



THE SPILLOVER EFFECT OF GOVERNMENT SPENDING ON BANKING PERFORMANCE IN KUWAIT

أحد مشاريع



رؤية بنك الكويت المركزي والبنوك الكويتية
تطوير الشباب الكويتي

The Winning Research Paper for the 2021
"Kuwaiti Economic Researcher Prize"

البحث الفائزة "بجائزة الباحث الاقتصادي الكويتي" لعام 2021

THE SPILLOVER EFFECT OF GOVERNMENT SPENDING ON BANKING PERFORMANCE IN KUWAIT

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الأثر غير المباشر للإنفاق الحكومي على الأداء المصرفي في دولة الكويت

هدف الدراسة: تبحث هذه الدراسة تأثير التدخل الحكومي على أداء الصناعة المصرفية في دولة الكويت وذلك من خلال دراسة العلاقة بين عامل التدخل الحكومي وربحية البنوك بواسطة تحليل نموذج محددات أداء البنوك. هذا وتساهم الدراسة في الأدبيات بتقديم أدلة تجريبية فيما يتعلق ببعض الجوانب الرئيسية التي تؤثر على الأداء المصرفي في الكويت من خلال التحقيق في الخصائص المحددة للبنوك وعوامل الاقتصاد الكلي والتدخل الحكومي. بالإضافة إلى ذلك، تحلل الدراسة دور التدخل الحكومي في النظام المصرفي الكويتي من خلال ما يسمى في "الثورة الكينزية"، كما يوضح النموذج التجريبي المستخدم في هذه الورقة تأثير الأزمة المالية على القطاع المصرفي الكويتي.

تصميم/منهجية/طريقة الدراسة: تم اختبار العلاقة من خلال استخدام نموذج المربعات الصغرى للبيانات المدمجة (POOLED OLS)، ونماذج الآثار الزمنية الثابتة (FIXED EFFECT) والعشوائية (RANDOM EFFECT). بالإضافة إلى ذلك فقد تم استخدام اختبار HAUSMAN من أجل اختيار النموذج التقديري المناسب بين نماذج الآثار الزمنية الثابتة والعشوائية، وتم أيضاً فحص العلاقة طويلة المدى بين المتغيرات المقدره من خلال اختبارين للاندماج المشترك؛ اختبار لوجه التكامل المشترك بيدروني (PEDRONI)، واختبار كاو (KAO) للاندماج المشترك.

العينة وبيانات الدراسة: تستخدم الدراسة بيانات سنوية لسبعة بنوك تجارية كويتية من عام 1993 إلى عام 2017، وتشمل البنوك التالية: بنك الكويت الوطني، وبيت التمويل الكويتي (بيتك)، وبنك الخليج، والبنك الأهلي الكويتي، وبنك الكويت الدولي، والبنك التجاري الكويتي، وبنك برقان. هذا وتشترط اللوائح التنظيمية لبنك الكويت المركزي أن تمارس البنوك التجارية في الكويت عملياتها المصرفية وفقاً لنظام مصرفي تقليدي أو نظام متوافق مع الشريعة الإسلامية، وقد شملت العينة المستخدمة البنوك التقليدية والبنوك المتوافقة مع الشريعة الإسلامية.

نتائج الدراسة: ووفقاً لنتائج الدراسة فالإنفاق الحكومي يؤدي إلى تدهور أداء النظام المصرفي، حيث يستنتج أن الإنفاق الحكومي الضخم يميل إلى مزاحمة دور القطاع الخاص في الاقتصاد من خلال حجب قنوات الائتمان على الصناعة المصرفية. وعند استخدام الإنفاق الحكومي الرأسمالي بدلاً من إجمالي الإنفاق الحكومي، فإن النتيجة تؤكد كذلك التأثير السلبي للإنفاق الحكومي على ربحية البنوك. كما تبين نتائج هذه الدراسة أن تأثير الأزمة المالية العالمية في عام 2008 على الأداء المصرفي في دولة الكويت كان واضحاً فقط خلال عامي 2008 و 2009، في حين تلاشى الأثر تدريجياً بعد عام 2009، مما يؤكد متانة الصناعة المصرفية الكويتية لمنع الذعر المالي العالمي.

ABSTRACT

Purpose: This study explores the relationship between government intervention and bank profitability by analyzing the determinants of bank performance. The study contributes to the literature by delivering empirical evidence regarding some main aspects that affect banking performance in Kuwait by investigating bank specific characteristics, macroeconomic factors, and government intervention. In addition, the study highlights the failure of government intervention in the banking system of Kuwait, which supports the nature of the "Keynesian revolution". Also, the empirical model used in this paper shows the impact of the financial crisis on the banking sector in Kuwait.

Study Design: The study uses panel techniques to estimate the regression models through applying pooled OLS, fixed effect, and random effect. In addition, the Hausman test is used in order to choose the appropriate estimated model between fixed effects and random effects. The long run relationship among the estimated variables is also examined through two panel cointegration tests; panel cointegration test of Pedroni, and Kao test for cointegration.

Sample and Data: The yearly data set covers seven commercial banks from 1993 to 2017. These are National Bank of Kuwait (NBK), Kuwait Finance House (KFH), Gulf Bank (GB), Alahli Bank of Kuwait (ABK), Kuwait International Bank (KIB), Commercial Bank of Kuwait (CBK), and Burgan Bank (BB). The Central Bank of Kuwait regulations requires commercial banks in Kuwait practice their banking operations in accordance with a conventional banking system, or Islamic Sharee'a compliant system. To capture such differences, the sample used includes both Islamic and non-islamic banks..

Results: Findings show that government spending in the Kuwaiti economy deteriorates the performance of the banking system. This suggests that massive government spending tends to crowd out the role of the private sector in the economy through limiting credit channels to the banking industry. Furthermore, findings show that the effect of the financial crisis on the banking performance was only pronounced during 2008 and 2009, whereas the effect progressively disappeared after the year 2009,

أصالة الدراسة: تحلل هذه الورقة العلاقة بين تدخل الحكومة وربحية البنك من خلال تحليل محددات أداء البنك، حيث تم اكتشاف قصور في الدراسات السابقة لتحليل تلك الجوانب كأحد العوامل المهمة والمؤثرة على ربحية البنوك في الكويت. لذلك، تساهم هذه الدراسة في الأدبيات من خلال تقديم أدلة تجريبية فيما يتعلق ببعض الجوانب الرئيسية التي تؤثر على الأداء المصرفي في الكويت باستخدام متغير يقيس التدخل الحكومي. بالإضافة إلى ذلك، تسلط الدراسة الضوء على فشل الحكومة في التدخل في النظام المصرفي الكويتي وذلك كدعم لنظرية "الثورة الكينزية".

حدود وتطبيقات الدراسة: هناك حاجة لإجراء مزيد من البحث في تأثير التدخل الحكومي على الربحية المصرفية كون تأثير الإنفاق العام على الخدمات المصرفية يعتمد بشكل أكثر دقة في تفاصيل الائتمان الخاصة بالميزانيات العمومية لكل بنك، ويتضمن ذلك تصنيف أنواع قروض الشركات للتحقيق في كيفية تأثير كل نوع من أنواع الائتمان بالإنفاق الحكومي الهائل في دولة الكويت. كذلك يُقترح أن تستبعد بيانات الإنفاق الحكومي أي إنفاق على السلع غير المعمرة، ذلك لأن الحكومة الكويتية عادة ما تنفق على السلع غير المعمرة أكثر من القطاع الخاص، وخاصة في التعليم والصحة، لذا يجب أن توجه هذه الأسئلة في الدراسات المستقبلية ذات الصلة.

المصطلحات الدالة: القطاع المصرفي، أداء البنوك، الإنفاق الحكومي، الكويت، بيانات المدمجة

INTRODUCTION

highlighting the strength of banking industry to prevent global financial panic.

