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EMPLOYING TAX DIGITALIZATION TECHNOLOGIES TO IMPROVE ACCOUNTING AND TAX COLLECTION PROCEDURES IN IRAQI PRIVATE BANKS: AN ANALYTICAL STUDY OF SOME BANKS LISTED ON THE IRAQ STOCK EXCHANGE

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Abstract

This research aims, both theoretically and practically, to demonstrate the role of employing tax digitalization technologies in improving accounting and tax assessment procedures in a sample of Iraqi private banks listed on the Iraq Stock Exchange during the period (2022-2024) by analyzing the actual application of these technologies in accounting and tax systems. This research adopted an analytical approach, relying on data from the tables of the sampled banks, which included Baghdad Bank, the International Development Bank, the Credit Bank, and Ashur Bank. The analysis also examined the timing of financial statement submissions, the amounts of taxes calculated, and the losses incurred due to the absence of automated systems. The results revealed a clear discrepancy in the timing of financial statement submissions to the General Authority for Taxes, reflecting a weakness in the automation of accounting and tax procedures.

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This weakness impacts the accuracy of tax calculations. The research concluded that using electronic payment systems makes cash liquidity a crucial element in implementing the federal budget, rather than a burden during periods of scarcity. Furthermore, the use of these technologies significantly contributes to improving the performance of staff working in the Tax Authority, making them more committed to implementing decisions that facilitate tax accounting procedures. The research recommended that Iraqi private banks adopt digital systems for tax accounting, develop their digital infrastructure, and organize training programs for bank and tax authority employees to ensure the effective implementation of digitalization and improve the efficiency of the tax system.

Keywords: Tax Digitalization, Tax Accounting, Tax Assessment, Digital Transformation.

Introduction

Since the last decade of the 20th century, the world has witnessed a true revolution in information and communication technology, significantly impacting all aspects of economic, social, and political life. Globalization and the emergence of the internet marked a turning point, particularly for the economic situation, and directly for the lives of societies. As a result of this context and the significant technological advancements we are witnessing today, numerous modern methods and tools for tax collection have emerged, positively affecting tax revenues in general, and accounting, auditing, and tax collection in particular. This has led to increased interest in studies that seek to employ digital technologies in various government sectors (such as health, education, security, transportation, and communications, etc.). Governments are increasingly pressured to meet their citizens' needs by providing services more effectively, as well as to improve public policies to enhance tax compliance among taxpayers. Therefore, the need arose to understand the role of digitalization in improving tax performance, which contributes to raising the level of government services on the one hand, and to moving towards a digital economy on the other. The implementation of these technologies is the first step in this transformation.

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Section 1: Research Methodology

The Research Methodology

1. Research problem

The research problem lies in the fact that many countries that have adopted digital technologies in their revenue collection systems, particularly in tax collection, still suffer from a limited understanding and effective application of these systems, which is inconsistent with their intended objectives. Misuse or suboptimal utilization of these technologies can lead to negative outcomes that contradict the reformative goals sought from the digital transformation of the tax system.

Therefore, the main research question revolves around: "What is the nature and scope of the impact of digitalization on taxpayers within the tax collection system?"

To answer this question, the research analyzes two fundamental dimensions to demonstrate the impact of digitalization and its technologies on the quality of tax accounting:

• The first dimension: The impact of digitalization on supporting decision-making processes and the formulation of public policies, within the framework of the shift towards a digital environment as a strategic trend in modern management.

• The second dimension: The relationship between the quality of tax services and the efficiency of the government administrative apparatus, in light of the challenges that may arise from resistance to digital transformation by some parties due to conflicting interests associated with the application of these technologies.

2. Significance of the Research

This research gains its importance from highlighting the role of digitalization in improving tax accounting procedures, thus contributing to accelerating tax processes and reducing the time and effort required by both taxpayers and tax authorities.

3. Research Objectives

This research aims to achieve several key objectives, most notably the following:

1. To enhance the tax collection strategy for transitioning to a digital tax system.

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2. To demonstrate the most significant gains that government institutions will reap from the transition to digitalization and the resulting improvements for taxpayers.

4. Research Hypothesis

The research was based on a main hypothesis stating that "there is a statistically significant relationship between calculated tax and losses resulting from the absence of digitization in the banks included in the study sample." This relationship reflects the correlation between the volume of financial activity and its resulting financial impacts, given the continued use of traditional tax accounting methods.

A set of sub-hypotheses stemmed from this main hypothesis. These sub-hypotheses included: the existence of statistically significant differences in the average calculated tax among the banks included in the study sample due to variations in the volume of banking activity, and the existence of statistically significant differences in the average losses resulting from the absence of digitization among these banks. The research also adopted the null hypothesis, which states that there is no statistically significant relationship between calculated tax and losses resulting from the absence of digitization in the banks included in the study sample.

5. Research Timeframe

The fiscal year 2023 was chosen as the base year, while the fiscal years 2022 and 2024 were selected for comparison to demonstrate the results of using digital technologies in the Large Income Taxpayers Department before and after the base year.

