

Information Technology Governance and Bank Performance in Jordan

Subjects: Business, Finance

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Financial performance is identified by return on investment (ROI), return on equity (ROE), and Tobin's Q. Averages of these variables were calculated for five years from 2015 to 2019. In fact, there is evidence for the general argument that banks will improve their performance by implementing information technology governance (ITG).

Keywords: accounting information systems ; information technology governance ; effectiveness ; financial performance ; banks ; Jordan

1. Introduction

The banking sector in Jordan witnessed great development since the 1970s, whether by increasing the number of banks operating in the sector, increasing the number of operating bank branches, or increasing the number of services provided by these banks. According to the Association of Banks in Jordan, the number of ATMs belonging to the Jordanian banking sector increased from 377 at the end of 2000 to 1023 at the end of 2009. The number of ATMs continued to increase until it reached 2038 ATMs at the end of 2019. In addition, banks operated through 862 branches at the end of 2019. The total number of branches was 446 at the end of 2000 and 619 at the end of 2009. In addition, there is a remarkable growth in the volume of deposits with banks, an increase in credit facilities, and an increase in the volume of their assets. Additionally, not only that, but the sector witnessed a development in financial policies and a shift towards liberalizing the interest rate, which is expected to lead to an increase in the demand for savings and in turn an increase in deposits with banks, which may increase the investment ability of these banks. Hopefully this will improve banking performance.

Much of the empirical work shows that market concentration leads to high profitability, and highly concentrated markets tend to be less competitive than markets in which many small organizations operate. Moreover, a concentrated market enables market practices to collude and to protect their market position with strategic behavior ([Khan and Hanif 2019](#)). Therefore, competition is particularly important in the banking sector because it affects the performance of practices. According to the structure-performance hypothesis, the structure of the market determines the degree of competition in the market and the degree of competition affects the performance of banks.

Information technology is expected to help banks by reducing costs, managing risks, predicting crises, achieving customer satisfaction, and promoting and diversifying services, this in turn would positively affect the financial performance of banks. However, to achieve the desired goals of information technology, there must be rules, procedures, and mechanisms that govern this technology, which are called information technology governance. It aims to ensure effective utilization of information technology (IT) by focusing on performance measurement, strategic alignment, resource management, risk management, and value delivery ([Wilkin and Chenhall 2010](#)), and this goes beyond focusing on investing in information technology only. It is worth noting that there is no consensus about the definition of ITG, although studies in the area, such as [Simonsson and Johnson \(2005\)](#) and [Wu et al. \(2015\)](#), include several definitions of ITG.

There is evidence for the general argument that banks will improve their performance by implementing ITG ([Lunardi et al. 2014](#); [Prasad et al. 2010](#); [Weill and Ross 2004](#); [Weill 2004](#)). However, empirical evidence supporting this relation between ITG and bank performance is quite limited especially in emerging markets. In addition, performance impact may be affected by the proper match between ITG and the situational factors that exist in the environment of the corporation. These factors play critical roles in affecting how ITG impacts bank performance. An example that supports this perspective is the literature of the field of IT value in which it is well documented that situational factors affect the relationship between IT and the bank performance (e.g., [Cao 2010](#); [Kohli and Grover 2008](#); [Grant 2005](#); [Tanriverdi 2005](#); [Melville et al. 2004](#); [Brynjolfsson 2003](#); [Barney 2001](#)). It should be emphasized that using IT guarantees neither the existence of ITG nor the effectiveness of ITG (if it exists).

2. ITG and Performance

It is presumed that banks that seek to improve their performance are working hard to develop their capabilities in line with the level of competition they are exposed to in the market. That is, there should be a match between these resources and the level of competition to improve their performance. One of the important resources that banks depend on, to improve their competitive position in the market, is information technology. However, in order for this technology to be mature and helpful in achieving goals, it must be in harmony with the business, which can be achieved by setting the foundations and standards for the governance of information technology. [De Haes and Van Grembergen \(2009\)](#) found that there is a positive relationship between *ITG* and business/IT alignment. It is also assumed that the existence of proper governance to these capabilities aids in maximizing the utilization of these capabilities. Furthermore, in the same context, [Dixit and Panigrahi \(2014\)](#) show that the effect of increasing investment in information technology leads to higher profits for enterprises with higher exports. [Dadoukis et al. \(2021\)](#) show that banks with high IT investment performed better, in terms of market returns, Tobin's *q* and lending, than other banks during the COVID-19 pandemic. [Arora and Arora \(2013\)](#) found that investment in information technology has had a significant positive impact on the profitability of the Indian public sector. [Ho and Mallick \(2010\)](#) found that although investment in information technology improves the work of banks, it may increase the level of competition between banks.