Originality: This paper explores the relationship between government intervention and bank profitability by analyzing the determinants of bank performance. Previous studies have not explored the important aspects that affect bank profitability in Kuwait. Therefore, this study contributes to the literature by delivering empirical evidence regarding some main aspects that affect banking performance in Kuwait by investigating bank specific characteristics, macroeconomic factors, and government intervention. In addition, the study highlights the failure of government intervention in the banking system of Kuwait, which supports the nature of the “Keynesian revolution”. Also, the empirical model used in this paper shows the impact of the financial crisis on the banking sector in Kuwait.

Research limitations/implications: The effect of government intervention on banking profitability should be further investigated. The effect of public spending on banking depends on looking at the credit details of each bank’s balance sheets. This includes the disaggregation of corporate loan types to investigate how each type of credit is affected by massive government spending. It is also suggested that government spending data should also exclude any spending on non-tradable goods. This is because the Kuwaiti government usually spends more on non-tradable goods than the private sector, especially in education and health. These questions should guide future investigations.

Keywords: Keywords: Banking Sector, Bank Performance, Government Spending, Kuwait, Panel Data

JEL Classification: G21, L2, L25, C23

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Thoughts by “Keynesian revolution” are to admit the main role of the government intervention in the economy. However, ineffective interventionist policies including subsidization, protectionism, and taxations may result in failures in the market. Therefore, policymakers should make as few interventionist and regulatory policies as possible to ensure the marginal social costs of government intervention policies and regulations to be as small as possible than its marginal social benefits. In contrast, “laissez-faire” economics, which follows neoclassical monetarism, limits any unnecessary government interventions in the economy. The theory suggests that governments should cut social spending, reduce spending on privatization programs, and liberalize the financial market (Brown & Richmond, 1995) in order to let the market forces correct distortions in the economy.

Recently, the global financial crisis has forced policies favoring government interventions, contradicting the idea of free markets (Erixon & Sally, 2010). The government uses fiscal policy to influence economic activities, both fiscal expansions and contractions. However, expanding the fiscal policy may sometimes lead to the economy contracting. Specifically, more government intervention through higher government spending tends to harm the private investment of corporate firms, which eventually affects banking profits by reducing banking credit portfolios (Alesina et al., 2002).

Banking performance is often measured by the profits achieved through managed financial operations. However, profits are subject to bank specific factors, macroeconomic conditions (Athanasoglou et al., 2008), as well as decisions related to government policies (Sufian, 2011). Therefore, any structural changes in the banking industry including economic conditions, and public regulations may have an impact on banking performance (Athanasoglou et al., 2008). Linkages between government intervention and bank profitability have received little attention in the literature. In the finance literature, most studies have tackled the determinants of banking profits through mainly examining banking specific factors. But other studies, especially in economics, have investigated such linkages by also including macroeconomic factors

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(Supriyono & Herdhayinta, 2019; Dietrich & Wanzenried, 2011; Ben Naceur & Goaied, 2001; Berger, 1995). However, most of these studies have not accounted for how government intervention affects banking performance, although a few have (Djalilov & Piesse, 2016).

This paper explores the relationship between government intervention and bank profitability by analyzing the determinants of bank performance. Previous studies have not explored the important aspects that affect bank profitability in Kuwait. Therefore, this study contributes to the literature by delivering empirical evidence regarding some main aspects that affect banking performance in Kuwait by investigating bank specific characteristics, macroeconomic factors, and government intervention. In addition, the study highlights the failure of government intervention in the banking system of Kuwait, which supports the nature of the “Keynesian revolution”. Also, the empirical model used in this paper shows the impact of the financial crisis on the banking sector in Kuwait.

In this study, the impact of government intervention on banking performance is examined using commercial banks in Kuwait over the period from 1993 to 2017. Although there are almost ten national banks operating in Kuwait, only seven commercial banks were chosen as key representatives of the banking sector because of the unavailability of data from certain banks. A panel approach is applied using the fixed and random effect methods. The findings show that government spending is negatively affecting banking performance in the case of Kuwait; government intervention tends to crowd out private investment, which causes a shrink in the growth rate of banking industry’s credit. The panel cointegration test confirms the existence of the long run relationship among the estimated variables. The results also show that the global financial crisis of 2008 has had a pronounced effect on the banking performance in Kuwait. However, the effects disappeared two years after the crisis’ start.

This study is organized as follows. Section II provides an overview of the banking industry in Kuwait. Section III analyzes the relevant literature, and section IV explains the data. Section V presents the methodology and model specifications, and section VI describes the empirical findings. The conclusion and policy implications section are explained in section VII.

The banking sector in Kuwait plays an important role toward economic growth. Although the oil sector stills dominants the GDP, with an average range of 56% to 60% in the last eight years, the financial sector (including banking sector) is the second non-oil source of the GDP, with an average of 15% of the total GDP during the same period. Specifically, commercial banks enhance economic expansions through channeling funds to different private institutions in the economy. As shown in Figure (1) in Appendix (A), bank credit to the private sector (as a percentage of the GDP) increased from 17.16 % in 1993 to about 99.65% in 2017. This suggests the importance of credits granted to the private sector to boost economic development in Kuwait, as these credits are directed to main sectors in the local economy. These areas include the real estate sector, which had an average credit share of 23.6% of the total credit facilities; the trade sector, which had a credit share 10.4%; non-bank financial institutions, which had a credit share of 7.4%; the construction sector, which had a credit share of 6.5%; and industry sector, which had a credit share of 5.9%.

In Appendix (A), Figure (2) shows the growth rate of total assets for the banks in the Kuwaiti banking sector during the examined period of time. After deflating the date with the consumer price index, the real growth rate of total assets is shown in Figure (2). It can be observed that the real growth rate of assets has had a relatively stable path throughout the period from 1993 to 2017. The outlier of this trend was obviously seen between 1996 to 1998 at which the real growth rate jumped to its highest level of 85.1% in the year of 1997. But then the real growth rate of assets stated to have relatively stable path. The reason behind that was the drop in inflation rates during this period which was the result of a sharp decrease in the oil prices.

The movement of credit facilities provided by the banking sector in Kuwait, in Figure (3) of Appendix (A), has shown an increasing trend throughout the period. The data is in real terms as converted by deflating with the consumer price index. However, although the increasing overall trend had continued even after the financial crisis in 2008, the period of post 2008 has noticed with a slight reduction in the increasing trend.

It is noteworthy that the average annual oil price for OPEC crude oils rose from 23.12 US dollar per barrel in 2001 to 94.1 US dollar per barrel in 2008. This resulted in higher overall credit facilities, especially for the loans given to the oil and natural gas sectors. Although personal facilities account on average for about 38.5% of the total credit in the banking sector, the rest of the credit facilities funds other sectors in the economy, as shown in Figure (4), which shows the credit distribution among the main sectors. The data for total credit is converted to be in real terms by deflating with the consumer price index. Figure (4) also shows that the amount of credit was lower before 2008; however after 2008, the total amount of credit increased. Nevertheless, it also shows that the amount of credit given to these sectors, which are mainly private firms, have increased significantly since 1993, whereas, since 2008, the year of the financial crisis, increases in the amount of credit given have slowed dramatically. This suggests that the financial crisis has had an effect on the credit growth rate of the banking sector in Kuwait, even though after 2008, the amount of credit reached higher levels than in previous years.

According to Figure (5), government spending had an overall upward trend during the period from 1993 to 2017. Interestingly, before 2001, the public spending increased in a steady manner; however, after 2001, spending increased to very high levels. The thinking behind this shift in spending was related to jumps in oil prices during the same period. This reflects the behavior of the policymakers, who spend more as oil prices increase. But even when oil prices slow down, spending cannot be reduced to the same level as before due to political and social considerations as well as the government attitude toward the role it should play in the economy. During the same period, the performance of the banking sector in terms of its profits showed unstable signs. Notwithstanding that Kuwaiti banks are performing well in terms of profitability, the average Return on Assets (ROA) of the banking sector as presented in Figure (6) perform in levels lower than before. Despite the adverse effect of the global financial crisis on Kuwaiti banks in terms of profits, it is clear that these banks still attained profits during and after the crisis; the ROA averaged 0.06% during the period prior 2008 compared to an average of 0.03% in 2008.