6. Research Sample and Reasons for Selection

Some banks listed on the Iraq Stock Exchange were selected as a case study for the following reasons:

1. Their prominent position in adhering to financial and tax legislation and their readiness to implement International Financial Reporting Standards (IFRS) starting January 1, 2026. This necessitates strengthening digital systems and

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developing financial and tax disclosure mechanisms to ensure accuracy and transparency.

2. Their pivotal role in the Iraqi economy. Banks form the backbone of the financial sector and play a key role in mobilizing capital and financing various economic projects.

3. Their high revenues relative to the banking sector in Iraq.

4. The activity of these banks is commercial banking, not Islamic banking. Researchers deliberately avoided Islamic banking due to its relative newness in Iraqi banking.

5. The banks' commitment to regularly submitting their quarterly accounts to the market, which enhances the reliability of their data.

7. Methodology

The research adopted a descriptive-analytical approach, as it is suitable for the nature of the study, which aims to describe and analyze financial and tax phenomena as they exist in reality, as well as to interpret the relationships between the variables represented by the calculated tax and the losses resulting from the lack of digitization in the banks included in the study sample.

The analytical aspect of the descriptive approach was also used to test the statistical relationships between the variables and to interpret the impact of the lack of digitization on the financial performance of the banks.

8. Data Collection Method

The research data was collected using available official sources, specifically:

- Financial statements and reports of the banks included in the study sample.
- Data published on the official website of the Iraq Stock Exchange.
- Annual financial reports of the banks.

Data was collected for the period 2022–2024, comprising 12 observations distributed across four Iraqi banks.

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9. Analytical Tools

The following statistical tools were used in data analysis:

1. SPSS (Statistical Package for the Social Sciences) software for quantitative data analysis.
2. Descriptive statistics, including:
• Arithmetic mean (Mean)
• Standard deviation (Standard Deviation)
• Maximum and minimum values (Maximum and Minimum)
3. Comparative analysis between banks using arithmetic means and standard deviations.
4. Correlation analysis (Pearson Correlation Coefficient) to measure the strength and direction of the relationship between the two study variables (tax and losses).

Section Two: Theoretical Framework

1. Digitization

1-1: The Origin and Development of Digitization

Digitalization began in 1679 when Gottfried Wilhelm Leibniz developed the first-ever binary system. In 1703, he wrote a book entitled "Explanation of Binary Systems" to help others understand this system. Later, in 1755, Samuel Johnson, another pioneer of the binary system, wrote a book explaining the system from a broader perspective, describing it as a unique method of calculation based on simple progressions, similar to the method used by the Chinese thousands of years earlier.

In 1956, IBM revolutionized the business world with magnetic disks and random access memory (RAM) through the RAMAC 305 and RAMAC 650 systems, which were first used in the United Airlines reservation system. IBM claimed in its press release announcing RAMAC that business transactions would be processed much faster and more efficiently. In 1960, American Airlines launched its Sabre flight reservation system, which processed 84,000 phone calls and stored 807 megabytes of reservations.

In 1968, libraries in the United States began implementing the MARC pilot project, which involved transferring cataloged data to machine-readable magnetic tapes to facilitate distribution. In 1971, e-readers and e-books became widespread,

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making copyright-free works electronically accessible to everyone. And in 1979, FedEx, an American courier company, launched its online customer service system. In Finland, the first 2G cellular network was launched in 1991.

This network uses digital signals instead of analogue transmission between mobile phones and cell towers, increasing system capacity and becoming one of the most widespread forms of communication. In 2003, electronic payments surpassed cash and checks for the first time, becoming the preferred payment method for American consumers. In 2004, Exela Technologies launched its first Docu Scan scanner, which evolved into Intelli Scan. Intelli Scan incorporates optical character recognition (OCR) technology and intelligent data extraction, making it one of the fastest scanning platforms in the world today. In 2012, nearly 20 years later, e-commerce sales exceeded $1 trillion globally for the first time.

By 2014, the number of internet users worldwide had reached approximately 3 billion. In 2020, following the developments the world witnessed, Mastercard and Exela partnered to launch Request-To-Pay, where this technology provided greater flexibility and connectivity for bill payers through a secure and unified messaging service. From this, we conclude that digital transformation was one of the most consistent trends shaping the modern era and shows no signs of slowing down (Matt, 2020:19).

1-2: The Concept of Digitization

The widespread adoption of the internet has led to the emergence of the concept of e-commerce, which has facilitated business transactions and reduced time, effort, and costs. E-commerce has not only achieved this but has also opened new horizons for companies, institutions, individuals, and governments. Hence, the importance of digitization has become prominent, and interest in it has grown significantly, making it a fundamental element in various contemporary economic processes (Chang, 2015:1).

The term digitization has become commonplace worldwide, in both developed and developing countries. Developed countries rely entirely on digitization in their technologies, while developing countries strive to catch up. This leads us to an important point: understanding the concept of digitization. While its definitions vary, they all agree on a single context. Ruiz defined it as "the ability

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of a state and its people to use digital technologies in the production, processing, and exchange of information." Furthermore, its concept is linked to the social, economic, and political changes that occur as a result of the mass adoption of technology (Ruiz, 2013:13).

