Factors determining bank deposit growth in Turkey: an empirical analysis

Ibrahim Nandom Yakubu and Aziza Hashi Abokor
Department of Banking and Finance, Ankara Yildirim Beyazit University, Ankara, Turkey

Received 5 May 2020
Revised 10 June 2020
Accepted 11 June 2020

Abstract

Purpose – This paper aims to examine the key factors determining bank deposit growth in Turkey for the period 2000Q1–2016Q4.

Design/methodology/approach – The study employs the autoregressive distributed lag approach to investigate the effect of bank-level and macroeconomic factors on deposit growth.

Findings – The results reveal that bank stability, banking sector efficiency, broad money supply, economic growth, and inflation are significant determinants of deposit growth in the long run. The findings further show that in the short run, only branch expansion and broad money supply are relevant for bank deposit mobilization.

Originality/value – This paper departs from the extant empirical studies that focus on the determinants of individual savings behaviour in Turkey. Considering the short- and long-run time dimensions, the authors distinctively examine how bank characteristics influence deposit growth, thus presenting a relatively pioneering attempt in this context.

Keywords Turkey, Autoregressive Distributed Lag (ARDL), Bank-specific factors, Deposit

Paper type Research paper

1. Introduction

Banks immensely contribute to economic growth through their intermediating function of linking surplus and deficit fund sectors (Saunders and Cornett, 2011). The growing number of banks over the years has resulted in banking sector efficiency and competition. This has led to growth in banks' profits. One of the key activities of banks contributing to their efficiency is deposit mobilization. In emerging markets, deposits are core to bank operations (Ünvan and Yakubu, 2020). Most businesses heavily resort to bank loans as a source of financing, and deposits largely dictate how much funds are available for lending activities. Hence, the role of deposits cannot be overemphasized. For banks to efficiently mobilize deposits, it is imperative to identify the key factors affecting them. Thus, this study seeks to examine the determinants of bank deposits in the case of Turkey.

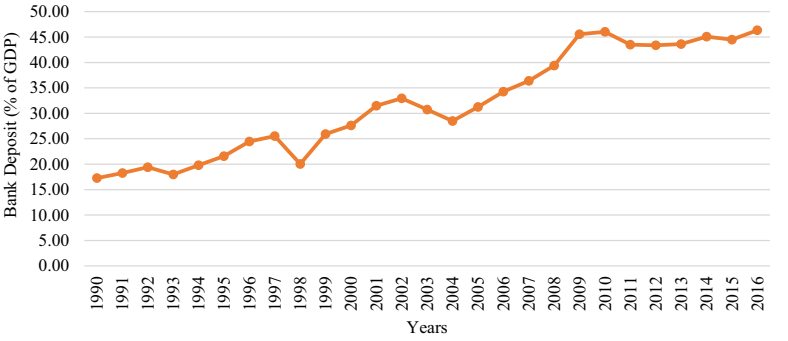
The authors are grateful to the anonymous reviewers for their comments on the manuscript.

Rajagiri Management Journal
Vol. 14 No. 2, 2020
pp. 121-132
Emerald Publishing Limited
p-ISSN: 0972-9968
e-ISSN: 2633-0091
DOI 10.1108/RAMJ-05-2020-0017

The Turkish banking sector after the 2000–2001 domestic banking crisis has undergone significant structural reforms coupled with stringent policies in the quest of stabilizing the financial system. For instance, as part of the Turkish banking sector reforms, the Banking Regulation and Supervision Agency (BRSA) was established. The BRSA played a key role in restoring confidence in the financial system through effective regulation and supervision of the banking sector of the Turkish financial services industry. The Banking Sector Restructuring Programme (BSRP) was another regulatory reform, which was among the main elements of the Programme for Transition to Strong Economy. The BSRP aimed to restructure the Turkish banking sector to bring banks out of the crisis. With such reforms, there have been substantial improvements and growth in the banking sector activities, including deposit mobilization. Bank deposits as a percentage of gross domestic product (GDP) have experienced rapid growth after the crisis though at a slow pace in the early 2000s, with a decline in 2004, as shown in Figure 1.

