

RESEARCH ARTICLE

The Impact of the Application of the Electronic Platform (FITR) on the Components of the Balance Sheet of the Central Bank of Iraq: An Econometrics Study**Wisam Neamah Rageeb**

Faculty of Administration and Economics, University of Kufa, Iraq

ABSTRACT

The purpose of this research is to assess the effect of the central bank's use of the electronic platform FITR for its financial transactions on the different parts of the Balance Sheet of the Central Bank of Iraq through an economic model. Due to the restrictive measures imposed upon the Iraqi banking system by America, the Iraqi banks were forced to begin utilizing electronic platforms as a means of conducting their financial business; especially regarding foreign transfers, letters of credit, and other financial matters associated with traveling abroad for medical care or education. Upon implementation of the FITR electronic platform by the Central Bank of Iraq there was a noticeable effect from the application of the platform upon each side of the Central Bank of Iraq's Balance Sheet. In addition, the problem statement can be identified based upon one question: What are the effects of the application of the FITR electronic platform upon the components of the Balance Sheet of the Central Bank of Iraq? The objective of this research is to determine and measure the degree to which the FITR electronic platform affects financial transactions and monetary stability in relation to the Central Bank of Iraq's Balance Sheet. Based upon a statistically significant assumption, the hypothesis states that there exists a statistically significant relationship between the FITR electronic platform and the components of the Balance Sheet of the Central Bank of Iraq. Through the utilization of econometric models and statistical analyses, this research will evaluate the impact of the electronic platform on monetary transactions and provide information regarding how cash dollars have been distributed to travelers. As a result of the above mentioned findings, it has been determined that the electronic platform has contributed positively toward increased transparency and regulation of foreign exchange transactions. Also, based upon the findings, it has been determined that the FITR electronic platform has affected the composition of the Central Bank's assets and liabilities.

Keywords: electronic platform - components of the balance sheet - ARDL model.**ARTICLE INFO**

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1.0 INTRODUCTION**1.1 Context and the Electronic Platform (FITR)**

Significant changes have been occurring in the banking sector recently with regards to advances in technology, global financialization and the use of electronic platforms for conducting monetary/banking transactions. Banks of all types are increasingly implementing financial technology applications and digital systems as a means of creating greater transparency, efficiency and government regulation of the banking system (Khudair et al., 2023). Due to international financial constraints and regulatory compliance, the banking sector in Iraq has encountered a great deal of stress; specifically with regard to foreign currency transfer regulations and anti-money laundering practices. As a consequence, the Central Bank of Iraq implemented an electronic platform called FITR for regulating external transfers, documentary credits and cash dollar sales for travel, medical treatment and education. The implementation of the FITR platform was a substantial step towards digital transformation in Iraq's monetary and banking activities.

Digital financial systems are being utilized as a key tool for increasing governance of banking, increasing quality of financial reports and improving the efficiency of supervisors. Research indicates that the digital transformation process can be used to increase bank performance, increase operational transparency and reduce financial risk via improved monitoring/control processes (Saleh et al., 2025). Additionally, research has indicated that the utilization of IT governance controls in Iraqi banks has had a positive effect upon the accuracy/quality of reported financial data/accounting information (Ibrahim, 2024). These digital platforms promote financial stability by providing for faster communication/data sharing between entities, facilitate quicker settlement processes and provide improved efficiency to internal banking supervisory processes (Al-Taei, 2021). The balance sheet of a central bank provides insight into the type of monetary policy operations conducted by the central bank and the types of financial assets/liabilities held within the economy. Monetary instruments employed by central banks along with foreign reserve holdings, sale of currency and inter-bank transfers significantly affect the composition of the central bank's balance sheet.

The Central Bank of Iraq has implemented electronic systems for managing liquidity, foreign exchange operations and banking supervision. This development has impacted upon the measured effects on the central bank's balance sheet components; namely foreign assets/cash reserves/liabilities/deposits from banks (Gaeem & Muhammad, 2025). Moreover, the implementation of digital transformation processes to bank operations have provided significant implications regarding bank indicatives such as capital adequacy/liquidity/stability (Al-Murshidi & Mahdi, 2024). Although, there has been a significant emphasis placed on utilizing electronic financial platforms in Iraq; however, there exists a dearth of empirical studies examining the effects of FITR electronic platform upon balance sheet components of the Central Bank of Iraq. Most prior studies have examined digital transformation/electronic payment systems/banking supervision independently and did not empirically investigate the econometric relationship between the FITR electronic platform and balance sheet components of the Central Bank of Iraq. Therefore, this study will address this research void by studying the effect of the FITR electronic platform upon the structural characteristics of the balance sheet of the Central Bank of Iraq using econometric techniques and quantitative analytical tools. This study is relevant because it examines the efficacy of electronic financial platforms in enhancing monetary control/financial transparency within Iraq. Additionally, this study contributes to our knowledge regarding how digital transformation policies affect operational structure of central banks in developing countries. The premise of this study is based on a hypothesis that there exists a statistically significant relationship between the implementation/use of the FITR electronic platform and components of the balance sheet of the Central Bank of Iraq. Therefore, this study will examine the degree to which the FITR platform affects bank operations, foreign exchange management and financial position of the Central Bank of Iraq.

1.2 PROBLEM STATEMENT.

Aims of the Study

This research is based upon assessing the use of FITR electronic platform to assess balance sheet items for the Central Bank of Iraq. In particular this research will have three specific goals:

1. To establish whether there are any effects from the use of the FITR electronic platform on the assets and liabilities elements of the central bank's balance sheet.
2. To investigate how the FITR electronic platform operates with respect to all of the elements contained within the central bank's balance sheet.
3. To determine what was changed by way of transfer and cash sales when technical and electronic means were employed as a result of implementing the FITR platform.

1.3 RESEARCH OBJECTIVES.

Study goals will be as follows:

1. Identify why the FITR e-platform was implemented in the foreign currency sales window of the CBI.
2. Determine how much the FITR has affected foreign assets and currency issues on the balance sheet of the CBI.
3. Explain the operational functions of the FITR e-platform, including major improvements and upgrades made since it has been used by the CBI.