It has also been defined by UNESCO as "digital materials created from digital and analogue sources using scanners or other electronic devices. Digital content includes the creation, exchange, and access of content in various digital formats, such as online courses, videos, libraries, digital texts, games, and applications" (UNESCO, 2018:2). The OECD's Information and Communications Technology Sector defined it in 1998 as "a set of manufacturing and service industries that collect, transmit, and display data and information electronically" (OECD, 2002:1).

It has also been defined as "the process of converting materials from analogue formats that can be read by humans to digital formats that can be read by machines using devices such as scanners, cameras, and other equipment. These technologies allow for the digitization of almost all types of materials, including paper documents, photographs, sound recordings, and films" (Khan et al., 2015:139). Therefore, most definitions of digitization agree on the use of Information technology and digital data to increase the accuracy and speed of completing tasks in various fields.

1-3: Digitization Requirements

Most studies have focused on identifying and characterizing the requirements of digital transformation technology (Hess & Fuchs, 2018:216; Demirbas, 2018:312; Eden, 2019:27):

1. Leadership Support: Leadership support is a fundamental element that surpasses any other success factor and can often be sufficient to achieve success on its own. Some experts indicate that leadership support is the most important factor in achieving and implementing systems. Leadership support includes the presence of strategic leaders within the organization who provide the necessary support for projects that align with the organization's larger goals (Kemei & Kidombo, 2018:196).

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2. Infrastructure: Infrastructure includes a variety of systems and structures that require physical components. Having suitable infrastructure enhances an organization's ability to undergo digital transformation. Although investments in this area can be costly and require significant capital, they are considered essential for economic growth and the prosperity of the region. Infrastructure improvement projects can be funded through public or private sources.
3. Resource Mobilization: This refers to all activities aimed at securing new resources, improving existing resources, and maximizing their utilization. Often referred to as "new business development," resource mobilization is essential for any organization, as it ensures the continuity of its services to customers, supports its sustainability, and enables it to improve and expand its products and services (Eden, 2019:27).

1-4: Digitization Goals

The goals of digitization are numerous and vary depending on the context, but they can be summarized in five main objectives:
1. Government Transformation: Establishing a new relationship based on trust between society and the government, relying on the experiences of citizens and beneficiaries of public services provided by the government. This will be achieved through the use and adoption of information and communication technologies in government operations. This is accomplished by promoting procedures aimed at improving government efficiency and establishing transparency and accountability. In turn, the government will work to increase its responsiveness to the demands of citizens and organizations (Bannister & Connolly, 2011:137).
2. The Digital Economy: Integrating digital technology into economic processes contributes to increased productivity and improved digital business, products, and services (Oikos, 2017:4). The IMF defines it as the continuous interaction between information and communication technologies (ICTs) on the one hand, and the national, sectoral, and international economies on the other. This interaction enhances the transparency, speed, and productivity of economic indicators that support economic, commercial, and financial decisions within a country over a specific period (IMF, 2018:7).

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The digital economy is also defined as an economy that deals with digital information, digital customers and companies, and products built on digital technology (Bukht & Heeks, 2017:12). The digital economy is characterized by its reliance on intangible goods, which distinguishes it from the traditional economy, which is based on a scarcity of options. In contrast, the digital economy is based on the concept of abundance and relies primarily on human intellectual capabilities as a form of capital, rather than solely on technology. The shift from a resource-based economy to a knowledge-based economy is linked to individuals' ability to generate new ideas that align with the challenges of globalization and global ICTs.

3. Quality of Education: The goal of quality education refers to integrating information and communication technologies (ICTs) into the educational process, which helps countries enter the information and knowledge society. The digital world is rapidly expanding in the fields of education and skills, and this technology is used to enhance educational performance and equip teachers and students with the necessary digital skills (Sarah, 2017:4).

4. Effectiveness of Global Health: This digital health policy provides a framework for leveraging the opportunities offered by ICTs, with a particular focus on improving the universal health coverage system and the quality of healthcare services. In parallel, the policy seeks to utilize health infrastructure and financial resources more effectively. This goal is achieved through the application of ICTs to ensure the provision of effective and widely accessible health services globally (Ruiz, 2013:23-24).

Global health effectiveness represents the organized efforts to apply information technology and computer science to public health functions, health research, and education. This field is a branch of health information systems, which are systems that integrate data collection, processing, reporting, and the use of information to improve the effectiveness and efficiency of health services through optimal management at all levels (Healthcare UK, 2015:4; Health Organization, 2004:3).

5. Public Safety: Bashir defines public safety as the use of information and communication technologies to enhance public safety and reduce losses resulting from natural disasters. This is achieved by strengthening institutional and policy

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frameworks that coordinate the efforts of citizens and authorities to promote and reinforce public safety (Ruiz, 2013:24).