Accordingly, during the time period of this study, massive government spending in Kuwait went in line with the slowing trend of giving banking credit to different private sector institutions. This, in turn, slowed the average trend of the ROA, which indicates how government spending negatively affects banking performance as an evidence of a spillover effect of government spending at the banking performance.

LITERATURE REVIEW

Many different studies have tested the determinants of banking profitability across countries; they have focused on the standard internal and external banking factors (Supriyono & Herdhayinta, 2019; Dietrich & Wanzenried, 2011; Ben Naceur & Goaid, 2001; Berger, 1995). However, very few of them have explored how government spending affects banking profitability (Djalilov & Piesse, 2016), which is a glaring gap in the literature, as government spending is a crucial determinant affecting the performance of the financial sector (Djalilov and Piesse, 2016). The effect of government spending varies across countries, and there is no ideal level of government spending (Djalilov & Piesse, 2016). Nevertheless, measures for measuring banks profitability across the literature are consistent. The ROA is the most common measurement used by studies to show net profits (Supriyono & Herdhayinta, 2019; Buchory, 2016; Buchory, 2015; Muhammad & Siddiqui, 2011; Aburime, 2008; Naceur, 2003; Molyneux & Thornton, 1992).

A study by Supriyono and Herdhayinta (2019) investigates the main determinants of 27 Indonesian banks during the period between 2011 and 2015. Importantly, their findings show inflation to negatively affect profits. Another study by Kosmidou et al. (2004) investigates factors affecting banks' profitability in UK using data from 32 banks during the period from 1995 to 2002. Their findings show that GDP, the bank's capital, and inflation were positively related to profitability. A study by Vong and Chan (2009) finds that nonperforming loans, deposits, and loans to have a negative impact on the profitability of banking sector in Macau during the period of 1993 to 2007; the variable of inflation, however, positively affected profitability. Moreover, the interest rate did not seem to affect the profits of the banking industry in Macau during the examined period. Similar results are also found by Miller and Noulas (1997).

Perry (1992) argues that inflation does not consistently affect bank's profitability in a negative direction; however, the significance of the finding depends on the anticipation of inflation as well. Similarly, a study by Naceur (2003) finds that inflation does not affect banks' profitability, whereas the variable of interest margin loans positively affects profitability in the case of Tunisian banking sector. A study by Kosmidou (2008) finds a positive impact of inflation on banks' profitability in the case

of the Greek banking sector. Other studies have also found that inflation significantly influences bank profitability (Tan & Floros, 2012).

Concerning whether the variable of liquidity influence banks' profitability, the research results have been mixed (Hesse & Poghosyan, 2016; Manikam, 2013; Kosmidou, 2008; Stein, 1998; Molyneux & Thornton, 1992; Bourke, 1989). For European banks, Molyneux and Thornton (1992) have shown that the relationship between liquidity and bank profitability is negative. A study by Graham and Bordeleau (2010) argues that when banks hold a certain level of liquid assets, the banks' profitability will improve. However, there is a maximum level at which any further holding of liquid assets would reduce profitability. Another study by Nure (2019) finds a positive impact of liquidity on banks' profitability in the case of Albanian banking sector during the period from 2012 to 2017.

Fewer studies have examined the performance of banking industry in Middle Eastern countries. Hesse and Poghosyan (2016) examine the impact of oil price shocks on banks' profitability for 145 banks for the main oil-exporting countries across the MENA region. Their findings show the statistically significant indirect impact of oil price shocks through using macroeconomic as well as bank specific factors; however, the direct impact of oil prices is statistically insignificant. Specifically, the liquidity variable seems to be statistically significant, as it positively affects profitability. However, inflation does not significantly influence profitability.

Al-Omar and Al-Mutairi (2008) have investigated the determinants affecting the profitability of the Kuwaiti banking industry during the period from 1993 to 2005. They find no significant relationship between loan ratios and assets ratio, and operating expenses on the banking profitability. Similar study for the case of Kuwait is conducted by AlAli (2019) at which he has investigated both internal and external factors influence on banking profitability. However, both studies only examined bank specific factors as determinants of banking profitability.

As far as the importance of modeling government spending to help banks' profitability determinants, banking capitalization may be improved

when government spends in the financial markets (Smallbone & Welter, 2001). Djalilov and Piesse (2016) have examined the impact of government spending on bank profitability for the transitional economies in Central and Eastern Europe region during the period of 2000–2013. Their findings show that government spending tends to negatively affect the profitability of banks in late period of transitional economies. They measured government spending by using a scale that ranges from 0 (lowest spending) to 100 (highest spending), and they conclude that too much spending or too little spending by governments may negatively affect banks' profitability; however, the impact becomes positive when spending is in at a moderate level.

A study by Aka (2019) investigates factors determining banks' profitability in the Turkish banking sector during the period of 2010 to 2018. He finds that variables of asset size and leverage ratio are important to influence the banks' profitability. Another study by Lee and Hsieh (2013) finds that the real interest rate has a significant impact on banks profitability in the case Asian banking during the period of 1994 to 2008. In addition, a study by Abdul Hadi et al. (2018) uses a sample of different regions, including Middle East, from 2009 to 2016 to determine the banks' profitability. Aladwan (2015) examines the impact of banking specific factors on bank profitability for the case of Jordanian banks and concludes that profitability changes with a change in banking assets. Hassan et al. (2018) find that efficiency is a variable that determines the performance of Saudi Islamic banks. Another study by Almazari, and Almumani, (2012) finds a significant relationship between banking assets and profitability efficiency for Saudi national banks.

DATA DESCRIPTION

This paper applies annual data covering the period from 1993 to 2017 for seven national commercial banks in Kuwait: National Bank of Kuwait (NBK), Kuwait Finance House (KFH), Gulf Bank (GB), Alahli Bank of Kuwait (ABK), Kuwait International Bank (KIB), Commercial Bank of Kuwait (CBK), and Burgan Bank (BB). According to the Central Bank of Kuwait regulations, commercial banks in Kuwait practice their banking operations in accordance with a conventional banking system, or Islamic Sharee'a compliant system. As a result, there are five banks representing the conventional banking system in the sample, which are NBK, GB, ABK, CBK, and BK, and two banks represent the Islamic Sharee'a compliant system, which are KFH, and KIB. Currently, the banking system in Kuwait includes ten national commercial banks, among which five are conventional and five are Islamic. As a result, the sample was chosen to include the available data for the time period and exclude banks with fewer data. Some of these excluded banks became more established later in the period, such as Al Ahli United Bank, Boubyan Bank, and Warba Bank.

Data for the bank specific factors included in the sample were obtained from the database of the Institute of Banking Studies in Kuwait and include ROA, total assets, and liquidity. Data for variable of government expenditure were obtained from the World Bank database. Data for real interest rate, investment, and inflation were obtained from International Financial Statistics (IFS), which is published by the International Monetary Fund (IMF).

The ROA variable measures the ratio of the net banking income to the total assets in the local national currency (KD). The total loans are also in the local currency. The data for the liquidity variables are measured by the ratio of liquid assets to total assets, and they are also in the local national currency.

Inflation data are measured by the percentage change in the Consumer Price Index. The data for government spending measure all expenditures from the government in the local currency, including goods and purchases as well as government spending on national defense and security. Data for the real interest rate are indicated by the lending interest rate, which is measured by the GDP deflator in order to adjust for inflation.

METHODOLOGY

According to the literature on the banking performance, previous studies have identified factors that determine the profitability of banks in different countries. Although the group of bank specific factors, or what is referred to as internal factors, is classified in early studies (Bourke, 1989; Short, 1979), the majority of later the studies consider both macroeconomic factors (external factors) as well as bank specific factors (internal factors) group to determine the performance of the banking sector (Naceur & Omran, 2011; Hsieh & Lee, 2010; Ben Naceur & Goaided, 2008; Mamatzakis & Remoundos, 2003; Molyneux & Thornton, 1992). As this study focuses only on national banks, not foreign ones, the dissimilarities in profitability determinants between these banks are slim.