However, it should be emphasized that improving performance requires not only the use of IT capabilities but also having the suitable *ITG* that is composed of these capabilities. [Zhang et al. \(2016\)](#) states that the stronger the *ITG* is, the more likely that the bank becomes an IT leader. [Soliman and Zaky \(2017\)](#) found that *ITG* mediates the effect of IT investment on the financial and non-financial performance of Egyptian banks. It is worth noting that having the ability to measure *ITG* helps achieve this goal, such as the methodology of [Weill and Ross \(2004\)](#), which depends on measuring governance by linking the importance of the desired goals of using information technology and the success of companies in achieving these goals. In this context, the extent to which managers are aware of the importance of these goals for their companies and the success of these companies in achieving these goals can be questioned, and this is one of several things that the current research seeks to test.

[Ko and Fink \(2010\)](#) found that one of the large gaps between theory and practice that needs attention is increasing the awareness and understanding of the concept of *ITG* among senior managers. They consider that chief information officers (CIOs) or information technology directors of organizations are the key personnel involved in *ITG*. They argue that *ITG* can be seen as an integral part of corporate governance that needs the attention and care of senior management. This argument demands that there is a coherence between IT directors and the other senior managers in banks in dealing with *ITG* in order for the bank to achieve its desired objective. In addition, [Weill and Hoffmann \(2007\)](#) referred to measuring the awareness of CIO compared to the other senior managers in a regional New England bank concerning the importance of *ITG* elements.

3. Banks Performance

Interest in the performance of banks has been the focus of researchers around the world. Among this interest is the focus on the factors that could improve it, which has led to the emergence of many studies that seek to accomplish this task. For example, [Muller and Watkins-Fassler \(2021\)](#) found that banks' performance, in Curacao, is negatively affected by gender diversity and board size and it is positively affected by multiple directorships. [Baugh et al. \(2021\)](#) found that material weaknesses in internal control are negatively associated with future bank performance, which means that internal control quality improves the bank's performance. [Hoang et al. \(2021\)](#) found that bank performance in Vietnam is improved by both geographic and income diversification strategies. However, their results showed that the interaction of these two variables together leads to a negative impact on the performance of banks. That is because adapting geographical diversification with diversification in income leads to increased competition which in turn reduces performance.

4. Competition and Performance

It is well established, conceptually and empirically, within the previous literature that intensity of competition is a fundamental problem for corporations. It plays an active role in the design of a company's accounting information system ([Wallace 2013](#)). In addition, it urges the bank to be efficient in the business it carries out. [Arrawatia et al. \(2015\)](#) found that increased competition in the Indian market can positively affect efficiency levels in the banking industry and vice-versa. [Tian et al. \(2020\)](#) found that an increase in competition leads to an improvement in innovation efficiencies, whether through the investment in R&D or in terms of the resulted patents and profits generated by R&D. [Căpraru et al. \(2021\)](#) also state that when competition is at a low level, this leads to an increase in the tendency of banks to take risks, which destabilizes the banking sector. This result agrees with the study of [Aldomy et al. \(2020\)](#), which found that increase

concentration leads to higher risk in the Jordanian banking sector. However, it is necessary here to emphasize that the decrease in concentration may not necessarily lead to an increase in competition. The result of [Demirgüç-Kunt and Martínez Pería's \(2010\)](#) study should be recalled here, which found that a decrease in concentration did not lead to an increase in competition in the same sector.

In the study by [Alhassan and Ohene-Asare \(2016\)](#), which was conducted on the Ghanaian banking industry, it was found that competition improves the cost efficiency of banks positively. This result is consistent with the results of [El Moussawi and Mansour \(2022\)](#), who found that competition increases both cost efficiency and stability of commercial banks operating in the Middle East and North Africa (MENA) region. [Wibowo \(2017\)](#) reveals that banking competition in ASEAN countries, especially in Indonesia, tend to be a monopolistic competition. Wibo found that banking competition decreases banking profitability while it does not affect banking efficiency. [Carlson and Mitchener \(2006\)](#) found that branch banking increases competition, which in turn improves the stability of the banking system by removing inefficient and weak banks. [Canta et al. \(2020\)](#) found that competition affects risk exposure positively. In addition, they found that competition decreases interest rates and increases loan volumes. However, they found that competition leads to difficulty in obtaining loans for small and newly established companies.

