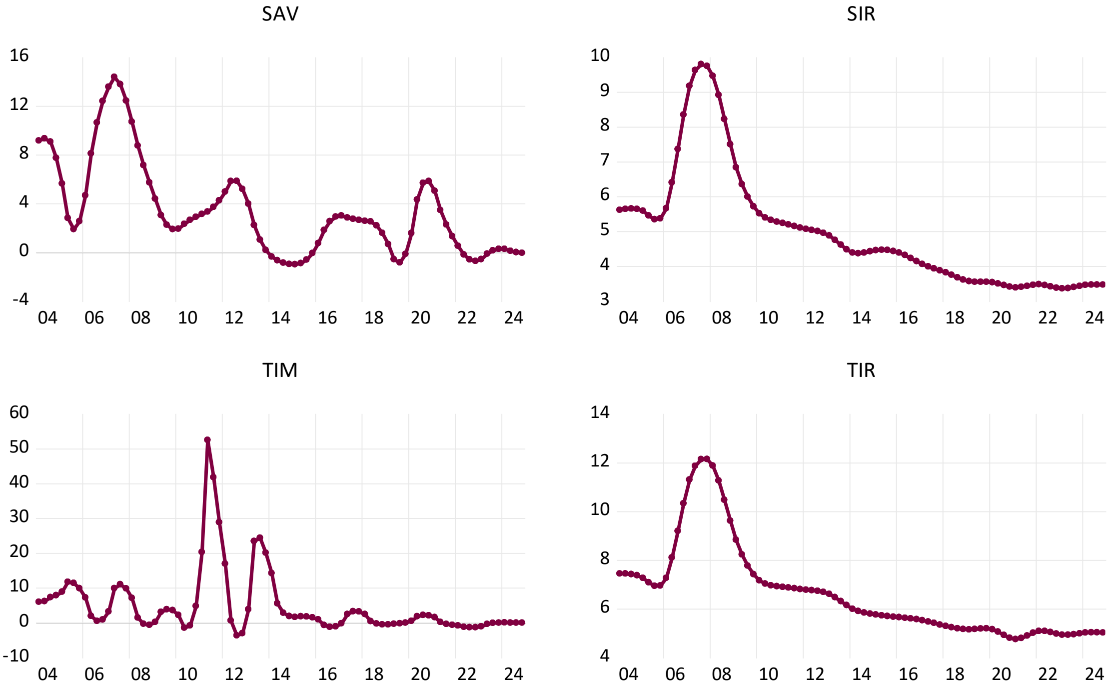

Figure 2. Quarterly series for SAV, SIR, TIM, and TIR in Iraq, 2004Q1–2024Q4.

The four panels reveal a common macro pattern. Interest rates surge early, then glide downward and stabilize, while deposit growth is cyclical and lumpy with diminishing amplitude over time. The savings rate SIR rises sharply in the mid-2000s toward a local peak near 10, then declines in a near-monotonic path to a low plateau around 4.8–5 by the late 2010s, with only small ripples thereafter. The time-deposit rate TIR follows the same arc with a higher level, peaking near 12 before converging toward 5, which preserves a positive term spread throughout and signals a consistent premium for maturity transformation. Savings-deposit growth SAV begins with a contraction followed by a rebound and then oscillates around zero with multi-year waves. Peaks appear in the second half of the 2000s and again around the early 2010s and late 2010s, but the swings become shallower after 2015 and the series hovers near zero by the end of the sample. Time-deposit growth TIM shows the strongest state dependence. It records brief but extreme surges around the late 2000s and early 2010s that push the series above 50 at the apex, followed by a rapid mean reversion and a long phase of low-amplitude movements close to zero from the mid-2010s onward. These trajectories imply three economic inferences. First, the early rate hikes are accompanied by large deposit movements, particularly in TIM, in line with rate-sensitive reallocation toward term products when remuneration is high and on the rise. Second, declining rates and reduced volatility lead to deposit growth being episodic and probably driven by discrete institutional or macro events rather than incremental pricing shifts, which accounts for the short and sharp spikes in TIM and the more subdued cyclical waves in SAV. Third, the late-sample low-rate regime compresses dispersion in both growth series and points to a stable funding base with occasional small pulses, which reduces pricing risk but shifts bank focus to liquidity planning around rare inflow bursts. Overall, the figure documents a transition from a high-rate, high-amplitude environment to a low-rate, low-amplitude environment, with persistent term premia, quick deposit responses during stress or campaigns, and weaker day-to-day sensitivity once rates settle near their floor.