In general, the impact of government intervention on banking profitability can be estimated using a model that is similar to the one used by Romer and Romer (2010) in investigating how the change in the taxes would affect the economic growth:

$$Y_{it} = v_i + \mu_t + \sum_{j=0}^j \beta_j \Delta(X_{i,t-j}) + \varepsilon_{i,t} \quad (1)$$

According to specifications of the structural model, Y represents the dependent variable, X represents the set of independent variables, β 's are parameters that need to be estimated, i indicated the country, t represents time, v is country specific effects country, μ is time-specific effects. ε is the error term.

Accordingly, following the approach by Romer and Romer (2010), this study revises models (1) to investigate the determinants of banks on banking performance. Banking determinants include the bank specific factors containing total assets and the liquidity ratio, whereas the other determinants of macroeconomic factors cover inflation, investment, and interest rates. Finally, the spillover effect of government intervention into the economy can then be captured by our interest variable, which is government spending. Following the structural model by Berger, Demirgüç-Kunt et al. (2004), and Athanasoglou et al. (2008). The general linear form of the model to determine the banking performance is shown in equation (2) as follows:

$$BP_{it} = f(IF_{it} + EF_t + GI_t) \quad (2)$$

where i represents specific banks; t represents time; BP_{it} indicates banking performance for the specific bank i during the time period t , this factor represents the banking profitability as a proxy for banking performance; IF_{it} indicates bank specific factors for the bank i during the time period t ; EF_t represents macroeconomic factors at time period t ; and, finally, GI_t indicates the government intervention factor at time period t .

Although this study focuses on the impact of government intervention on banking performance, related bank specific factors as well as macroeconomic characteristics should be controlled for in order to determine their influence on banking performance in the case of Kuwait.

The study uses panel techniques to estimate the regression models through applying pooled OLS, fixed effect, and random effect. In addition, the Hausman test is used in order to choose the appropriate estimated model between fixed effects and random effects. Particularly, the model of fixed effects can be specified as the following equation (3):

$$BP_{it} = \alpha_i + \beta'X_{it} + \varepsilon_i, \quad i = 1, \dots, N; t = 1, \dots, T \quad (3)$$

where BP_{it} indicates the dependent variable, which is banking performance; the vector of independent variables can be captured through X variable indicates the dependent; and coefficients of i, N, α_i are the constant individual coefficients to a particular bank i , and they are not all equal. According to the fixed effects method, any differences that appear among the banks are explained through the constant term α_i . The coefficients of the specific time variant differences are carried out by β , which is the vector of the coefficients.

According to the random effects method, however, the error term should be modeled to represent the error component disturbances as the following equation (4):

$$BP_{it} = \beta'X_{it} + \varepsilon_{it}, \quad i = 1, \dots, N; t = 1, \dots, T \quad (4)$$

where the error component disturbances can be indicated by two components $\varepsilon_{it} = \mu_i + w_{it}$, assuming that the individual specific effects are normally distributed and random.

Following the literature, the general linear estimated model is used to identify the banking performance. The model as explained in equation (2) includes three components of factors: bank specific variables, other macroeconomic variables, and the government intervention variable. This model follows closely the work of several studies in the literature (Djalilov & Piesse, 2016, Graham & Bordeleau, 2010; Molyneux & Thornton, 1992), and it is in the following form:

$$BP_{it} = \alpha_i + \beta_1(Size)_{it} + \beta_2(Interest\ Rate)_{it} + \beta_3(Liquidity)_{it} + \beta_4(Inflation)_{it} + \beta_5(Investment)_{it} + \beta_6(Gov.\ Intervention)_{it} + \varepsilon_i, \\ i = 1, \dots, N; t = 1, \dots, T \quad (5)$$

The dependent variable, represented by " BP_{it} ," explains the banking performance measured by the ROA, which indicate the efficiency of the bank to use resources in order to make net revenue (Golin & Delhaise, 2013; Hassan & Bashir, 2003). For the explanatory variables, the variable "Size" indicates the size of each specific bank using a proxy of total assets in the local national currency; the variable "Interest Rate" denotes the real interest rate; the variable "Liquidity" refers to the ratio of liquid assets to total assets; the variable "Inflation" represents the general price level in the country indicated by the percentage change of the Consumer Price Index; "Investment" indicates the investment share measured by the gross capital formation as a percentage of GDP; "Gov. Intervention" measures the amount of government spending in local national currency; and " ε_i " represents the error term.

According to the literature, all the explanatory variables have direct impact on the banking performance representing by banking profitability. The impact of the size variable is to have a positive impact on banking performance. This suggests that the increase in assets will increase the likelihood of the use of fund in the banking balance sheet. This may improve the possibility of higher profits made by banks (Bahrini, 2017; Sillah & Harrathi, 2015; Naceur, 2003). As far as for the liquidity variable, the relationship is to positive affecting banking performance. Higher share of liquidity discourages the probability of solvency risk and that

would enhance higher profits for banks (Alexiou & Sofoklis, 2009). For the variable of investment, the relation is expected to be positively related to banking profitability. Higher investment in the economy encourages more banking operations which enhance more profits gained by banks. For inflation variable, the impact is expected to be negative on banking profits. This occurs as higher inflation pushes future loans to be more costly for customers, which shrinkages revenues for banks (Bourke, 1989; Hoggarth & Wood, 1998; Molyneux & Thornton, 1992; Smirlock, 1985). Furthermore, the real interest rate is expected to influence negatively banking profitability. However, the impact has not been widely investigated in previous studies, with the exception of a few studies, such as Demirgüç-Kunt and Huizinga (1999) and Borio, Gambacorta, and Hofmann (2015). It is then expected that the real interest rate represents the macroeconomic indicators, in which an increase in the rate represents a higher interest margin return on investment, which generates more bank profits.

This empirical research contributes to the literature, particularly the work of Djalilov and Piesse (2016), by extending the model by including government intervention, which is measured by government spending. Although Djalilov and Piesse (2016) use score indicators to represent government spending, this study uses actual spending by the government to analyze the spillover effect of government intervention into an oil-based economy. It is expected that when the government spends more, it actually crowds out the private sector and negatively affects a bank's ability to lend to the private sector to execute projects and economic activities. This will also be true for a government that spends money mainly out of its oil revenue, which would isolate the role of banking industry, such as the case of Kuwait. Furthermore, this study examines the impact of the 2008 financial crisis on banking performance in Kuwait and how long the financial crisis lasted.

EMPIRICAL RESULTS

In appendix (B), the summary statistics are shown in Table (1) for the variables estimated in the study. This includes the dependent variable of banking performance represented by ROA as well as the determinants of banking performance: bank specific variables, macroeconomic variables, and the government intervention variable. For each variable, the mean value, maximum value, minimum value, and standard deviation are reported. For the dependent variable, the average value of ROA during the sampled time period is 0.0142286, with the highest ROA value of 0.04 belonging to the KFH and the lowest ROA value of -0.07 belonging to the GB for the year 2008, when this bank was hit by the global financial crisis but was protected effectively through the regulations of the Central Bank of Kuwait. The standard deviation for the ROA is 0.0111084, which is reasonably low. Regarding some of the selected independent variables, the size variable, represented by the average value of the total assets variable, is 7.90384. The maximum value recorded is 10.16718 for the NBK, which holds the highest total assets in the banking sector. The minimum recorded is 5.795121 for BB, which has the lowest average total assets in the banking sector. In term of inflation rate variable, the average inflation is 2.954921 and ranges from a minimum of 0.12% in 1998, when oil prices were at their lowest value, compared to a maximum value of 10.5% in 2008, when oil prices were at their highest value. In terms of the real interest rate variable, the average rate is 4.74713, with the lowest value being -12.1442 % and the highest value being 40.85991%. The standard deviation is 14.05134 and is widely spread around the mean value, which is due to the fluctuations in the inflation rate as well as in oil prices. For the government intervention variable measured by government spending, the standard deviation is 0.483902, which is a quite low and indicates that there is a small difference in the trend of government spending during the time period.