2.0 LITERATURE REVIEW.

Digital Financial Technologies Have Dramatically Changed the Operational Framework of Banks Globally and for Central Banks. With the emergence of new digital financial platforms, there is now increased focus on improving transparency, speed in transactions, and efficiency in supervision and regulation. Arner et al. (2020) indicate that FinTech has changed how banking functions by creating greater efficiencies, lower transactional cost, and better tracking of financial flow. Additionally, Frost et al. (2019) suggest that the shift toward digital banking systems creates stronger means for the transmission of monetary policy and increases the effectiveness of central bank operations, especially in developing countries that continue to evolve their financial reform programs.

Additionally, the development of electronic banking systems has led to improved financial governance and greater transparency of financial statements. Past research suggests that the incorporation of information technology into banking functions enhances the accuracy of financial reporting and strengthens internal controls (Al-Hiyali & Al-Mamary, 2020). Specifically, electronic platforms allow for real time review of all banking activity, thus decreasing risk associated with money laundering, fraud and other illicit activity. As a result, these developments have prompted many central banks to implement electronic transaction systems as part of broader plans for modernizing the financial sectors of their respective countries.

In Iraq, the banking sector has undergone significant transformations because of restrictions placed by international organizations on foreign currency transactions as well as compliance requirements placed on foreign currency transactions. To address these issues, the Central Bank of Iraq implemented an electronic platform called FITR to monitor foreign transfers, documentary credit transactions, and cash sale transactions related to travel, medical treatment and education. The goal of this platform was to provide greater transparency while ensuring that all parties complied with international banking standards and anti-money laundering regulations (Central Bank of Iraq, 2024). Al-Janabi and Hasan (2023) indicated that the implementation of electronic systems in Iraqi banking institutions helped create more efficient operating environments and reduce bureaucratic complexity when conducting foreign exchange transactions.

A number of empirical studies have investigated relationships between digital banking systems and performance indicators of banks. Khudair et al. (2023) indicated that financial control technologies positively affect banking business environments by providing supervisors, customers and investors with greater transparency and accountability, which in turn enhance financial stability. In addition, Saleh et al. (2025) demonstrated that digital transformation technologies lead to significant improvements in banking sector performance among Iraqi private banks through enhanced operational efficiency and better

management practices. These results are consistent with the idea that electronic platforms may directly effect the structures and performance of banks including those of central banks.

One indicator of central bank operations and financial stability is its balance sheet. Variations in foreign reserves, domestic assets and liabilities, and currency issued are reflective of the success of monetary policy instruments used by central banks as well as the state of the country's banking system (Bindseil, 2014). For example, changes in the way a central bank manages foreign exchange operations may be reflected in the balance sheet in terms of foreign assets and reserve management; likewise changes in currency circulation may also impact the balance sheet. Research by Stella (2008) and Archer and Moser-Boehm (2013) illustrated that a central bank's balance sheet is very responsive to both monetary policy tools and technological advancements in banking operations.

Furthermore, digitalization in banking systems has increasingly become connected to the management of central bank balance sheets. Electronic transaction systems help to streamline liquidity management processes and decrease operational risks from traditional cash based systems (Adrian & Mancini-Griffoli, 2021). Furthermore, digital financial systems support exchange rate stability in emerging economies and enhance oversight over foreign currency markets in developing economies facing high levels of financial instability and pressure from outside economic factors (IMF, 2023).

Although the importance of digital financial platforms continues to grow globally, few empirical analyses exist about the effects of the FITR electronic platform on asset-liability items included within the Central Bank of Iraq's Balance Sheet. Many past studies focused on the impact of digital transformation on electronic payment systems or evaluated banking sector efficiency without investigating an empirically quantifiable relationship between application of electronic platforms and variable items included within a central bank's balance sheet. This study will seek to fill this knowledge gap by utilizing econometric models and quantitative analytical techniques to investigate whether applications of the FITR Platform were effective in changing asset-liability items of the Central Bank of Iraq.

Previous research has shown that electronic financial platforms can serve a vital function to promote transparency, enhance monetary control, and support financial stability. Although previous studies clearly illustrate the potential impacts of electronic financial platforms on monetary policy functioning and central bank operations, little empirical research exists concerning specific impacts on structural characteristics of central banks' balance sheets specifically in developing countries such as Iraq. This study aims to add to previous literature by producing an empirical evaluation concerning how applications of the FITR Platform influenced balance sheet items at the Central Bank of Iraq.

3.0 METHODOLOGY

This study uses both the analytical and econometric approaches to assess the effect of FITR electronic platform use on the balance sheet items of the Central Bank of Iraq. The analytical method is used to outline the theoretical background of FITR; how it works; and how it impacts foreign currency transaction regulation and banking activities. The econometric approach will be utilized to quantify the relationship between FITR and the Central Bank of Iraq's balance sheet components utilizing quantitative and statistical analysis techniques. The study utilizes the Autoregressive Distributed Lag (ARDL) model to investigate the short-run and long-run associations between study variables. The ARDL model was chosen due to its applicability to small samples and capacity to analyze variables that have been integrated to varying levels ($I(0)$ and $I(1)$) regardless of whether they have equal order stationarity (Pesaran et al., 2001). Additionally, this model allows researchers to determine both static and equilibrium relationships between dependent and independent variables.

The problem of research is directed towards determining the implications of implementing an electronic platform (FITR) on the balance sheet of the Central Bank of Iraq. Therefore, this study will seek to address the following two problems:

What are the implications of utilization of the FITR electronic platform on the various components of the balance sheet of the Central Bank of Iraq?

Is there any association between the operation of the FITR electronic platform and the asset-liability ratio of the Central Bank of Iraq?

Prior to the establishment of electronic platforms through the FITR system, what changes occurred in the volume of transfer payments made via the banking sector?

There exists one main hypothesis in this research study:

H_0 : There is no statistical correlation between the implementation of FITR electronic platform and the various components of the balance sheet of the Central Bank of Iraq.

H_1 : There does exist a statistical correlation between the implementation of FITR electronic platform and the various components of the balance sheet of the Central Bank of Iraq.