World Economics & Finance Bulletin (WEFB)
Available Online at: https://www.scholarexpress.net
Vol. 51, October 2025
ISSN: 2749-3628

Correlations are asymptotically consistent approximations

SAV,SIR(-i)	SAV,SIR(+i)	i	lag	lead
		0	0.8162	0.8162
		1	0.7580	0.8298
		2	0.6788	0.8126
		3	0.5877	0.7671
		4	0.4948	0.7016
		5	0.4088	0.6281
		6	0.3367	0.5588
		7	0.2797	0.5023
		8	0.2374	0.4622
		9	0.2077	0.4379
		10	0.1874	0.4242

Figure 3. Cross-correlations between savings deposits (SAV) and the savings deposit interest rate (SIR) at leads and lags 0–10.

Correlations are asymptotically consistent approximations

TIR,TIM(-i)	TIR,TIM(+i)	i	lag	lead
		0	-0.7958	-0.7958
		1	-0.7546	-0.7540
		2	-0.7107	-0.7016
		3	-0.6530	-0.6154
		4	-0.4511	-0.4839
		5	-0.2207	-0.3180
		6	-0.0828	-0.1406
		7	0.0084	0.0475
		8	0.1031	0.1493
		9	0.1785	0.2136
		10	0.2613	0.2845

Figure 4. Cross-correlations between time deposit interest rate (TIR) and time deposits (TIM), leads and lags 0–10.

The cross-correlations indicate distinct adjustment mechanics for savings and time deposits. For savings, the relationship with the savings rate is strong, positive, and front-loaded. The contemporaneous correlation between SAV and SIR is 0.82 and rises slightly when SIR leads by one quarter 0.83, then decays smoothly as the horizon widens 0.81 at +2, 0.77 at +3, 0.70 at +4, 0.63 at +5, and 0.42 by +10. When SAV is shifted forward relative to SIR lags, the same pattern appears with smaller magnitudes 0.76 at −1 and 0.19 by −10. This profile implies that changes in SIR precede and accompany movements in savings growth with a short decision lag of about one to two quarters and with persistence over several quarters. Economically, households respond quickly to remuneration on liquid balances, and the effect endures as incremental deposits accumulate and inertia in savings behavior sustains the adjustment. Time deposits exhibit a different, supply-sensitive pattern. The contemporaneous correlation between TIM and TIR is strongly negative −0.80 and remains negative for several quarters on both sides −0.75 at ±1, about −0.71 at ±2, and still below −0.45 at ±4 to ±5. The correlation approaches zero around seven quarters and turns modestly positive only at longer horizons 0.15 to 0.28 by +8 to +10 and 0.10 to 0.26 by −8 to −10. This inverse comovement is consistent with banks raising TIR when term inflows weaken or when system liquidity tightens, which depresses TIM growth in the near term despite the higher posted rate.

Table 3. Discrete Threshold Regression Results for SIR on SAV (Sample 2004Q1–2024Q4, N=84)

Dependent Variable: SAV Method: Discrete Threshold Regression Sample: 2004Q1 2024Q4 Included observations: 84 Selection: Trimming 0.15, Max. thresholds 5, Sig. level 0.05 Threshold variable: SIR				
Variable	Coefficient	Std. Error	t-Statistic	Prob.
SIR < 4.75671 – 46 obs				

World Economics & Finance Bulletin (WEFB)
Available Online at: https://www.scholarexpress.net
Vol. 51, October 2025
ISSN: 2749-3628

SIR	-0.994301	0.716256	-1.388191	0.1689
C	4.914945	2.746757	1.789363	0.0773
4.75671 <= SIR – 38 obs				
SIR	1.894952	0.209811	9.031730	0.0000
C	-5.866294	1.374121	-4.269124	0.0001
R-squared	0.722916	Mean dependent var		3.408613
Adjusted R-squared	0.712525	S.D. dependent var		3.837617
S.E. of regression	2.057602	Akaike info criterion		4.327407
Sum squared resid	338.6981	Schwarz criterion		4.443161
Log likelihood	-177.7511	Hannan-Quinn criter.		4.373939
F-statistic	69.57373	Durbin-Watson stat		1.983085
Prob(F-statistic)	0.000000			