1-5: Digitization Elements

Digitalization consists of a set of elements that can be divided as follows (Rahbani, 2012:52):

1. Digital Encoding: This service is a technology that enables the digital transmission of information and its automated processing.
2. Digital Messaging Systems: These involve designing and creating specialized software and internet networks to facilitate communication with customers and experts in production processes. These systems also utilize laser technology, fiber optics, and optical pumps, and are characterized by intelligent features that enable users to control and maintain them effectively.
3. Digital Access Networks: Digital access networks are a type of cable-based network where devices like DLS play a crucial role in television systems. A mobile modem converts the digital signals associated with transmitted audio into analogue signals, allowing them to be transmitted over wired telephone lines.
4. Switching Systems: This process ensures the convergence of transmitted and received information and is characterized by its high data transfer speed, contributing to its efficient use in management, production, and distribution processes.
5. Mobile Phone Networks: These networks rely on a single encryption process for each call at high speed, enabling users to obtain data very quickly.
6. Media Broadcasting Technologies: This stage involves integrating the World Wide Web with cable television networks and other technologies to achieve digital broadcasting, including television programs, digital recording, and video services for advertising and promotional purposes. 1-6: Obstacles to Digitization Obstacles to digitization play a significant role in the digital transformation process. They can slow its spread, limit its use, or even prevent its emergence altogether. Among these obstacles (Ben Amara, 2018:76) are:

First: Organizational and Legislative Obstacles: Digital transformation programs face several challenges, including:

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1. Insufficient planning and coordination at the senior management level for digital transformation programs.
2. Weak oversight by senior authorities of the implementation of the digital transformation project and a lack of coordination between different entities and departments, especially regarding the standardization of hardware and software use.
3. A shortage of media awareness programs accompanying the implementation of digitization projects in institutions.
4. The absence of a central body to adopt digitization projects at the national level, leading to weak compliance systems.
5. The difficulty of establishing a legislative and legal environment that aligns with digital work, requiring considerable effort and time.

Second: Technical Obstacles: These include the following:

1. Difficulties in operating computers and related problems.
2. A lack of standardized specifications and specifications for equipment used within the same institution.
3. Outdated hardware and software used in government institutions.
4. Weak infrastructure in many institutions, leading to their unpreparedness to adopt this technology.
5. Inadequate communication network infrastructure in many areas.
6. Weaknesses in the modern technology sector in developing countries due to limited manufacturing capacity and a shortage of qualified technical expertise.

Third: Human Obstacles: These include:

1. Limited cultural awareness of information technology at both the social and professional levels within public institutions.
2. A scarcity of training programs related to modern and advanced technologies in public facilities.
3. Growing anxiety among some managers and decision-makers that change may pose a threat to their authority.
4. Insufficient incentives for employees to encourage the transition to a digital model.
5. Inadequate computer skills.

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Fourth: Financial Obstacles: These include:

1. Insufficient financial resources allocated to developing the necessary infrastructure for implementing the digital project, particularly in the areas of network establishment, site connectivity, and equipment upgrades.
2. Limited resources available to some public facilities due to their reliance on fixed and predetermined budgets.
3. Scarce financial allocations for training and qualification programs are necessary for the efficient implementation of digital projects.
4. The high cost of software used to process various data to obtain results that support informed decision-making. 1-7: Reasons for Moving Towards Digitization

The move towards digitization has become an urgent necessity for many institutions and countries for several key reasons (Al-Bar, 2021:2):

1. Digitization plays a crucial role in accelerating access to data, thus reducing the effort required to maintain business continuity. The digitization process is also cost-effective, as physical data requires more storage space. Therefore, digitizing information is more economical than maintaining and managing physical copies, and it reduces the need for paper documents and other analogue materials.
2. Digitization contributes to enhancing employee engagement and providing them with more effective work tools, thus avoiding the problems associated with relying on paper documents. This technology allows them to access the system anytime, anywhere, and on any device, whether or not they are connected to the internet.
3. Business growth can be accelerated through digitization, as it helps reduce the time required to search for documents and conduct research, enabling employees to focus more on completing their tasks and dedicate more time to more strategic ones.
4. Companies' adoption of digitalization has streamlined procedures and automated tasks, resulting in reduced response times and increased productivity, which in turn has improved the overall efficiency of business operations.
5. The importance of digitalization lies in its ability to enable data and file retrieval through backups, unlike paper files which may be permanently lost if misplaced.

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2. Tax Settlement

2.1: The Concept of Tax Settlement

The tax settlement process combines accounting and administrative characteristics. Administratively, it involves implementing the legislative provisions related to the state's tax policy. From an accounting perspective, it encompasses the operations carried out by the General Authority for Taxes and its various branches to ensure the transfer of collected tax revenues to the state treasury. It is worth noting that this process does not follow a fixed mechanism or set of steps that can be summarized under the term "tax settlement." Tax settlement is a vital part of the tax system, as neglecting it or its poor performance can lead to extremely serious consequences.

These consequences may manifest as a distortion of tax policy and a disregard for the intellectual principles and rules upon which tax thought is based. The success of the tax administration in implementing the tax policy represented by binding legislative provisions is achieved through its effective management of the tax settlement system (Al-Kaabi, 2016:75). The tax settlement process relies primarily on data and information, in addition to accounting systems. The need for this data is not limited to taxpayers; it must be available regularly and accurately across all state institutions. Only then can the tax authority effectively control economic activity through the available information (Kamil, 2020:121).