Secondary data was collected for this study from various official sources. These include reports, statistical bulletins, annual financial stability reports, banking sector reports, and economic/financial statistics. Academic studies, journals, official regulations, as well as other materials related to the use of FITR electronic platform for conducting electronic banking in Iraq provided additional data.

In order to measure the impact of FITR on balance sheet components, ARDL model will be used. The ARDL model can be described as follows:

$$Y_t = \alpha_0 + \sum_{i=1}^p \alpha_i Y_{t-i} + \sum_{j=0}^q \beta_j X_{t-j} + \varepsilon_t$$

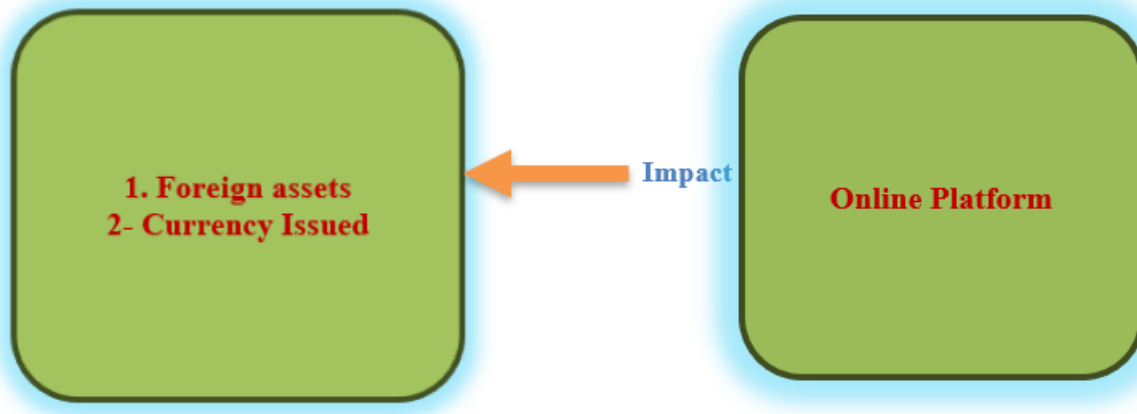
Where:

- Y_t represents the dependent variable (balance sheet components).
- X_t represents the independent variable (FITR electronic platform indicators).
- α_0 is the constant term.
- α_i and β_j represent the estimated coefficients.
- ε_t represents the error term.

Steps involved in employing ARDL methodology include unit roots test, selecting optimal lag lengths, bound tests for cointegration estimation, estimating long run parameters and finally performing an error correction model (ECM) to identify short-term dynamics and rate of convergence toward long-term equilibrium.

The study used the analytical and standard method using the ARDL model to find and analyze the results, as well as extract the growth rates of the balance sheet components. The research division into three topics, namely:

The theoretical framework of the electronic platform and the components of the balance sheet of the Central Bank of Iraq. The standard and analytical framework and finding the relationship between the two variables. Eighth: The hypothetical outline of the research:



Source: Prepared by the researcher

The theoretical framework of the electronic platform and the components of the balance sheet of the Central Bank of Iraq.

First: The Theoretical Framework of the Electronic Platform

Concept of the electronic platform: It is a specialized platform for the purposes of exchanging documents and data with all banks, which allows these banks to benefit from many services, including trading foreign currencies and stocks, and accessing the global capital markets with the aim of analyzing financial data to benefit from them in raising the level of efficiency of investment decisions and others¹.

Objectives of the Electronic Platform: The Electronic Platform aims to achieve the following²:

An opportunity for traders, investors, and business owners to fund their trade and financial business.

Regulate and control the process of foreign financial transfer and foreign trade financing.

Increasing cooperation between banks and achieving real competition.

Increasing its ability to diversify financial services for its customers.

Attract the commercial and financial operations available in the market.

Convert foreign currencies in real and regular manner.

Mechanism of the Electronic Platform: Procedures for Subscription to the Electronic Platform³:

Applications for bank customers wishing to purchase dollars for the purpose of financing their foreign imports shall be submitted through the platform, provided that the data related to the transfer process shall

¹) Central Bank of Iraq, Financial Operations and Debt Management Department, All Banks/Electronic Platform, Issue 6/2/2574 on 4/7/2022.

²) Central Bank of Iraq, Media Office, 20/6/2019.

³) Central Bank of Iraq, Department of Foreign Investments and Remittances, Foreign Currency Sale Window Section, External Transfer Controls for the Year 2023, No. 5/11/1083 on 19/2/2023.

include (the data of the customer requesting the transfer, the data of the end beneficiary, the data of the commercial list, the data of the intermediary bank and the correspondent) and this shall be recorded in the equivalent of dinars in the bank's current accounts opened with the Central Bank / the type of account allocated for subscriptions to the platform, provided that the bank is committed not to change the final beneficiary of the transfer process after subscribing to the platform.

The bank must strengthen the purchase order through the platform with the following attachments:

Invoice: Provided that it must have an effective date not exceeding 6 months from the date of creating the order on the platform and 12 months for commercial lists for the manufacture of machinery and production lines, which may be a preliminary, final, deferred payment list, or purchase contract.

An undertaking according to Form No. (1) attached to each application under which the Bank undertakes to verify the integrity and legitimacy of the sources of funds of its importing customers and to comply with the requirements of the Anti-Money Laundering and Combating the Financing of Terrorism Law No. 39 of 2015.

An undertaking according to Form (2) attached to each transfer request (Documentary Credit or External Transfer) that he has conducted the search, investigation and verification process of all parties related to the transfer process, including the ultimate beneficiary, on the local and international sanctions lists, especially the OFAC lists and the lists of freezing terrorist funds, when submitting the transfer request through the platform.

A deposit by the Instant Total Adjustments System (RTGS) in Iraqi Dinars is deposited in the account designated for subscriptions to the platform, provided that it is three working days before the date of execution of the sale or as decided by the Central Bank specifying the date and type of participation.

Obligations of banks participating in the electronic platform⁴:

Apply the KYC principle in accordance with the due diligence procedures set out in the Anti-Money Laundering and Combating the Financing of Terrorism Law No. 39 of 2015 and the relevant compliance controls.