Table 3 presents a clear regime shift in the sensitivity of savings-deposit growth to the savings rate. The estimated threshold for SIR is 4.75671, splitting the sample into a low-rate regime with 46 observations and a high-rate regime with 38 observations. In the low-rate regime the slope is negative and statistically insignificant −0.9943 with $p=0.1689$, while the intercept is positive and marginal 4.9149 with $p=0.0773$. This implies that when remuneration on savings is below the threshold, quarterly savings growth hovers around a modest baseline and is not meaningfully moved by small rate changes. In the high-rate regime the slope turns large and precisely estimated 1.89495 with $p<0.001$, and the intercept is negative and significant −5.8663 with $p<0.001$, indicating that once the rate crosses the threshold, each one-percentage-point increase in SIR is associated with roughly a 1.9-point rise in savings growth, after accounting for the regime shift captured by the intercept. Model fit is strong $R^2=0.723$ with adjusted $R^2=0.713$ and a low standard error of 2.058. The F-statistic confirms overall significance $p<0.001$, and the Durbin–Watson statistic is near two 1.983, consistent with white-noise residuals. Financially, these estimates show an economically relevant floor effect. Modest rate tweaks below about 4.76 do little for savings mobilization, while rate actions above that level produce material and predictable increases in inflows.

Table 4. Threshold Specification Summary for the SAV–SIR Model

Discrete Threshold Specification			
Description of the threshold specification used in estimation			
Summary			
Threshold variable: SIR			
Estimated number of thresholds: 1			
Method: Bai-Perron tests of L+1 vs. L sequentially determined			
thresholds			
Maximum number of thresholds: 5			
Threshold data value: 4.75671062203			
Adjacent data value: 4.61603181322			
Threshold value used: 4.75671			
Current threshold calculations:			
Multiple threshold tests			
Bai-Perron tests of L+1 vs. L sequentially determined			
thresholds Sample: 2004Q1 2024Q4 Included observations: 84 Threshold variable: SIR			
Threshold varying variables: SIR C			
Threshold test options: Trimming 0.15, Max. thresholds 5, Sig.			
level 0.05			
Sequential F-statistic determined thresholds:			1
		Scaled	Critical

World Economics & Finance Bulletin (WEFB)
Available Online at: https://www.scholarexpress.net
Vol. 51, October 2025
ISSN: 2749-3628

Threshold Test	F-statistic	F-statistic	Value**
0 vs. 1 *	8.200037	16.40007	11.47
1 vs. 2	3.886509	7.773017	12.95
* Significant at the 0.05 level.			
** Bai-Perron (Econometric Journal, 2003) critical values.			
Threshold values:			
	Sequential	Repartition	
1	4.75671	4.75671	

Table 4 validates the single-threshold specification for the SAV–SIR relation. The sequential Bai–Perron test rejects the no-threshold null in favor of one threshold, with an F-statistic of 8.2000 and a scaled value of 16.4001 that exceeds the 5 percent critical value of 11.47. The test for an additional threshold does not reject, with a scaled statistic of 7.7730 below the 12.95 critical value. The estimated cut-off is stable across sequential and repartition calculations at 4.75671, with trimming at 0.15 ensuring sufficient data on both sides of the split. Together these results indicate one economically and statistically meaningful break in slope, aligning with the interpretation that savings behavior changes once the posted rate passes a well-defined remuneration floor.

Table 5. Discrete Threshold Regression Results for TIR on TIM (Sample 2004Q1–2024Q4, N=84)

Dependent Variable: TIM Method: Discrete Threshold Regression Sample: 2004Q1 2024Q4 Included observations: 84 Selection: Trimming 0.15, Max. thresholds 5, Sig. level 0.05 Threshold variable: TIR				
Variable	Coefficient	Std. Error	t-Statistic	Prob.
TIR < 6.921636 – 56 obs				
TIR	10.94389	1.498964	7.300974	0.0000
C	-56.14449	8.398852	-6.684782	0.0000
6.921636 <= TIR – 28 obs				
TIR	0.043075	0.739970	0.058211	0.9537
C	4.512516	6.591913	0.684553	0.4956
R-squared	0.399911	Mean dependent var		4.801112
Adjusted R-squared	0.377407	S.D. dependent var		9.279048
S.E. of regression	7.321590	Akaike info criterion		6.865980
Sum squared resid	4288.455	Schwarz criterion		6.981733
Log likelihood	-284.3712	Hannan-Quinn criter.		6.912512
F-statistic	17.77116	Durbin-Watson stat		1.801941
Prob(F-statistic)	0.000000			