The correlation matrix is shown in Table (2) of Appendix (B), and it addresses the issue of multicollinearity among the variables. Accordingly, the findings of the correlation matrix show no evidence of multicollinearity occurrence among the variables, which suggests that the coefficients used in the regression model are precise.

In order to proceed with estimating the panels, the Levin Lin Chu unit root test is implemented to examine the stationary of the variables. According to Table (3), the findings of the test show the variables to be stationary at lag (1). With the such series, the panel approach can be implemented using pooled OLS, fixed effects and random effects in order to account for any time and country heterogeneity.

In Table (4), the results of the benchmark model are displayed using pooled ordinary least square (OLS) regressions. The regression model is estimated with the White robust standard error to control for heterogeneity, and the findings show that all the estimated coefficients for the determinants of banking performance in Kuwait are statistically significant with the exception of one variable. For the banking specific factors, the "Size" coefficient is highly significant with a 1% level of significance, which suggests that the amount of assets held by a bank determines its profitability. The "Liquidity" variable, in contrast, is statistically insignificant. In terms of the three macroeconomic factors (Interest Rate, Inflation, and Investment), their estimated coefficients are statistically significant. The impact of the interest rate on bank profitability is highly significant with a negative sign, which suggests that higher real interest rates cause the profits of banks to drop. The estimated coefficient "Inflation" variable is statistically significant with a 5% level of significance. This result indicates that a higher inflation rate leads to lower purchasing power due to higher production costs, which may cause lower profits for the banking industry. For the variable of "Investment," its estimated coefficient is statistically significant with a 10% level of significance, which suggests that a higher share of investment to GDP leads to more economic activities in the economy, leading to more banking profitability.

For the variable of "Government Intervention," indicated by government spending, its estimated coefficient has a negative impact on banking profitability, as it is statistically significant with a 1% level of significance. This suggests that higher government intervention into the economy crowds out the role of the private sector, which negatively affects credit lending in banking sector.

In Table (5), the findings of the fixed effects and random effects regressions are reported, with a White robust standard error in the first and second columns. For the fixed effects, the estimated coefficients of all the factors are statistically significant. The findings show the impact of the "Size" variable is estimated to be positively related to bank performance and is statistically significant, with a 5% level of significance. An expansion of the bank's size in terms of "assets" generates better bank performance in terms of profits. For the "Liquidity" variable, its estimated coefficient shows negative influence on bank performance and it is statistically significant with 1% level of significance. Furthermore, the holding of "liquidity" leads to lower bank profitability. As for the macroeconomics factors, the interest rate is estimated to be statistically significant with a 1% level of significance. Higher interest rates tend to reduce bank profitability, as higher interest rates represent higher costs. For the "Inflation" variable, its estimated coefficient is statistically significant, with a 1% level of significance. The estimated coefficient for the investment variable is statistically significant with a 5% level of significance, which suggests that higher investment in the economy leads to improved banking performance. Higher investment encourages more credit through the banking sector, which results in better bank profitability. As for the interest variable, which is government intervention, the findings show that the estimated coefficient is statistically significant, with a 5% level of significance. The findings also suggest that higher government intervention through government spending crowds out the role of the private sector and its profitability. As a result, this hinders the banking performance through lowering the profits gained.

According to the random effects regression, all of the estimated coefficients for the determinants of the banking performance in Kuwait are statistically significant and show the expected signs with the exception of the liquidity variable. The findings of the random effects regression are shown to be consistent with the fixed effects regression with the exception of the liquidity variable.

In Table (6), the test of Hausman is employed to choose the appropriate estimated regression model between fixed effects or random effects. The

findings of the Hausman test favors using the fixed effect model, as the $\text{Prob} > \chi^2$ equals 0.0473, which is less than 0.05.

Therefore, results can then be interpreted according to the fixed effect model shown in Table (4). All of the estimated coefficients in the fixed effects model are statistically significant. The results show that banking specific characteristics, macroeconomic factors, and government intervention all affect banking performance. The estimated coefficient for "Size" suggests that larger banks in Kuwait tend to generate higher profit. Specifically, the larger the size of the banking sector in terms of assets by 1% leads to an increase in ROA of about 0.00008%. Although banking size positively influences on banking performance across the Kuwaiti banking industry, the effect is minimal. This finding is consistent with several studies in the literature (Eichengreen & Gibson, 2001).

In terms of the interest rate coefficient, the findings suggest that if the real interest rate in the economy is higher by 1%, the banking performance will lower by 0.0002%. Thus, high real interest rate levels put pressure on the banking industry in terms of higher costs, despite being a small effect, which hinders the bank's performance. Such a finding is in line with other studies in the literature, such as Lee and Hsieh (2013) and Guru et al. (2002).

In terms of the "Liquidity" variable, its estimated coefficient shows that when Kuwaiti banks hold higher liquidity in order to cope with financial risks, it generates lower profitability across these banks. Although the negative effect is small in terms of the magnitude, as shown in Table (5), it corresponds with the results of other studies in the literature (Sufian & Habibullah, 2009; Kosmidou, 2008; Ghannadian & Goswami, 2004). The finding indicates that Kuwaiti banks can manage any liquidity problem by arranging their funds to meet any unpredictable fund withdrawals by depositors.

For the "Inflation" variable, its estimated finding suggests that during an inflationary environment, banks in Kuwait experience lower profits. This result is also supported by other findings, such as Supriyono and Herdhayinta (2019), Zeitun (2012), and Boyd and Champ (2006).

Regarding the "Investment" variable, its estimated coefficient suggests that higher contribution of investment tends to enhance profitability in the banking sector. Such a finding is expected, as higher investments are associated with a more productive local economy, since they would improve the credit channels in the banking sector. Although there is a positive relationship between investment and the banks' performance, the size of the effect is actually small: as the investment share of the economy increases by 1%, banks profitability tends to increase by around 0.0004 % .

As for the government intervention variable, its estimated coefficient is statistically significant at the 5 % level, with a negative sign. This result is consistent with using the pooled OLS, fixed effects, and random effects approaches. The estimated coefficient can be explained as follows: a 1 % increase in the government spending leads to a 0.0001 % reduction in the banking profitability. High spending by the government tends to crowd out the role of the private sector, which limits the credit pool of the banking sector in Kuwait. In addition, the findings show that banking industry in Kuwait suffers from massive government spending, which has a negative effect on the private sector in the local economy. This fact presents the role of government spending to create crowding-out effects which adversely influence both the consumption and the investment of private sector (Furceri & Sousa, 2011).

The existing long run relationship among the estimated variables can also be conducted through two panel cointegration tests as in Table (7). According to the Aho cointegration test, the test statistics of Modified Dickey-Fuller, Dickey-Fuller, Augmented Dickey-Fuller, Unadjusted modified Dickey-Fuller, and Unadjusted Dickey-Fuller suggest the rejection of the null hypothesis of no cointegration which supports the alternative hypothesis of all panels are cointegrated in the long run. Similar results are obtained according to the other panel cointegration test of Pedroni.

The result for the negative impact of government spending on bank profitability is even confirmed using capital spending instead of total government spending as presented in Table (8). The finding of this regression model shows that the higher the capital spending the lower the bank profitability. The estimated coefficient is statistically significant with 10% level of significance.

Furthermore, the study reexamines the estimated model using different specifications in Table (9), where another explanatory variable is used to control for the financial crisis in 2008. The appropriate fixed effect model is estimated again in Table (9). Notably, the financial crisis dummy reflects the financial crisis that started in 2008. The dummy takes a value of one for 2008 and 2009, and zero otherwise. In order to assess the long-lasting effect of the financial crisis on the banking sector, another dummy variable is used to represent the period after the financial crisis, and it covers the years of 2010, 2011, and 2012. The dummy then takes a value of one during these years, and zero otherwise. The findings show that the financial crisis dummy in column two in Table (9) is statistically significant at the 1% level of significance, which negatively affects the banking performance in Kuwait. By looking at the post financial crisis effect, its dummy in column three at Table (9) tends to be statistically insignificant. This suggests that the influence of the financial crisis was diminished significantly in the applicable period due to the prudential regulations implemented by the Central Bank of Kuwait during the financial crisis, which helped prevent financial panic in the economy.