Banks shall maintain their statements of accounts opened with correspondent banks, including details of account transactions that disclose the use of the amounts transferred by the Central Bank.

For the purposes of documentary credits and foreign remittances used to finance the import of legally permitted goods or services.

This is the only requirement to purchase the goods or provide the service (the commercial list provided on the Platform) and this list is the only requirement when creating a transfer request on the Platform.

Bill of lading (in the case of remittances for the import of goods), provided that the name of the transferred customer is mentioned either in the field of (the party to whom the goods are shipped) or (the party receiving the notification) or (under a contract between the customs broker and the buyer), provided that the bill of lading is issued from the same country to which the transfer was made, and if it is issued from a country other than the one to which the transfer was made, it is necessary to prove the relationship between

⁴ Ibrahim, Mustafa Mohammed, (2023), The Window of Selling Foreign Currency from the Transition Stage to the Stage of Regularity and Building a Real Economy in Iraq for the Period 2003-2022, A Standard Study, Tikrit Journal of Administrative and Economic Sciences, Vol. 19, Special Issue Part III, pp. 281-283.

the two parties (the recipient of the transfer and the issuer of the policy), and the bill of lading is the only requirement for the subsequent audit of the remittances.

Proof of receipt or provision of the service to the customer (in the case of transfers for the purposes of services) and the proof of service supply document shall be the only requirement for the subsequent audit of the transfer process.

Documentary Documents (for Importing Goods) These documents are the only requirement for subsequent audit of transfers by the Documentary Letter of Credit method.

This supports the Bank's conduct of searching, investigating and verifying all parties related to the transfers, including the beneficiary of the local and international sanctions lists, especially the OFAC lists and the lists of freezing terrorist funds, before the transfer process, provided that the process of searching and investigating the names of the relevant parties is carried out in English and Arabic.

The concept of the balance sheet: It is a financial statement consisting of two sides, namely assets and liabilities, and is at the level of companies or at the level of central banks, which clarifies the financial situation of the institution they represent at a specific time, which means that it is possible to create weekly, monthly, quarterly, semi-annual or annual balance sheets, but the balance sheet of companies differs from that of the Central Bank⁵:

The main objective of the central bank's budget is to ensure the stability of the financial system.

The central bank's budget system covers the entire financial system of the economy.

The assets and liabilities of the Central Bank are significantly different from their counterparts in companies.

Economic conditions affect the components of the central bank's budget, but this has little impact on the corporate budget.

The balance sheet of the Central Bank of Iraq: The balance sheet of the central banks shows the financial position of the central banks, and it is also one of the most important indicators that give a real picture of the nature of economic and monetary activity, and after the central banks have become the only responsible for the issuance of currency, as this entails a pledge to issue cash to individuals and other economic units, by maintaining the general level of prices by controlling the monetary base, and the balance sheet consists of two aspects, the first represents 6 Balance sheet analysis became more important after the global financial crisis of 2008, as central banks faced a number of questions that were not in the calculations of monetary policy, as monetary policy was often seen through the choice of one of the short-term operational objectives such as achieving exchange rate stability or the nominal interest rate, but after that crisis, there were more important issues for central banks, including the size of the appropriate balance for central banks, which is related to On the balance sheet.

⁵ Salem, Shahed Ali, Hussein, Abdul Rasool Ali, (2023), Classification of the Central Bank of Iraq in the Light of its Balance Sheet Structure for the Period 2003-2020, Journal of Administration and Economics, Vol. 41, No. 139, p. 130.

⁶ Ali, Ahmed Ibrihi, (2015), Monetary Economics: Facts, Theories and Policies, Dar Al-Kutub Distributors Publishers, First Edition, Karbala, p. 201.

Table (1) Balance Sheet of the Central Bank of Iraq

Assets	Liabilities
Foreign Assets	Liabilities for Non-Resident Entities
Gold Cash	Long-term loans
SDRs	Debts and other liabilities for less than a year
Overseas Deposits	Government Deposits in Local Currency
Treasury transfers to foreign governments	In foreign currency
Debt bonds for foreign governments	Total Government Deposits
Short-term facilities for non-residents	Requirements for Banks
Assets of currency swap agreements	Reserves
Total foreign assets	Mandatory reserves
Local Government Credit	Free Deposits
Government Debt Bonds	Monetary Policy Tools
Treasury Transfers	Central Bank Remittances
Total Credit to the Government	Total liabilities of banks
Other Loans	Currency Issued
Total Credit for Banking Institutions	Currency held in banks is mandatory and surplus
Total domestic credit	Total currency held in banks
Total Cash Assets	Total Cash Liabilities
Non-Cash Assets	Net maturity (capital and accumulation of net capitalized result)
Total Assets	Total Liabilities