Table 5 shows a different regime pattern for time deposits. The estimated threshold for TIR is 6.921636, generating a low-rate regime with 56 observations and a high-rate regime with 28 observations. When TIR is below the threshold, the slope is large, positive, and highly significant 10.9439 with p<0.001, paired with a negative intercept −56.1445 with

World Economics & Finance Bulletin (WEFB)
Available Online at: https://www.scholarexpress.net
Vol. 51, October 2025
ISSN: 2749-3628

$p<0.001$. This combination implies that in a low-rate environment small upward moves in TIR are associated with strong increases in time-deposit growth, consistent with banks using price to stimulate term placements from a weak base. Once TIR moves into the high-rate regime, the slope collapses to near zero 0.0431 with $p=0.954$ and the intercept becomes small and imprecise 4.5125 with $p=0.496$. In that regime, raising already high rates brings no incremental volume, which is consistent with saturation, rollover defense, or liquidity stress periods when posted rates are high but new net inflows remain subdued. Fit is moderate $R^2=0.400$ with adjusted $R^2=0.377$ and a standard error of 7.322, which is expected given the lumpiness of term-deposit movements. The model is jointly significant F $p<0.001$ and the Durbin–Watson statistic near two 1.802 supports well-behaved residual dynamics.

Table 6. Threshold Specification Summary for the TIM–TIR Model

Discrete Threshold Specification			
Description of the threshold specification used in estimation			
Summary			
Threshold variable: TIR			
Estimated number of thresholds: 1			
Method: Bai-Perron tests of L+1 vs. L sequentially determined			
thresholds			
Maximum number of thresholds: 5			
Threshold data value: 6.92163692824			
Adjacent data value: 6.9			
Threshold value used: 6.921636			
Current threshold calculations:			
Multiple threshold tests			
Bai-Perron tests of L+1 vs. L sequentially determined			
thresholds			
Sample: 2004Q1 2024Q4 Included observations: 84 Threshold variable: TIR			
Threshold varying variables: TIR C			
Threshold test options: Trimming 0.15, Max. thresholds 5, Sig.			
level 0.05			
Sequential F-statistic determined thresholds:			1
		Scaled	Critical
Threshold Test	F-statistic	F-statistic	Value**
0 vs. 1 *	24.38885	48.77771	11.47
1 vs. 2	4.431292	8.862585	12.95
* Significant at the 0.05 level.			
** Bai-Perron (Econometric Journal, 2003) critical values.			
Threshold values:			
	Sequential	Repartition	
1	6.921636	6.921636	

Table 6 confirms the single-threshold characterization for the TIM–TIR model. The Bai–Perron 0-vs-1 test is decisively significant with a scaled statistic of 48.7777 above the 11.47 critical value, while the 1-vs-2 test does not support an additional break with a scaled statistic of 8.8626 below 12.95. The threshold is tightly estimated at 6.921636 under both sequential and repartition procedures. With trimming at 0.15 and threshold-varying intercept and slope, the evidence points to one economically meaningful change in the price–quantity mapping for time deposits that separates a responsive low-rate regime from an inelastic high-rate regime.

Table 7. Residual Diagnostics for the Threshold Models normality, autocorrelation, and heteroskedasticity

World Economics & Finance Bulletin (WEFB)
Available Online at: https://www.scholarexpress.net
Vol. 51, October 2025
ISSN: 2749-3628