In further analysis, The bank specific power of the market can be captured through level of concentration in the banking sector. According to previous studies, there are mixed effects of concentration affecting the profitability in the banking sector (i.e Athanasoglou et al., 2008; Claeys and Vander Vennet, 2008; Naceur and Omran, 2011; Trujillo-Ponce, 2013). The banking concentration is measured through the share of loans for the top banks to aggregate loans. Therefore, the factor of banking concentration is tested in the model to examine the importance of bank specific factors affecting banking profitability in Kuwait. Table (10) shows the impact of banking concentration using three specifications of banking concentration; the concentration of the largest bank, concentration of the largest two banks, and concentration of the largest three banks.

Findings show that the impact of banking concentration is to be statistically significant with a negative sign suggesting the higher banking concentration then the lower the banking profitability in Kuwait. The magnitude of the effect is bigger for the case of the largest

bank concentration for around 0.098 percent. Such factor measures the market competition degree or the same time the market monopoly degree (Rinkevičiūtė and Martinkute-Kauliene, 2014). Such finding supports the view of “concentration fragility” which assumes the high market concentration by few large firms to lead to less stability for the firms. This is as these firms are to be exposed to higher risks supporting the policy of “too big to fail” (Rinkevičiūtė and Martinkute-Kauliene, 2014; Berger et al., 2004).

CONCLUSION AND POLICY IMPLICATIONS

This research study investigates the impact of government intervention on banking performance in Kuwait. Specifically, the study explores several determinants of banking profitability focusing on the government spending variable as a proxy for government intervention. The study examines the model using different econometrics specifications with yearly data between 1993 and 2017. The results of the study reveal that banking specific characteristics, macroeconomic, and government intervention factors are important determinants of banking profitability in the Kuwaiti banking industry. The size of the banks and the investment shares directly influence banking profitability; whereas liquidity, real interest rates, and inflation rates are inversely related to banking profitability.

Importantly, the government intervention variable is a significant variable that affects banking profitability. The findings show that government spending plays a role in discouraging banking profitability, including for the different econometric specifications of pooled OLS, fixed effects, and random effects techniques. Such finding is supported using capital government spending instead of total government spending. In fact, most firms in Kuwait finance their projects through loans from commercial banks; thus, more spending by government tends to decrease investment and consumption spending by private sector in the economy. Such spending hurts private investment opportunities by cutting investment, which leads to a slowdown of growth. As a result, companies would not engage in capital investment and projects. Specifically, increases in government spending dampen the search for finance from commercial banks. Eventually, this will slowdown funds obtained from these banks.

This study also shows that the impact of the financial crisis on the banking sector in Kuwait through the regulations imposed by the Central Bank of Kuwait. These regulations included guiding commercial banks to strengthen their provisions against unnecessary risks. The Central Bank of Kuwait also implemented additional regulations concerning the banks' capital and liquidity. In addition, the bank reintroduced the deposits warranty to avoid financial panic. All of these regulations helped

the banking industry to more or less successfully pass through the global financial crisis.

This study's findings have several policy implications. First of all, the results show evidence that banking specific factors as well as macroeconomic factors affect banking performance. Therefore, in order to formulate a monetary policy, there is a need to create a suitable economic environment through addressing macroeconomic factors (such as inflation, interest rate, and investment shares) and using appropriate policies to enhance financial stability.

In addition, based on findings of this study, government intervention through public spending may interrupt private investment, which limits the credit growth of the banking sector. It is known that any initial rise in spending by the government is generally financed by either imposing higher taxes or borrowing. This forces private firms to access debt mechanisms through borrowing from the banking sector, which supports the role of private corporate firms in the economy. However, in the case of Kuwait, higher public spending is funded by higher oil rent, and debt financing is not effectively implemented to engage the private sector. Thus, it is time to revisit the effectiveness of fiscal policy in Kuwait by taking into account that changes in government spending have a larger influence on private investment and profits than taxation (Alesina et al., 2002). Accordingly, government spending should also be redirected toward economic activities that are of less interest to private firms in order to avoid being a competitor to private firms in these activities. However, a transitional period to implement such reforms is important to avoid any adverse effect for the role of banks in enhancing economic activity effectively.

Furthermore, although the monetary authorities in Kuwait has been effective in limiting the influence of the financial crisis on the financial sector, the world economy is still facing serious challenges that may affect the pace of its recovery and slow economic growth; moreover, uncertainty and risks may lead to negative economic developments. Concerns about monetary policy mechanisms have also increased, especially with interest rates moving toward zero or even negative percentages as well as

trade imbalances between countries. It may then be more insightful for monetary authorities in Kuwait to rely more on non-traditional monetary tools,, including increasing quantitative liquidity by taking into account the stability of the profitability of the banking sector.

According to the results obtained in this study, the effect of government intervention on banking profitability should be further investigated. The effect of public spending on banking depends on looking at the credit details of each bank's balance sheets. This includes the disaggregation of corporate loan types to investigate how each type of credit is affected by massive government spending. It is also suggested that government spending data should also exclude any spending on non-tradable goods. This is because the Kuwaiti government usually spends more on non-tradable goods than the private sector, especially in education and health. These questions should guide future investigations.

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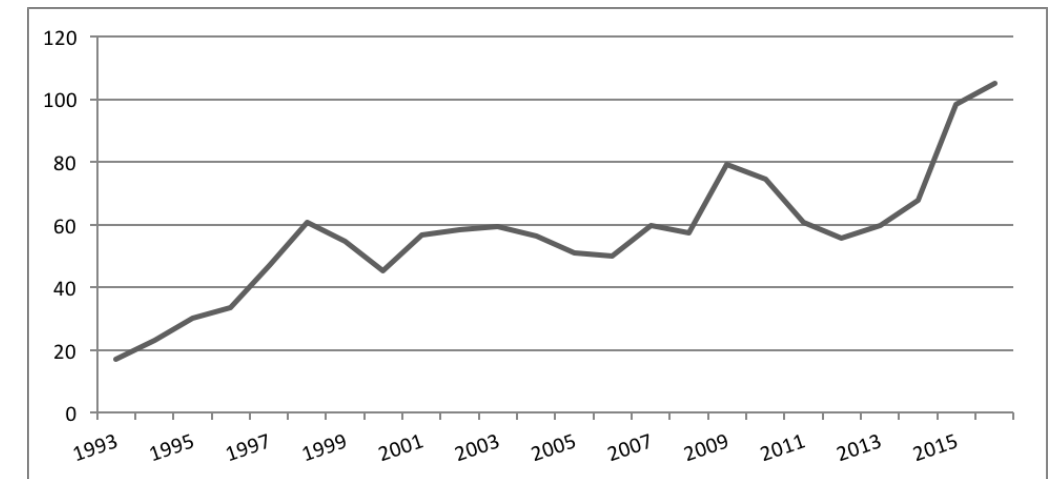
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Vong, P., & Chan, H. .2009. Determinants of bank profitability in Macao. *Macau Monetary Research Bulletin*, 12(6), 93-113.

Zeitun, R. .2012. Determinants of Islamic and conventional banks performance in GCC countries using panel data analysis. *Global Economy and Finance Journal*, 5(1), 53-72.