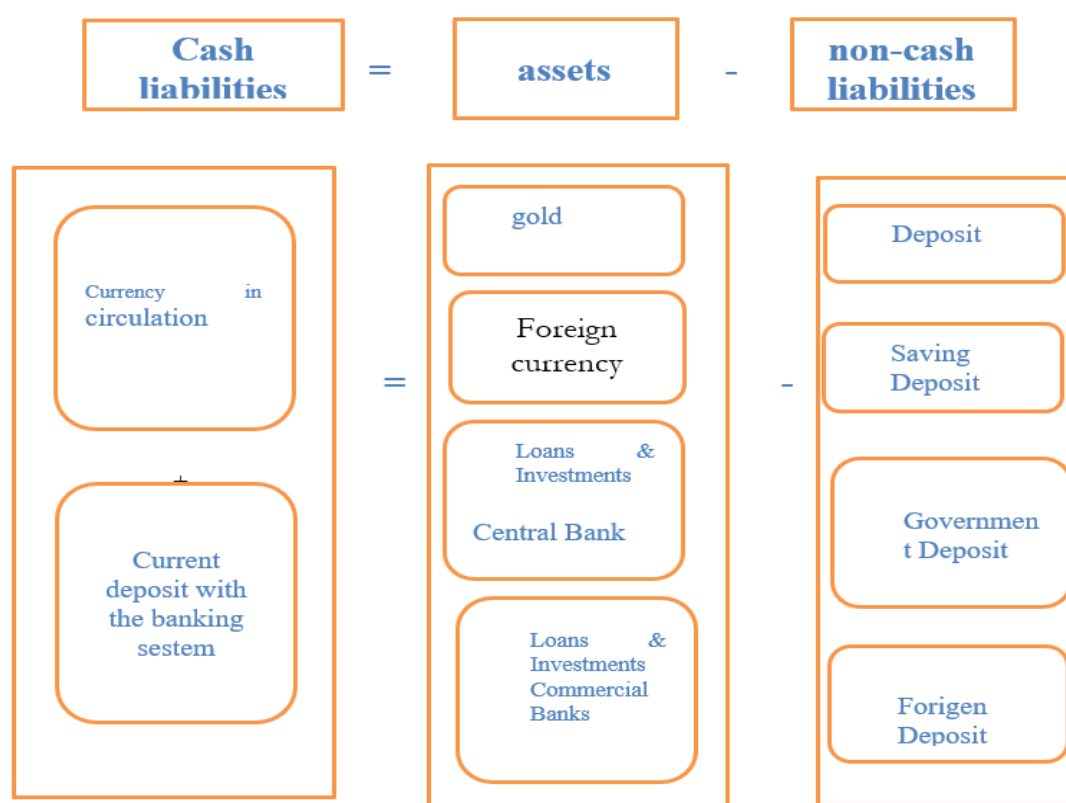


Table (2) Classification of the Balance Sheet Assets of the Central Bank of Iraq for the Year 2023

Month	Foreign assets	Treasury bills	loans to the private sector
January	72712733576	49172067	0
February	76470640662	49172068	0
March	89071021536	49084553	0
April	85603997883	49084553	0
May	83198710226	0	0
June	83262385027	0	0
July	96325923872	0	0
August	76857529931	0	0
September	77277710015	0	0
October	50476070999	0	0
November	75972325681	0	0
December	70635040014		

Source: Central Bank of Iraq, Financial Situation Tables, 2023.

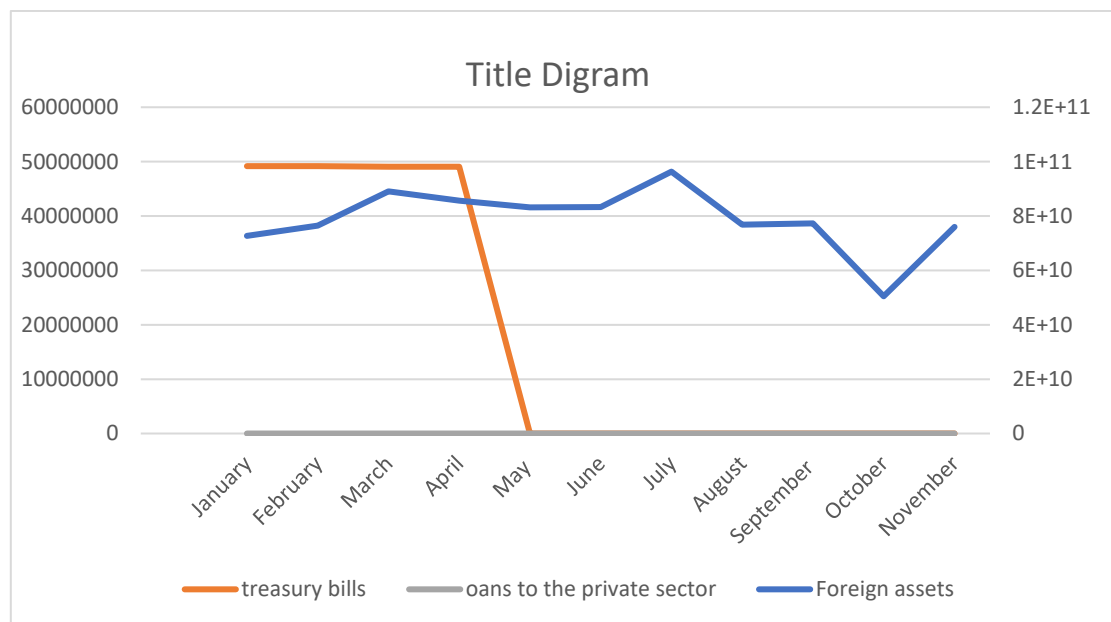
Figure (1) Classification of the Balance Sheet Assets of the Central Bank of Iraq for the Year 2023

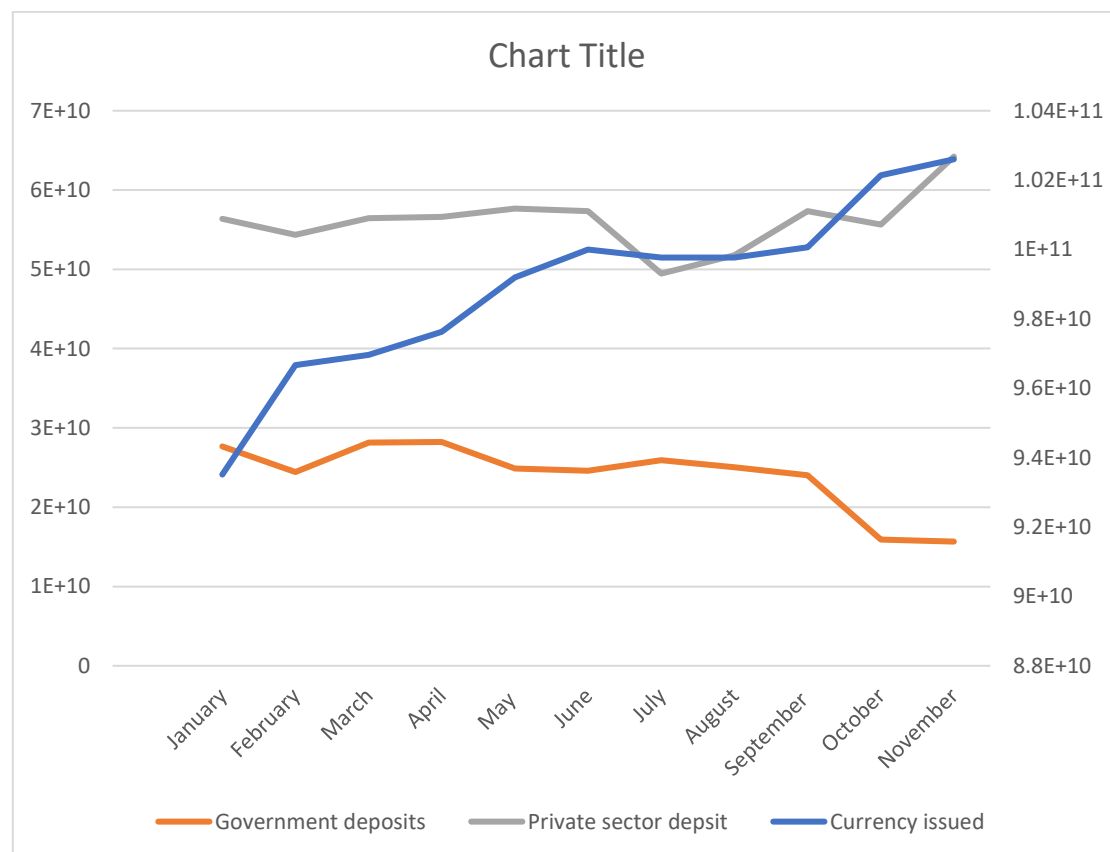
Figure: Prepared by the researcher based on the data of Table (2).