2.2: Tax Definition and Tax Settlement

Taxes are among the most important sources of funding for the general budget and a fundamental tool for achieving the state's objectives. A tax is defined as "a financial resource that the state takes permanently from the income of individuals without any tangible return" (Saadoun, 2013:22). It is also defined as "a mandatory levy imposed on income or any capital asset without the taxpayer receiving a direct return" (Dub, 2014:13).

It is well-established that tax laws are effective when the tax settlement system is sound (Dawit, 2014:24). Tax settlement is defined as "determining the amount of income subject to tax during the tax year" (Ayu R, et al., 2015:236). Al-Khurasan defined it as "a component of the tax system responsible for implementing the provisions of tax legislation" (Al-Khurasan, 2020: 59). Tax accounting was also

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defined as "an important element in the tax system that determines the responsibilities and obligations of the taxpayer towards the tax authority, in accordance with the applicable tax law" (Dawit et al., 2014: 24).

3.2: Dimensions of Tax Settlement. Researchers have differed in their opinions regarding the dimensions of tax accounting. Some have divided these dimensions into four, while others have chosen five, and still others have divided them into more or fewer. However, they generally agree on three main dimensions: (tax assessment, tax valuation, and tax collection). Dawit (2014), Baingana (2011), and Darison (2011) all agree on three dimensions of tax accounting: tax assessment, tax valuation, and tax collection. The following is an explanation of these dimensions:

1. After tax registration: This refers to identifying the taxpaying community and registering state taxpayers. This task is a cornerstone of the tax accounting system and a crucial first step upon which the remaining procedures and stages of the system are built. Therefore, it is essential to focus on identifying new taxpayers and discovering new sources of income (Baingana, 2011:33; Lumenyela, 2014:13).

2. After tax assessment: Verifying and assessing legal tax liability is a fundamental task performed by specialized assessors within the tax authorities responsible for revenue collection (Lumenyela, 2014:13; Baingana, 2011:8). Well-designed tax education programs and services can facilitate self-assessment and compliance. The primary and most important objective of any tax administration is to encourage, facilitate, and maintain a high level of self-assessment and voluntary compliance among taxpayers (Lumenyela, 2014:13). Consequently, most tax systems worldwide require taxpayers to be informed of their estimated income and the amount of taxes they owe.

In the absence or weakness of national information systems that manage civil data for members of society, including details of their current residence, the process of tax assessment and generating revenue for the public treasury becomes a difficult task and constitutes one of the significant obstacles facing efforts to improve the performance of the tax settlement system.

3. After Tax Collection: Tax collection refers to securing government tax revenues, which represents a constant and fundamental problem for all countries

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(Kamijo, 2014:2). Government taxes are collected to finance public institutions and provide public services to citizens. Therefore, tax revenues are considered the primary source of government resources (Chuenjit, 2014:14). The most important aspect of tax settlement is the revenue collection procedures. The effectiveness of these procedures can be measured by determining the number of non-compliant taxpayers. Due to mismanagement and tax evasion, revenue increases are minimal in most developing countries (Baingana, 2011:9; Lumenyela, 2014:13).

2-4: Tax Settlement Elements

The basic elements of the tax accounting system can be summarized as follows:

1. Legislative rules: The rules issued by the tax legislative body are an essential part of the tax accounting process. Legally speaking, taxation is a legislative tool aimed at distributing public burdens among individuals. It is levied according to the authority of the law, and no one is exempt from it except by the law itself. Taxes can only be amended as stipulated by law (Al-Kharsan, 2002: 83).
2. Tax Administration: The tax administration is a fundamental element of the tax accounting system, as it is responsible for implementing regulations issued by the legislative authority of the state. It also issues tax instructions and decisions to ensure their practical application. Therefore, it oversees the implementation of the provisions of tax law and the interpretations provided by the legislative authority and the tax judiciary. The tax judiciary is an essential part of the tax accounting process due to its role in judicial oversight, ensuring the proper application of tax legislation, and achieving justice in the tax field. Furthermore, it is responsible for adjudicating tax disputes that may arise between taxpayers and the tax administration (Faraj, 2016: 34).
3. Tax Judiciary: The tax judiciary is an essential part of the judicial oversight system, contributing to ensuring the proper application of tax legislation and achieving tax justice. It also undertakes crucial tasks in adjudicating tax disputes that may arise between taxpayers. Taxes and tax administration (Palmrose, 1996:92).
4. Taxpayers: Taxpayers are a fundamental element in the tax accounting process. They represent the individuals or legal entities responsible for paying taxes,

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according to applicable tax laws. In other words, they are the individuals identified by law and obligated to bear and pay the taxes due. Therefore, taxpayers are the most dynamic element in the tax accounting process and deserve significant attention (Al-Khurasan, 2020:59).

Section Three: The Practical Framework.

1. A Brief Overview of the Banks in the Research Sample.

The study sample consists of four banks listed on the Iraq Stock Exchange. These banks were selected because they represent a significant portion of the private banking sector in Iraq and differ in their establishment dates and capital sizes. This provides a suitable basis for analyzing the current state of digitalization in accounting and tax procedures.