Model	Diagnostic test	Null hypothesis	Result	Decision (5%)
SAV on SIR threshold model	Jarque–Bera normality	Residuals are normally distributed	p-value ≥ 0.10	Fail to reject. Normality holds
SAV on SIR threshold model	Breusch–Godfrey LM autocorrelation (lag 1)	No serial correlation	p-value ≥ 0.10	Fail to reject. No autocorrelation
SAV on SIR threshold model	Breusch–Godfrey LM autocorrelation (lag 4)	No serial correlation up to lag 4	p-value ≥ 0.10	Fail to reject. No autocorrelation
SAV on SIR threshold model	Ljung–Box Q(4)	No autocorrelation up to lag 4	p-value ≥ 0.10	Fail to reject. No autocorrelation
SAV on SIR threshold model	Breusch–Pagan	Homoskedastic residuals	p-value ≥ 0.10	Fail to reject. Homoskedasticity holds
SAV on SIR threshold model	White	Homoskedastic residuals and correct specification	p-value ≥ 0.10	Fail to reject. Homoskedasticity holds
TIM on TIR threshold model	Jarque–Bera normality	Residuals are normally distributed	p-value ≥ 0.10	Fail to reject. Normality holds
TIM on TIR threshold model	Breusch–Godfrey LM autocorrelation (lag 1)	No serial correlation	p-value ≥ 0.10	Fail to reject. No autocorrelation
TIM on TIR threshold model	Breusch–Godfrey LM autocorrelation (lag 4)	No serial correlation up to lag 4	p-value ≥ 0.10	Fail to reject. No autocorrelation
TIM on TIR threshold model	Ljung–Box Q(4)	No autocorrelation up to lag 4	p-value ≥ 0.10	Fail to reject. No autocorrelation
TIM on TIR threshold model	Breusch–Pagan	Homoskedastic residuals	p-value ≥ 0.10	Fail to reject. Homoskedasticity holds
TIM on TIR threshold model	White	Homoskedastic residuals and correct specification	p-value ≥ 0.10	Fail to reject. Homoskedasticity holds

Table 7 reports diagnostic tests that support the reliability of inference in both threshold models. Jarque–Bera normality tests fail to reject for the residuals of SAV on SIR and TIM on TIR $p \geq 0.10$, which aligns with the near-two Durbin–Watson values reported in the estimation tables. Breusch–Godfrey tests at lag 1 and lag 4 and Ljung–Box Q 4 all fail to reject for both models $p \geq 0.10$, indicating no residual autocorrelation up to four quarters. Breusch–Pagan and White tests also fail to reject $p \geq 0.10$, suggesting homoskedastic residuals and no misspecification captured by these diagnostics. These outcomes imply that standard errors are valid, that the estimated regime slopes and intercepts are not artifacts of serial correlation or heteroskedasticity, and that the economic interpretations drawn from the threshold estimates rest on well-specified models.

CONCLUSIONS:

Using quarterly Iraqi data for 2004-2024, we show regime-dependent price-quantity relationships that vary by product. It finds that interest rates spike early, decline and stabilise, and deposit growth becomes less volatile over time. Savings deposits are contemporaneously and short-lead positively associated with the savings rate, as would be consistent with rapidly adjusting portfolios. Time deposits exhibit a negative short-term comovement with their posted rate, consistent with supply-driven pricing and rollover defence in times of restricted liquidity. Threshold estimation formalizes these patterns. For savings, the estimated floor at SIR = 4.75671 isolates an inelastic low-rate regime from a high-rate regime

World Economics & Finance Bulletin (WEFB)
Available Online at: https://www.scholarexpress.net
Vol. 51, October 2025
ISSN: 2749-3628

with a large slope and good model fit at SIR ~ 1.895. These results imply that, although for rates below this threshold, SIR cannot mobilize savings growth, for rates above it, rate actions provide predictable inflows. For the case of time deposit, the cutoff point where TIR = 6.921636 indicates a responsive low-rate regime characterized by high elasticity equal to 10.944 and an unresponsive high-rate regime where the slope is effectively zero. These results suggest that banks should engage in savings pricing only when the policy/administrated rate can be maintained above the savings floor, and should use the time-deposit price aggressively only when TIR is below the threshold, using non-price instruments when rates are already high. The long exposure to the term premium is conducive to maturity transformation, but the concentration of the volume risk in episodic TIM spikes raises the need for liquidity buffers, and for a calibrated campaign design. Residual diagnostics confirm the specifications, with zero serial correlation, homoskedastic errors and residual normality, providing a more robust reading of the coefficients of the regime as causal. These results can be further enhanced in future work by including controls for macro shocks and for institutional interventions and by testing multi-threshold or duration dependent mechanisms that capture rollover dynamics in an explicit manner.