Table (3) Classification of Liabilities in the Balance Sheet of the Central Bank of Iraq for the Year 2023

Month	Currency issued	Government deposits	Private sector depsit
January	93511657040	27654368542	56354560138
February	96671481208	24426312907	54349419155
March	96964049949	28155094037	56459155512

April	97628797490	28227696505	56620993139
May	99193973276	24875971692	57681176572
June	99998328463	24587077942	57327968647
July	99769819156	25913445447	49466084440
August	99769121766	25058548508	51785702904
September	100060601188	24036402305	57326293161
October	102143621246	15933306813	55639188923
November	102601077839	15664850823	64216174398
December	103011482150	15928783670	74115333708

Figure (2) Classification of liabilities in the balance sheet of the Central Bank of Iraq for the year 2023



Source: Prepared by the researcher based on the data of Table (3).

Table (4) of the electronic platform for the year 2023

Month	Transfer (million dollars))	Cash (million dollars)
January	647	1106
February	978	1030

March	2522	1163
April	2938	844
May	2631	998
June	2827	673
July	2619	479
August	2109	738
September	1956	420
October	2469	312
November	1761	293
December	2265	310

Source: Central Bank of Iraq, Statistical Website, 2023.

Figure (3) The electronic platform for the year 2023

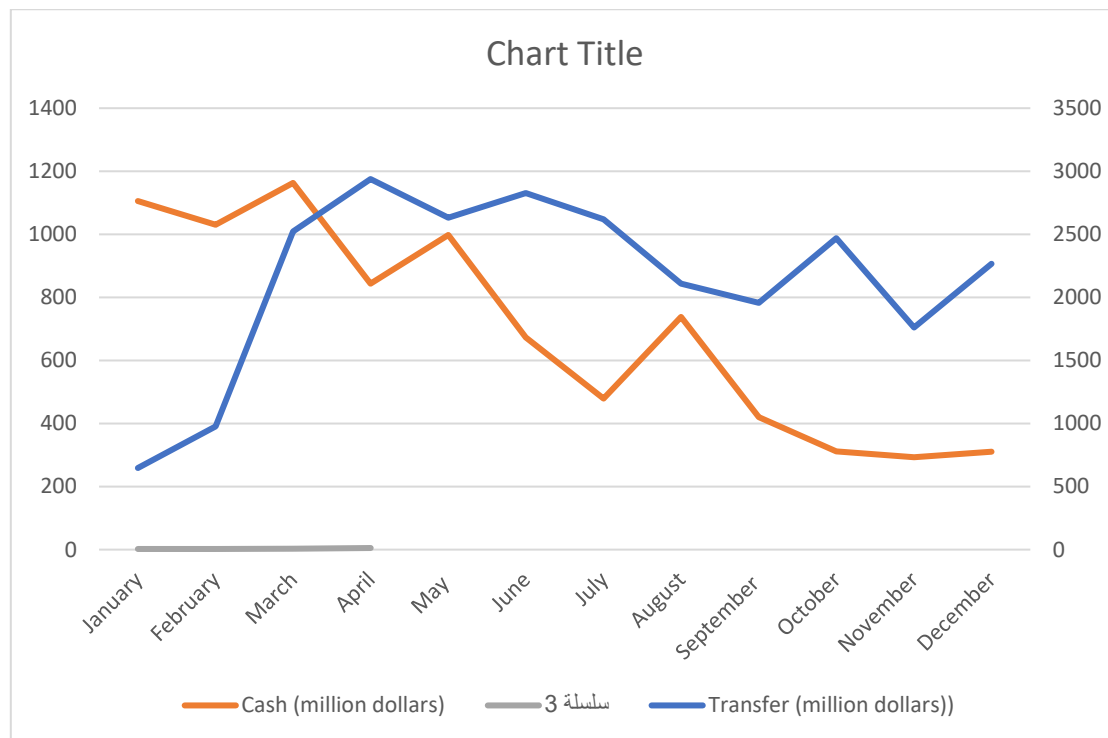


Figure: Prepared by the researcher based on the data of Table (4).

The Stability Test of Dickie Fuller and Phelps Peron: Table (5) shows the Phelps Peron test in two directions, the first through the level by direction, with direction and intersection, and without direction and intersection, as we find that there is no statistically significant effect between the electronic platform and the components of the balance sheet of the Central Bank of Iraq when comparing (5%), while with the first difference, we find that there is a statistically significant effect between the two variables, which means accepting the hypothesis, and this is in line with the economic theory that (the use of the electronic platform for it) It affected the components of the foreign currency, especially the issued currency IC , and this is explained in the table below with the constant, which amounted to (0.07) calculated in the first difference, which is higher than the tabular value (5%).