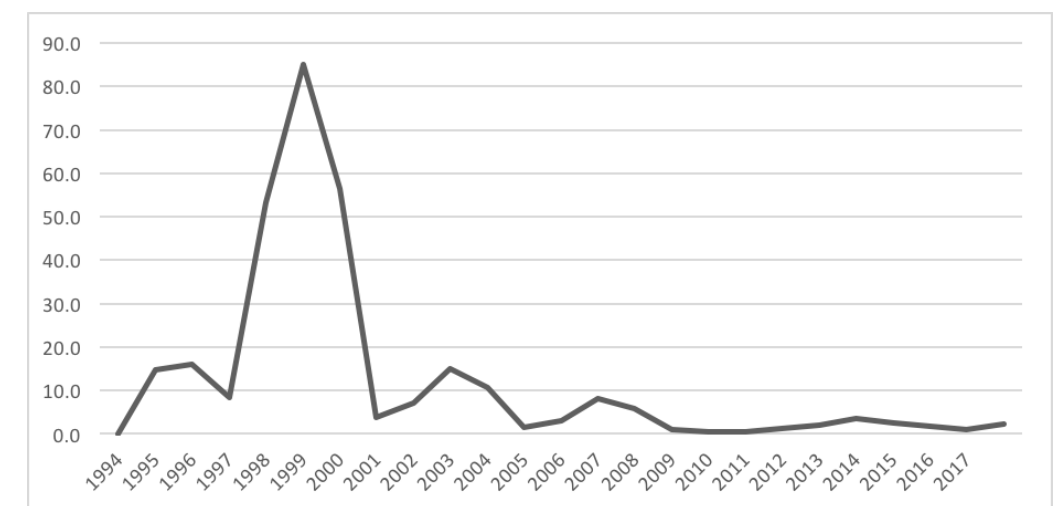
Appendix (A): Figures

Figure (1): Domestic Credit to the Private Sector (% of GDP)



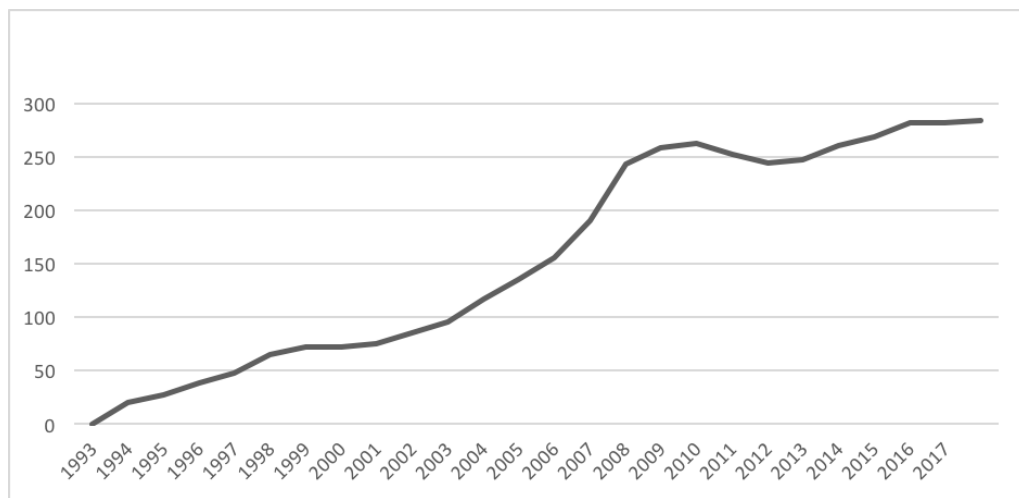
Source: World Bank

Figure (2): Real Growth Rate of the Total Assets of the Banking Sector (%)



Source: Central Bank of Kuwait

Figure (3): Real Growth Rate of the Credit Facilities of the Banking Sector (%)



Source: Central Bank of Kuwait

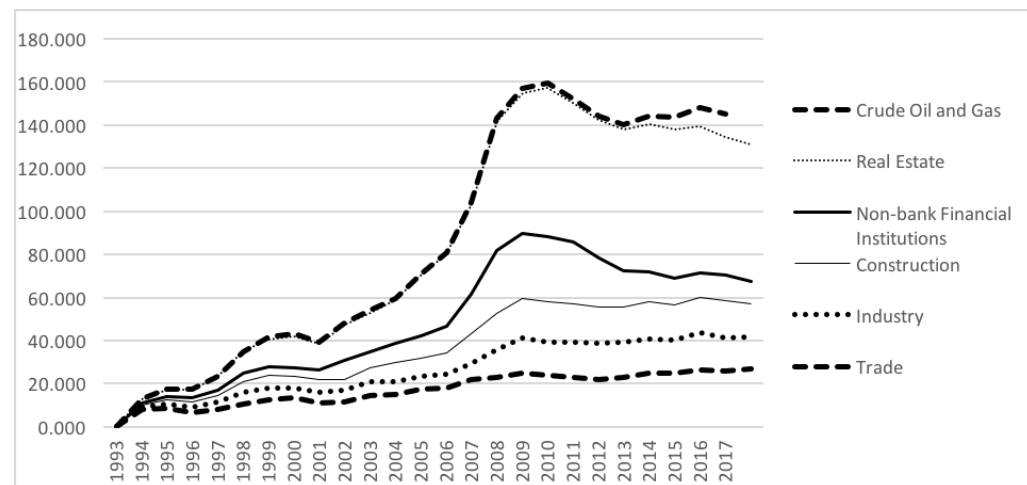
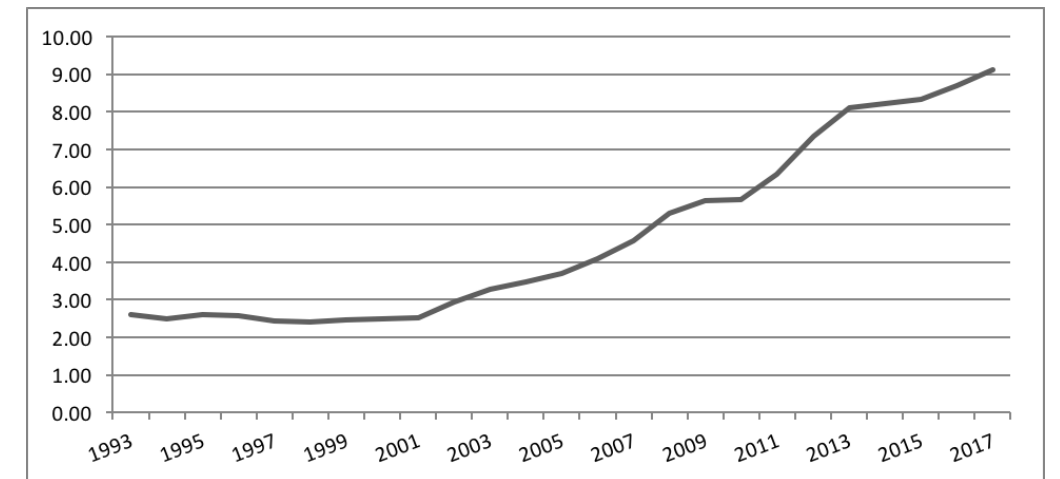


Figure (4): Real Credit Facilities by Sector (Million KD)

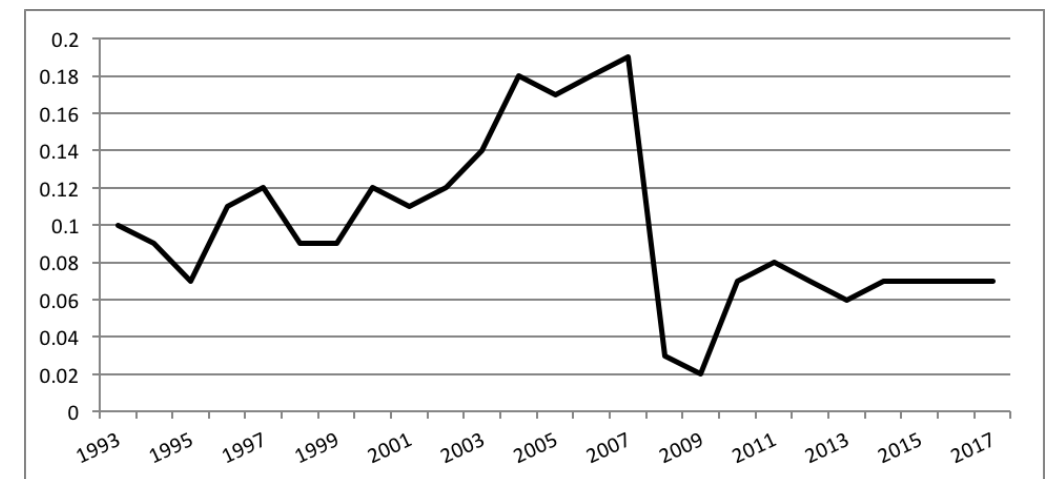


Source: Central Bank of Kuwait

Figure (5): Government Spending (Billion KD)