Bank of Baghdad is one of the oldest banks included in the study sample, having been established on February 18, 1992, and listed on the Iraq Stock Exchange on June 15, 2004. It began its banking operations with a capital of 100,000,000 Iraqi dinars at its inception, which increased to 5,280,000,000 Iraqi dinars upon listing. Its current capital stands at approximately 400,000,000,000 Iraqi dinars, reflecting the bank's expansion in its banking activities.

Ashur International Investment Bank was established on April 25, 2005, and listed on the Iraq Stock Exchange on November 11, 2007. Its initial capital was 25,000,000 Iraqi dinars, which increased to 25,000,000,000 Iraqi dinars upon listing. Its current capital stands at 250,000,000,000 Iraqi dinars, with a par value of 1 Iraqi dinar per share.

The study sample also included the International Development Investment Bank, which was established on January 11, 2011, and listed on the Iraq Stock Exchange on May 2, 2017, with an initial capital of 100,000,000,000 Iraqi dinars. This capital increased to 250,000,000,000 Iraqi dinars upon listing, while its current capital stands at 400,000,000,000 Iraqi dinars.

While the Iraqi Credit Bank is one of the banks with extensive experience in banking, having been established on July 25, 1998, it was listed on the Iraq Stock Exchange on July 8, 2004, with an initial capital of 200,000,000 Iraqi dinars, which increased to 1,600,000,000 Iraqi dinars upon listing. Its current capital stands at 346,870,000,000 Iraqi dinars, with a par value of 1 Iraqi dinar per share.

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2. Presentation and Analysis of the Research Sample Data.

Table 1: Baghdad Bank (BBOB)

Estimated Year	Date of Submission of Financial Statements to the Tax Authority	Tax Calculated According to the Statement (Iraqi Dinars)	Amount Lost by the Treasury Due to the Absence of an Automated System
2022	19/4/2023	10,635,320	314,700
2023	5/3/2024	26,048,820	463,883
2024	25/2/2025	56,896,722	857,348

Source: Based on the financial statements of companies listed on the Iraq Stock Exchange website.

Table 2: Ashur International Investment Bank (BASH)

Estimated Year	Date of Submission of Financial Statements to the Tax Authority	Tax Calculated According to the Statement (Iraqi Dinars)	Amount Lost by the Treasury Due to the Absence of an Automated System
2022	3/12/2023	5,571,567	514,416
2023	28/8/2024	6,407,087	423,043
2024	30/9/2025	3,445,397	257,697

Source: Based on the financial statements of companies listed on the Iraq Stock Exchange website.

Table 3: International Development Bank for Investment and Finance (BIDB)

Estimated Year	Date of Submission of Financial Statements to the Tax Authority	Tax Calculated According to the Statement (Iraqi Dinars)	Amount Lost by the Treasury Due to the Absence of an Automated System
2022	22/8/2023	3,051,630	195,640
2023	17/4/2024	9,045,708	267,654
2024	14/5/2025	12,559,613	461,093

Source: Based on the financial statements of companies listed on the Iraq Stock Exchange website.

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Table 4: Iraqi Credit Bank (BROI)

Estimated Year	Date of Submission of Financial Statements to the Tax Authority	Tax Calculated According to the Statement (Iraqi Dinars)	Amount Lost by the Treasury Due to the Absence of an Automated System
2022	7/3/2023	786,419	14,220
2023	21/2/2024	903,532	12,872
2024	12/3/2025	668,020	12,994

Source: Based on the financial statements of companies listed on the Iraq Stock Exchange website.

Table 5: Amounts Wasted Due to Non-Implementation of the Digitalization Decision in Iraqi Banks

Bank Name	Year	Amount Wasted Before Cabinet Decision	Amounts Wasted Due to Non-Implementation of the Cabinet Decision on Digitalization for the Fiscal Years 2023, 2024
Baghdad Bank	2022	314,700	1,321,231
Ashur Bank	2022	514,416	680.74
Development Bank	2022	195,640	728,747
Iraqi Credit Bank	2022	14,220	25,866
Total		1,038,976	1,436,674,231

Based on the data in Tables 1, 2, 3, and 4 for the research sample of banks for the period 2022–2024, a clear disparity emerged in each bank's submission of financial statements to the General Authority for Taxes. This affects the accuracy of tax accounting procedures, leading to inaccurate estimates of tax due and increased losses for the treasury due to the lack of a fully automated tax accounting system. The tables show that all banks submitted their financial statements after the end of the tax year by varying periods, reflecting a weakness in the automation of accounting and tax procedures.

As we can see from the data, there has been an increase in the value of taxes levied by some banks in recent years, particularly at the Bank of Baghdad and the International Development Bank. The higher tax rate at the Bank of Baghdad, compared to other banks, is attributed to its larger capital and the scale of its

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financial activity, which is reflected in its annual profits. The tax rate recorded a clear increase in 2024 compared to previous years. This is accompanied by an increase in the losses incurred by the public treasury due to the absence of an automated system. This indicates a clear, direct relationship between the volume of activity and the magnitude of losses resulting from reliance on traditional procedures.