Table (5) Dickie Fuller's Extended Stability Test

UNIT ROOT TEST TABLE (ADF)								
At Level								
		DG	FA	IC	OR	SSD		
With Constant	t-Statistic	-2.7173	-2.3238	-0.5002	-1.8007	-1.5880		
	Prob.	0.1046	0.1829	0.8526	0.3591	0.4519		
		n0	n0	n0	n0	n0		
With Constant & Trend	t-Statistic	-3.4122	-2.7524	-1.6660	-1.8141	-1.3455		
	Prob.	0.1070	0.2434	0.6901	0.6252	0.8101		
		n0	n0	n0	n0	n0		
Without Constant & Trend	t-Statistic	-1.0295	-0.4321	-1.0674	-0.2277	0.4888		
	Prob.	0.2519	0.4976	0.2385	0.5789	0.8018		
		n0	n0	n0	n0	n0		
At First Difference								
		d(DG)	d(FA)	d(IC)	d(EP)	d(SSD)		
With Constant	t-Statistic	-4.5086	-4.3455	-2.9739	-2.1888	-2.7794		
	Prob.	0.0089	0.0110	0.0750	0.2211	0.0988		
		***	**	*	n0	*		
With Constant & Trend	t-Statistic	-4.1899	-5.3900	-2.8370	-3.2960	-2.8088		
	Prob.	0.0459	0.0115	0.2337	0.1313	0.2334		
		**	**	n0	n0	n0		
Without Constant & Trend	t-Statistic	-4.7318	-4.6210	-2.8356	-2.3854	-2.8964		
	Prob.	0.0004	0.0005	0.0102	0.0238	0.0091		
		***	***	**	**	***		
Notes: (*) Significant at the 10%; (**) Significant at the 5%; (***) Significant at the 1%. and (no) Not Significant								
*MacKinnon (1996) one-sided p-values.								

Source: Prepared by the researcher based on the outputs of the Eviwes program.13.

As for the Fiebles Peron test, it explains the strength of the effect between the two variables, at the level, we find that there is a weak effect between the two variables, which means that there is a clear effect, and this is in line with the economic theory that the more the electronic means of payment expand, the more they affect the components of the balance sheet, whether they are assets or liabilities, and this is clearly evident in the first difference of Table (6).

Table (6) Phelps Peron Stability Test

UNIT ROOT TEST TABLE (PP)						
At Level						
		DG	FA	IC	OR	SSD
With Constant	t-Statistic	-2.6919	-2.3183	-0.5002	-1.8258	-1.5880
	Prob.	0.1086	0.1844	0.8526	0.3488	0.4519
		n0	n0	n0	n0	n0
With Constant & Trend	t-Statistic	-5.7614	-2.7524	-1.5058	-2.9253	-1.3455
	Prob.	0.0060	0.2434	0.7564	0.1985	0.8101
		***	n0	n0	n0	n0
Without Constant & Trend	t-Statistic	-1.0145	-0.2104	-1.0674	-0.2502	0.6170
	Prob.	0.2573	0.5854	0.2385	0.5705	0.8319
		n0	n0	n0	n0	n0
At First Difference						
		d(DG)	d(FA)	d(IC)	d(EP)	d(SSD)
With Constant	t-Statistic	-9.5030	-4.3455	-2.9849	-2.1888	-2.7794
	Prob.	0.0000	0.0110	0.0739	0.2211	0.0988
		***	**	*	n0	*
With Constant & Trend	t-Statistic	-8.6163	-11.0119	-4.7462	-3.2960	-2.7689
	Prob.	0.0005	0.0001	0.0240	0.1313	0.2434
		***	***	**	n0	n0
Without Constant & Trend	t-Statistic	-6.9593	-4.6210	-2.8356	-2.3854	-2.8964
	Prob.	0.0000	0.0005	0.0102	0.0238	0.0091
		***	***	**	**	***

Source: Prepared by the researcher based on the outputs of the Eviwes program.13.

Table (7) below explains the effect between the electronic platform, which includes the sales of the window for the period from 1-11/2023 (cash-transfer) and the variable dependent on the components of the balance sheet of the Central Bank of Iraq for the same period with its assets and liabilities, which was shown to be the value of Prob(F-statistic) = 0.52 , which is higher than the tabular value (5%), which means that there is a strong effect between the two variables with a direct relationship between the two variables, so the Central Bank of Iraq resorted to the use of tools. The electronic payment in its assets and liabilities according to the three criteria below in the table, which are (Akaikk, Schwarz, Hannan-Quinn), and the value of Durbin-Watson stat = 2.35 was calculated, which means the strength of the effect between the two variables.

Table (7) Distributed Exponential Slowdown ModelARDL

Dependent Variable: PE				
Method: ARDL				
Date: 03/01/24 Time: 10:45				
Sample: 2023M02 2023M11				
Included observations: 10				
Dependent lags: 1 (Automatic)				
Automatic-lag linear regressors (0 max. lags): SSD IC FA DG				
Deterministics: Restricted constant and no trend (Case 2)				
Model selection method: Akaike info criterion (AIC)				
Number of models evaluated: 1				
Selected model: ARDL(1,0,0,0)				
Variable	Coefficient	Std. Error	t-Statistic	Prob.*
PE(-1)	0.423168	0.348496	1.214268	0.2914
SSD	-3.53E-06	8.61E-05	-0.041048	0.9692
IC	6.26E-06	1.04E-05	0.599110	0.5814
FA	-2.88E-07	2.83E-05	-0.010174	0.9924
DG	2.07E-05	3.80E-05	0.545421	0.6145
C	056.782	412.691	0.239487	0.8225
R-squared	0.549675	Mean dependent var		976.000
Adjusted R-squared	0.013231	S.D. dependent var		72.4714
S.E. of regression	76.9055	Akaike info criterion		6.15665
Sum squared resid	832804.	Schwarz criterion		6.33820
Log likelihood	74.78325	Hannan-Quinn criter.		5.95749
F-statistic	0.976495	Durbin-Watson stat		2.358584
Prob(F-statistic)	0.523799			
Note: p-values and any subsequent test results do not account for model selection.				

Source: Prepared by the researcher based on the results of the Eviwes program.13.