Source: World Bank

Figure (6): Average ROA of the Banking Sector



Source: Institute of Banking Studies in Kuwait

Appendix (B): Results

Table 1. Summary Statistics

	Observation	Mean	Std. Dev.	Minimum	Maximum
Year	175	-	-	1993	2017
ROA	175	.0142286	.0111084	-.07	.04
Size	175	7.90384	.9556856	5.795121	10.16718
Interest Rate	175	4.74713	14.05134	-12.1442	40.85991
Liquidity	175	1649.838	1807.162	83.75	10312.63
Inflation	175	2.954921	2.114923	.1296583	10.58271
Investment	175	17.2788	4.26174	10.66551	29.07336
Government Intervention	175	22.15125	.483902	21.60372	22.93318

Table 2. Correlation Matrix

	ROA	Assets	Interest Rate	Inflation	Liquidity	Investment	Government Spending
ROA	1.0000						
Size	0.0156	1.0000					
Interest Rate	-0.1702	-0.0009	1.0000				
Inflation	-0.1755	0.3238	-0.3042	1.0000			
Liquidity	-0.0452	0.7146	0.0624	0.1362	1.0000		
Investment	-0.0742	0.3406	0.2908	0.0761	0.3276	1.0000	
Government Spending	-0.2377	0.6620	0.0299	0.4077	0.4759	0.5255	1.0000

Table 3. Levin-Lin-Chu Unit Root Test

Variable	Lag	t-Statistic	P- Value	Trend Effect
ROA	1	-2.8923	0.0019	No Trend
Size	1	-0.5953	0.2758	No Trend
Interest Rate	1	-7.1037	0.0000	No Trend
Inflation	1	-2.1224	0.0169	No Trend
Liquidity	1	-2.7093	0.0034	With Trend
Investment	1	-0.5531	0.2901	With Trend
Government Spending	1	-1.5083	0.0657	With Trend

Table 4. Pooled OLS Regression

Independent Variable: Banking Performance (ROA)	Pooled OLS
Size	0.0049174 *** 0.0013783
Interest Rate	-0.0001995 *** 0.0000613
Inflation	-0.0010668 ** 0.0004328
Liquidity	-0.0000000891 0.000000624
Investment	0.0003832 * 0.0002276
Government Spending	-0.0100021 *** 0.0024891
Observation	175
Adjusted R2	0.1553

Note: The table reports the standards error in parentheses.

* Significant at 10%; ** significant at 5%; *** significant at 1%

Robust standard errors (White test)

Table 5. Fixed and Random Effects Regression

Independent Variable: Banking Performance (ROA)	Fixed Effects	Random Effects
Size	0.0081863 ** (0.0036625)	0.0049174 *** (0.0013783)
Interest Rate	-0.0001979 *** (0.0000604)	-0.0001995 *** (0.0000613)
Inflation	-0.0012422 *** (0.0004415)	-0.0010668 ** (0.0004328)
Liquidity	-0.0000000270*** (0.0000000848)	-0.0000000891 0.0000000624
Investment	0.0004543 ** (0.0002254)	0.0003832 * (0.0002276)
Government Spending	-0.011073 ** (0.0045995)	-0.0100021 *** (0.0024891)
Observation	175	175
Overall R2	0.1605	0.1844

Note: The table reports the standards error in parentheses

* Significant at 10%; ** significant at 5%; *** significant at 1%

Robust standard errors (White test)

Table 6. Results using Hausman Test

Independent Variable: Banking Performance (ROA)	Fixed Effects	Random Effects	Difference
Size	0.0081863	0.0049174	0.003269
Interest Rate	-0.0001979	-0.0001995	0.000000154
Inflation	-0.0012422	-0.0010668	-0.0001754
Liquidity	-0.0000000270	-0.0000000891	-0.000000181
Investment	0.0004543	0.0003832	0.0000711
Government Spending	-0.011073	-0.0100021	-0.0010709
chi2(5)	11.21		
Prob>chi2	0.0473		

Table 7. Panel Cointegration Tests

	Statistic	P-value
Kao test for cointegration		
Modified Dickey-Fuller t	-4.6413	0.0000
Dickey-Fuller t	-5.6764	0.0000
Augmented Dickey-Fuller t	-2.8603	0.0021
Unadjusted modified Dickey-Fuller t	-11.7647	0.0000
Unadjusted Dickey-Fuller t	-7.6808	0.0000
Pedroni test for cointegration		
Modified Phillips-Perron t	1.9365	0.0264
Phillips-Perron t	-2.2568	0.0120
Augmented Dickey-Fuller t	-3.5537	0.0002

Table 8. Fixed Effects Regression with Capital Spending

Independent Variable: Banking Performance (ROA)	Fixed Effects
Size	0.00642 ** 0.0035511
Interest Rate	-0.0001941*** 0.0000608
Inflation	-0.0009469** 0.000462
Liquidity	-0.000000267*** 0.0000000856
Investment	0.0003273 0.0002198
Capital Spending	-0.0062299* 0.0032321
Observation	175
Overall R2	0.1438

Note: The table reports the standards error in parentheses

* Significant at 10%; ** significant at 5%; *** significant at 1%

Robust standard errors (White test)

Table 9. Fixed Effects Regression including financial Crisis Dummies

	Financial Crisis Dummy	Post Financial Crisis
Size	0.0093678 *** (0.0035872)	0.0082206 *** (0.0036609)
Interest Rate	-0.0001052 (0.0000659)	-0.0002102 *** (0.0000614)
Inflation	0.0000757 (0.0006023)	-0.0012669 *** (0.0004419)
Liquidity	-0.000000309 *** (0.0000000835)	-0.000000274 *** (0.0000000848)
Investment	0.0004256 * (0.0002197)	0.0003376 (0.0002501)
Government Spending	-0.0130378 *** (0.0045239)	-0.0097712 ** (0.0047545)
Financial Crisis Dummy	-0.0128314 *** (0.0041066)	
Post Financial Crisis Dummy		-0.0031198 (0.0029051)
Observation	175	175
Overall R2	0.1909	0.1646

Note: The table reports the standards error in parentheses

* Significant at 10%; ** significant at 5%; *** significant at 1%

Robust standard errors (White test)

Table 10. Fixed Effects Regression including Banking Concentration

Independent Variable: Banking Performance (ROA)	Concentration Ratio for Largest Bank	Concentration Ratio for Largest Two Bank	Concentration Ratio for Largest Three Bank
Size	0.0014868 (0.0020484)	0.006826** (0.0029454)	0.004426 (0.0029582)
Interest Rate	-0.0001624*** (0.0000613)	-0.000178*** (0.0000605)	-0.0001821*** (0.0000617)
Inflation	-0.001456*** (0.0004477)	-0.0011672*** (0.0004389)	-0.0010803** (0.0004502)
Liquidity	-0.000000162* (0.0000000873)	-0.000000249*** (0.0000000834)	-0.00000025*** (0.0000000848)
Investment	0.0006206** (0.000241)	0.0004094*** (0.000219)	0.0003818* (0.0002234)
Banking Concentration	-0.098089*** (0.0345483)		
Banking Concentration		-0.0820608*** (0.0299412)	
Banking Concentration			-0.090271* (0.0538384)
Observation	175	175	175
R2	0.1921	0.2032	0.1225

Note: The table reports the standards error in parentheses

* Significant at 10%; ** significant at 5%; *** significant at 1%

Robust standard errors (White test)

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