REFERENCE

1- Al-Ani, I. M. A. (2002). Integration of international financial markets: Causes and implications for the global economy. Bayt Al-Hikma.
2- Al-Azzawi, M. A.-W., & Khamis, A. S. M. (2010). Financial crises, old and new: Causes, consequences, and lessons learned. Athraa Publishing and Distribution.
3- Al-Dulaimi, A. F. I. (1990). Money and banking. Dar Al-Hikma for Printing and Publishing.
4- Al-Himyari, B. A. H. J. (2006). The effect of cash flow management on banking performance: A comparative analytical study between Iraqi and Jordanian private commercial banks (Master's thesis, University of Karbala).
5- Al-Sayrfi, M. A. F. (2013). Bank management. Dar Al-Manahij.
6- Al-Shammari, S. R. (2009). Bank management: Reality and practical applications. Dar Safa.
7- Bai, J., & Perron, P. (2003a). Computation and analysis of multiple structural change models. Journal of Applied Econometrics, 18(1), 1–22.
8- Bai, J., & Perron, P. (2003b). Critical values for multiple structural change tests. The Econometrics Journal, 6(1), 72–78.
9- Bikker, J. A., & Gerritsen, D. F. (2018). Determinants of interest rates on time deposits and savings accounts: Macro factors, bank risk, and account features. International Review of Finance, 18(2), 169–216.
10- Box, G. E. P., & Jenkins, G. M. (1976). Time series analysis: Forecasting and control. San Francisco, CA: Holden-Day.
11- Breusch, T. S. (1978). Testing for autocorrelation in dynamic linear models. Australian Economic Papers, 17(31), 334–355.
12- Breusch, T. S., & Pagan, A. R. (1979). A simple test for heteroscedasticity and random coefficient variation. Econometrica, 47(5), 1287–1294.
13- Cochran, J. A. (1971). Money, banking and the economy (2nd ed.). The Macmillan Company.
14- Dai, Z., Xu, L., Krishnamurti, C., & Lu, Z. (2025). Negative interest rates and shadow banking. The British Accounting Review, 101681.
15- Das, A., & Das, P. (2002, May 6). Rate of interest on term deposits: A micro level study. Indian Statistical Institute Working Paper ISID/MS/2002/13.
16- Dickey, D. A., & Fuller, W. A. (1981). Likelihood ratio statistics for autoregressive time series with a unit root. Econometrica, 49(4), 1057–1072.
17- Godfrey, L. G. (1978). Testing for higher order serial correlation in regression equations. Econometrica, 46(6), 1303–1313.
18- Hansen, B. E. (2000). Sample splitting and threshold estimation. Econometrica, 68(3), 575–603.
19- Howells, P., & Bain, K. (2008). The economics of money, banking and finance (4th ed.). FT Prentice Hall.
20- Jarque, C. M., & Bera, A. K. (1987). A test for normality of observations and regression residuals. International Statistical Review, 55(2), 163–172.
21- Kwiatkowski, D., Phillips, P. C. B., Schmidt, P., & Shin, Y. (1992). Testing the null hypothesis of stationarity against the alternative of a unit root. Journal of Econometrics, 54(1-3), 159–178.
22- Ljung, G. M., & Box, G. E. P. (1978). On a measure of lack of fit in time series models. Biometrika, 65(2), 297–303.
23- Mirea, M., Florea, I. M., & Aivaz, K. A. (2019). The impact of the interest rate and the income of the households on the dynamics of bank deposits. Ovidius University Annals, Economic Sciences Series, 19(2), 812–818.
24- Nashour, I. K. (2021). Analysis of the structure of deposits in the Iraqi banking system and its influencing factors. Journal of North African Economies, 17(25), 1–22.

World Economics & Finance Bulletin (WEFB)
Available Online at: https://www.scholarexpress.net
Vol. 51, October 2025
ISSN: 2749-3628

25- Ngerebo-A., T. A., & Lucky, L. A. (2016). Interest rates and deposit money banks' profitability: Evidence from Nigeria (1980–2014). International Journal of Empirical Finance, 5(1), 22–35.
26- Phillips, P. C. B., & Perron, P. (1988). Testing for a unit root in time series regression. Biometrika, 75(2), 335–346.
27- Srivastava, N., Tripe, D., Haq, M., & Yuen, M. K. (2025). Does competition affect bank deposits? Finance Research Letters, 107710.
28- Thomas, L. L. B. (2006). Money, banking and financial markets. South-Western, Thomson.
29- Tran, D. V., Hussain, N., Nguyen, D. K., & Nguyen, T. D. (2024). How do depositors respond to banks' discretionary behaviors? Evidence from market discipline, deposit insurance, and scale effects. International Review of Financial Analysis, 93, Article 102?
30- White, H. (1980). A heteroskedasticity-consistent covariance matrix estimator and a direct test for heteroskedasticity. Econometrica, 48(4), 817–838.