Fourth: Limits Test: This test shows the limits of the relationship between the two variables through the value of F-statistic = 0.81, which is a statistically significant direct relationship between the electronic platform and the assets and liabilities of the Central Bank of Iraq.

Table (8) Boundary Test

Null hypothesis: No levels relationship		
Number of cointegrating variables: 4		
Trend type: Rest. constant (Case 2)		
Sample size: 10		
Test Statistic		Value
F-statistic		0.812238

Source: Prepared by the researcher based on the results of the Eviwes program.13.

Fifth: Test the efficiency and integrity of the model: Table (9) explains the Heteroskedasticity Test: Breusch-Pagan-Godfrey, we find that the value of Prob(F-statistic) = 0.03 according to the three criteria (Akaike, Schwarz, Hannan-Quin) and the value of the Durbin-Watson stat, which means that there is an effect between the two variables due to the nature of the electronic payment methods used recently.

Table 9. Heteroskedasticity Test: Breusch-Pagan-Godfrey

Heteroskedasticity Test: Breusch-Pagan-Godfrey				
Null hypothesis: Homoskedasticity				
F-statistic	8.331198	Prob. F(5,4)		0.0307
Obs*R-squared	9.123883	Prob. Chi-Square(5)		0.1042
Scaled explained SS	1.013260	Prob. Chi-Square(5)		0.9615
Test Equation:				
Dependent Variable: RESID^2				
Method: Least Squares				
Date: 03/04/24 Time: 19:00				
Sample (adjusted): 2 11				
Included observations: 10 after adjustments				
Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	817452.6	658822.2	1.240779	0.2825
PE(-1)	-304.0591	52.03111	-5.843795	0.0043
IC	0.001956	0.001559	1.254806	0.2779
SSD	0.001445	0.012848	0.112448	0.9159
FA	0.000253	0.004224	0.059820	0.9552
DG	0.002794	0.005677	0.492152	0.6484
R-squared	0.912388	Mean dependent var		83280.4
Adjusted R-squared	0.802874	S.D. dependent var		27625.2
S.E. of regression	01063.1	Akaike info criterion		6.16859
Sum squared resid	0.09E+10	Schwarz criterion		6.35014
Log likelihood	124.8429	Hannan-Quinn criter.		5.96943
F-statistic	8.331198	Durbin-Watson stat		0.558778
Prob(F-statistic)	0.030688			

Source: Prepared by the researcher based on the results of the Eviwes program.13.

Conclusions and recommendations

Conclusions

The findings of this research indicate that the Foreign Currency Trading Room (FITR), the electronic trading room of the Central Bank of Iraq (CBI), plays a critical role in determining asset-liability trends on CBI's balance sheet and supports CBI's control over foreign currency purchases and sales. This study demonstrates that the central bank's balance-sheet items are the primary inputs to the FITR electronic platform because they represent all forms of monetary transactions in the Iraqi banking system; i.e., foreign-exchange reserve assets, government bonds held by the central bank, and lending to private banks and sectors. Also, the study confirms that these items were becoming more integrated into the electronic money transfer process after CBI implemented FITR. Additionally, this study highlights that using balance-sheet items to support FITR electronic money transfer activities led to shortening of the transaction time and cost reduction while enhancing security and transparency in foreign-currency transactions. Therefore, this study emphasizes the importance of digital transformation for improvement of monetary and financial supervision in Iraq. In conclusion, the economic data analysis shows a high degree of correlation between the FITR electronic money transfer platform and the balance-sheet components of the CBI during the period January-November 2023. The results of statistical tests show that values of Prob(F-statistic) = 0.52 are higher than the tabled 5% significance levels, indicating a highly significant relationship between the FITR-platform and the balance-sheet components. Additionally, DW statistic= 2.35 implies that there are no serial correlation issues and therefore indicates a reliable estimation of

relationships between the FITR-platform and the balance-sheet components. Moreover, this study finds that the CBI has been relying heavily on electronic payments and other digital tools for management of its assets and liabilities, based on Akaike, Schwartz, and Hannan-Quinn model selection criteria. Thus, it can be inferred that reliance on electronic platforms will increase in future as part of implementation of monetary policies and enhancing effectiveness of financial management. Results of heteroscedasticity test (BP-G test) also confirm that relationship between variables is statistically significant. The values of Prob(F-statistic) = 0.03 based on Akaike, Schwarz, and Hannan-Quinn model selection criteria. Therefore, results highlight effects of newly introduced electronic payment channels on structure and performance of CBI's balance sheet. Therefore, the main conclusions drawn from this study are that FITR e-platform has greatly supported enhancement of monetary control, increased transparency in foreign-currency transactions and improved monetary stability through digitalization of financial instruments used in combination with CBI's balance-sheet operations.

Recommendation

On the basis of findings from this study several recommendations may be put forward.

1. Firstly, CBI should continue to develop/ implement FITR electronic-platform to enhance regulatory environment in relation to financing import-related transactions and to improve mechanisms for cash sales across the country. Continuing development of FITR-platform is necessary to ensure continued transparency and effective control over foreign-currency related transactions.
2. Secondly, CBI should expand usage of electronic payment tools so as to integrate them further into its assets and liabilities management. The integration of electronic-payment tools with management of assets/liabilities at CBI will contribute to improvements in operational efficiency, reductions in administrative costs as well as to enhanced use of CBI's financial resources.
3. Thirdly, CBI should continue to utilize FITR-platform as a tool for achievement of monetary convergence between official and parallel exchange-rates. FITR-platform could make considerable contributions to reducing volatility in exchange-rates and restoring confidence in Iraqi-financial system.
4. This study stresses the need to integrate balance-sheet components with operational framework of FITR-platform in order to establish conditions leading to increased monetary stability and enhanced effectivity of monetary-policy implementation. Such integration would provide for better management of liquidity as well as for strengthened financial-supervision mechanisms.

Lastly, study suggests directing efforts towards establishing/strengthening favorable characteristics of FITR-platform through enhancements to supervisory/verification procedures aimed at preventing non-real/non-compliance traders from accessing the platform. Enhancements to supervisory/verification procedures would contribute to enhancing transparency, diminishing financial irregularities as well as improving adherence to international standards relating to anti-money laundering regulations.

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