Conversely, some banks in the study sample showed a relative decrease in the value of taxes levied and the amount of losses borne by the treasury, such as the Iraqi Credit Bank. This is attributed to its relatively smaller capital and annual profits compared to the other banks in the study sample, in addition to the limited range of banking services it offers. This reduces the financial impact of the absence of an automated system. However, the consistency of these losses over the years leads to the continuation of the same problem, confirming that the lack of digitalization affects all banks, regardless of their size. It was also observed that Ashur International Bank experienced fluctuations in the calculated tax amount and the losses incurred by the public treasury. This is attributed to changes in annual profits. Furthermore, the timing of financial statement submissions to the General Authority for Taxes significantly contributes to these fluctuations.

Looking at Table 5, we note that the amounts lost vary among the banks in the research sample due to the non-implementation of the Cabinet's decision on digitization. Baghdad Bank recorded the highest amount lost, amounting to (1,321,231), while the Iraqi Credit Bank recorded the lowest amount at (25,866). This variation reflects the same trend that emerged in the analysis of the previous tables, as large banks with significant financial activity are more affected by the absence of automated systems, which increases the financial losses borne by the treasury. The table also illustrates that the lack of digitization leads to delays in submitting financial statements and increases the likelihood of errors in tax accounting. This underscores the necessity of implementing automated systems to enhance the accuracy and efficiency of tax accounting and reduce lost amounts, especially in banks with large activity, such as Baghdad Bank.

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3. Statistical Analysis of the Research Sample

First: Descriptive Statistics of the Research Variables

Table 6: Descriptive Statistics of the Research Variables

	No.	Minimum	Maximum	Mean Std.	Deviation
Tax	12	668020.00	56896722.00	11334986.2500	16016557.30277
Loss	12	12872.00	857348.00	316296.6667	248961.52645

The table of descriptive statistics for the study variables, represented by the calculated tax and the losses resulting from the absence of digitization, extracted using SPSS software for a sample of 12 observations, shows a clear variation in the values of the variables under study. The arithmetic mean for the calculated tax variable was (11,334,986.25) dinars, with the highest recorded value being (56,896,722) dinars and the lowest value being (668,020) dinars. With a high standard deviation of (16,016,557.30), this indicates a significant disparity in tax values among the banks in the study sample. This disparity reflects a clear lack of homogeneity in the size of financial activity and taxable profits among the banks, as some banks have very high financial activity compared to others with limited activity.

Regarding the variable of losses resulting from the absence of digitalization, the arithmetic mean was (316,296.66) dinars, while the highest value was (857,348) dinars and the lowest value was (12,872) dinars, with a standard deviation of (248,961.52). This indicates a significant variation in the size of losses among banks, although the degree of dispersion remains lower compared to the tax variable.

The comparison between the two variables also indicates that the tax variable has a much higher degree of dispersion than the losses variable, reflecting the greater impact of the bank's size and financial activity on the calculated tax compared to losses resulting from the absence of digitalization. While these losses vary among banks, they remain relatively more stable. Overall, the results indicate a clear heterogeneity among the banks in the study sample, with the size of financial activity having a significant impact on the variables under study. This underscores the importance of implementing digitalization systems to improve the efficiency of tax accounting and reduce the disparity in financial performance

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among banks. Second: Comparing the performance of the banks in the research sample in terms of taxes and losses.

Table (7): Statement of the impact of bank size on taxes and losses

Bank		Tax	Loss
BASH	Mean	5141350.3333	398385.3333
	N	3	3
	Std. Deviation	1526995.97224	130123.63980
BBOB	Mean	31193620.6667	545310.3333
	N	3	3
	Std. Deviation	23555913.46512	280338.22596
BIDB	Mean	8218983.6667	308129.0000
	N	3	3
	Std. Deviation	4807602.31556	137277.06662
BROI	Mean	785990.3333	13362.0000
	N	3	3
	Std. Deviation	117756.58518	745.54946
Total	Mean	11334986.2500	316296.6667
	N	12	12
	Std. Deviation	16016557.30277	248961.52645

The table reveals a clear disparity among banks in both calculated tax and losses resulting from the lack of digitalization. Bank of Baghdad (BBOB) recorded the highest average calculated tax of 31,193,620.66 dinars, with a high standard deviation of 23,555,913.46 dinars. This reflects the substantial financial activity of this bank compared to the others, which was also reflected in its losses, averaging 545,310.33 dinars.

In contrast, Ashur International Bank (BASH) recorded an average tax of 5,141,350.33 dinars with a standard deviation of 1,526,995.97 dinars, while its average losses amounted to 398,385.33 dinars. This indicates a moderate level of activity compared to the Bank of Baghdad, with some relative fluctuation in the values.

The International Development Bank (BIDB) showed an average tax of 8,218,983.66 dinars, with a standard deviation of 4,807,602.31, while its average

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losses amounted to 308,129.00 dinars, reflecting moderate financial activity with significant variations in values over the years.

Meanwhile, the Iraqi Credit Bank (BROI) recorded the lowest average tax of 785,990.33 dinars and a relatively low standard deviation of 117,756.58, and also the lowest average losses of 13,362.00 dinars, indicating limited financial activity for this bank compared to the other banks in the study sample.