It can be seen from the literature above that there has been no attempt to empirically examine the effect of a competitive environment on *ITG*, let alone the effect of the matching between *ITG* and company's competitive intensity on the bank's performance. It is expected that the effectiveness of *ITG* will increase when the bank's competitive intensity is high because banks nowadays rely heavily on electronic services to increase their market share and thus increase their competitiveness, it is presumed that a greater interest in *ITG* should accompany this. On the contrary, the expansion in using IT could lead to a lack of control of it.

5. The Role of Situational Factors

It can be said that the effect of *ITG* on bank performance may also be affected by contingency factors, of which competition is one. Concerning this situational factor, banks are assumed to achieve a proper match between competition that they face in the market and the level of *ITG* to improve their financial performance.

It is well known that AIS is concerned with providing accurate, relevant, and cost-effective information in a timely manner to support business activities and processes. In this way AIS enables banks to be economically and socially effective in their competitive environment ([Wilkin and Chenhall 2010](#)). [Mia and Clarke \(1999\)](#) found that information mediates the relationship between competition and performance. By using information, organizations can face competition in the market effectively, and in turn improve their performance. Furthermore, the proper utilization of IT in improving the efficiency and the effectiveness of AIS, and in turn the proper *ITG*, will enable banks to be competitive. This is what [Boso et al. \(2013\)](#) confirm, although they talk about variables that differ from the variables covered by the current research, but they emphasize the need for a link between innovations within the company and the external environmental conditions of the company. They show that the extent to which companies benefit from innovations varies according to the company's competitive environment, as this benefit increases when competition is high, while these innovations do not work when competition is weak. [Kobelsky et al. \(2008\)](#) found that the effect of IT investments on performance is contingent upon three situational factors, which are size, unrelated diversification, and sales growth. They suggest that their results may help explain the productivity paradox of IT investments. [Gordon et al. \(2009\)](#) found that the relation between enterprise risk management and firm performance is contingent upon five factors, which are environmental uncertainty, industry competition, firm size, firm complexity, and board of directors monitoring. Their basic argument depends on examining the effect of the appropriate match between these contingent variables and enterprise risk management on firm performance. [Sirisomboonsuk et al. \(2018\)](#) found that *ITG*, project governance, and the alignment between *ITG* and project governance have a positive effect on project performance.

[Zhouhua \(2021\)](#) reviewed previous literature on situational factors that affect bank performance in China. He found that business strategy and organizational structure positively and significantly affect bank performance. However, regarding competition, Zhouhua found a negative and insignificant effect of competition on bank performance. [Saiful \(2017\)](#) found that the effect of enterprise risk management and credit risk management on Indonesian bank performance is strengthened in large banks and in banks operating in higher environmental uncertainty. In addition, Saiful found that this effect is also strengthened by higher complexity and lower independent board monitoring. [Jungo et al. \(2022\)](#) examined how the effect of financial regulation on competitiveness and financial inclusion is moderated by financial stability in the banking sector in 15 countries in the South Africa Development Community region and eight countries in the South Asian Association for Regional Cooperation region. They found that financial regulation obstructs financial inclusion and negatively affects competitiveness. They also found that financial stability strengthened the negative effect of financial

regulation on competitiveness and financial inclusion. Finally, [Wu et al. \(2015\)](#) found that the strategic alignment mediates the relationship between *ITG* and performance. [Maji and Hazarika \(2018\)](#) examined the influence of competition on the association between regulatory capital of Indian banks and their risk-taking behavior. They found a negative effect of competition on risk, which suggests that improving operational efficiency is vital in competitive markets.

Therefore, it is expected that the effect of *ITG* on a bank's performance will increase when the company's *ITG* is highly matched with its competitive intensity. That is because competitive intensity should motivate the company to increase its *ITG* effectiveness in order to be competitive, and it should affect the design of the bank's *ITG* system in a way that improves its performance.

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