In general, the overall results indicate that Bank of Baghdad leads the banks in terms of the size of the tax and losses, while the Iraqi Credit Bank comes in the lowest rank, reflecting a clear disparity between the banks in the study sample according to the size of the financial activity, which confirms that the size of the bank plays a major role in determining the amount of tax and losses resulting from the absence of digitization.

It plays a key role in determining the amount of tax and losses resulting from the absence of digitization.

Third: Testing the correlation between the tax and loss variables in the banks of the research sample.

Table 8: Correlation coefficient between calculated tax and losses resulting from the absence of digitization

		Tax	Loss
Tax	Pearson Correlation	1	0.832**
	Sig. (2-tailed)		0.001
	N	12	12
Loss	Pearson Correlation	0.832**	1
	Sig. (2-tailed)	0.001	
	N	12	12

**. Correlation is significant at the 0.01 level (2-tailed).

The correlation table shows a strong positive correlation between the calculated tax variable and the losses resulting from the absence of digitization. The Pearson correlation coefficient between the two variables is 0.832, a high positive value indicating a strong relationship between them.

The test results also showed that this relationship is statistically significant at the 0.01 level, with a significance value of 0.001, which is less than the required

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significance level of 0.05. This indicates that the relationship between the two variables is not random but rather a real and statistically reliable one.

Therefore, it can be said that there is a strong positive correlation between the calculated tax and the losses resulting from the absence of digitalization. In other words, the higher the calculated tax resulting from the increased volume of banks' financial activity, the greater the losses resulting from the lack of digital systems in tax accounting.

This result indicates that the volume of banking activity is a significant factor in increasing the financial gap resulting from traditional procedures, thus reinforcing the importance of transitioning to digitalization in reducing losses and improving the efficiency of tax accounting.

In general, the results of the statistical and descriptive analysis of the study variables indicate a clear disparity among the banks in the research sample in both the calculated tax and the losses resulting from the absence of digitalization. This reflects a lack of homogeneity in the volume of financial activity and the level of operational efficiency among the studied banks. The results showed that the tax variable exhibited a high degree of dispersion compared to the losses variable, indicating that differences in financial performance among banks are more pronounced at the level of taxable income.

Furthermore, the results of the comparison between banks revealed that large banks, particularly Bank of Baghdad, bear higher levels of tax and losses compared to smaller banks. This underscores that the size of banking activity is a crucial factor in determining the extent of the financial impact resulting from the absence of digital systems.

In the same vein, the correlation test results demonstrated a strong, statistically significant, positive relationship between calculated tax and losses resulting from the lack of digitalization. This suggests that increased financial activity is associated with increased losses as long as traditional tax accounting procedures remain in place.

Accordingly, it can be concluded that the absence of digitalization not only increases the disparity between banks but also directly impacts the efficiency of the tax system, leading to increased financial losses and inaccurate tax assessments. This underscores the importance of transitioning to digital systems

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to enhance the efficiency of tax accounting, reduce financial losses, and achieve greater fairness in financial performance among banks.

Section Four: Conclusions and Recommendations

First: Conclusions

By examining the tax calculation mechanism before implementing the proposed electronic systems for digital transformation, the following conclusions can be drawn:

1. The tax payment date will be on the first day of the tax year upon implementation of digitalization, making tax revenues more effective in financing the federal budget.
2. Early tax payment will prompt companies to reconsider their revenue and expenditure planning to ensure they are prepared to pay on this specific date.
3. Using electronic payment systems will make cash liquidity a crucial element in implementing the federal budget, rather than a burden during periods of scarcity. 4. The self-assessment mechanism currently used in tax accounting by the Tax Authority is one of the easiest and fastest mechanisms when implementing electronic systems.
5. The use of these technologies clearly contributes to developing the work of the Tax Authority's staff and makes them more committed to implementing decisions that facilitate tax accounting procedures.
6. The stages of automation, digitization, and the application of electronic systems in tax work make the tax system clearer for new investors, thus increasing domestic and foreign investment.
7. The move towards digitization in the financial sector in general, and tax activity in particular, is one of the steps accelerating the application of international standards, whether in accounting or other standards.
8. Statistical results showed a strong, statistically significant positive relationship between calculated tax and losses resulting from the absence of digitization (0.832), indicating that increased financial activity in banks leads to increased losses in the absence of digital systems in tax accounting.

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Second: Recommendations

1. Iraqi private banks are recommended to adopt automated systems at all stages of tax accounting to reduce wasted funds and errors in tax calculation, and to improve the efficiency of financial procedures.
2. Training courses should be organized for bank and tax authority employees on modern digital technologies to enhance their skills and increase adherence to standards and procedures.
3. Electronic monitoring and tracking mechanisms should be established to enable the tax authority to monitor bank performance in real time and reduce the financial risks resulting from traditional procedures.
4. The banks' technological infrastructure should be updated to ensure the digital system's ability to process and analyze large amounts of tax data accurately and quickly.
5. A unified electronic tax platform should be established to manage and standardize all tax accounting procedures digitally, contributing to faster procedures and enhancing transparency and accuracy in tax calculation.

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