The drivers of bank deposits in Turkey are worth investigating, given banks deposit growth after the domestic banking crisis and its impact on economic growth. In the literature, several studies (Finger and Hesse, 2009; Abduh *et al.*, 2011; Ojeaga and Odejimi, 2014; Eriemo, 2014; Hassan, 2016; Mushtaq and Siddiqui, 2017) have examined the factors influencing bank deposits with mixed findings. Research in the context of Turkey is scanty, therefore necessitating further studies. Besides, existing research in Turkey (Ozcan *et al.*, 2003; Van Rijckeghem, 2010; Matur *et al.*, 2012; Tatliyer, 2017) dwells mainly on the determinants of individuals savings behaviour with no study specifically assessing how bank-specific factors enhance deposit growth. Accordingly, this paper intends to bridge this gap in the literature by scrutinizing the short- and long-run determinants of bank deposits in Turkey. We contribute to the literature in two distinctive ways. First, the researchers are unaware of any empirical study in Turkey examining the effect of bank characteristics on deposit growth. Consequently, we present relatively pioneering work in this context. Second, we decompose the drivers of deposit into short- and long-run determinants using the autoregressive distributed lag (ARDL) framework.

The next section outlines the literature review. Section 3 explains our data and estimation approach. Section 4 discusses the empirical findings, and Section 5 concludes with policy implications.



Source: World Bank (2018)

Figure 1.
Bank deposits (% of GDP) 1990–2016

2. Literature review

Theoretically, the lifecycle hypothesis (Modigliani and Brumberg, 1954), the permanent income hypothesis (Friedman, 1957) and the buffer-stock theory (Deaton, 1989; Carroll *et al.*, 1992) provide the most plausible explanation to savings behaviour from the depositors' perspective. According to the lifecycle model, individuals' income for a particular period to a large extent predicts consumption. This suggests that people make savings for smooth consumption over some time. Therefore, given the varying nature of income over the life of individuals, the stage of an individual's life determines his/her savings pattern, implying that during the working years of individuals, they are net savers and become dissavers on retirement.

According to the permanent income hypothesis, the current savings of individuals are reduced by higher future income. Changes in the temporal income of individuals are met by consumption smoothing, whereby tomorrow's higher spending is sustained by income windfall saved today. On the contrary, current savings are not justified by changes in permanent income, given that more can be consumed irrespective of the period (i.e. both present and future).

For the buffer-stock theory, it postulates that individuals shield their consumption against unexpected fluctuations in income by holding more assets. The theory states that individuals become impatient and show prudence when faced with income uncertainties. Individuals develop impatience because they borrow against future income to meet current consumption. Individuals also demonstrate prudence, given their precautionary motives. To reduce the possible perils stemming from future income fluctuations, and also to ensure that consumption is maintained in a smooth pattern, precautionary reserves are made by reducing current consumption, thereby saving more to meet contingent incidences. Hence, the savings rate tends to be pro-cycle, implying that when the income level of individuals is high, they tend to save more to ensure smooth consumption in hard times.

At the empirical front, research on what factors drive deposit growth is scanty, as most studies are delved towards explaining the determinants of savings behaviour. In general, the determining factors of bank deposits and savings are classified into micro- and macroeconomic factors. Whereas the microeconomic factors relate to bank-level variables, the macroeconomic-level determinants reflect the overall macroeconomic fundamentals of a country. We discuss further in this section how these factors influence bank deposit and savings behaviour.

Applying the vector autoregressive and the impulse response function, Kasri and Kassim (2009) empirically investigated the factors motivating savings using data obtained from Islamic banks operating in Indonesia for the period 2000–2007. The authors reveal that the conventional interest rate is significant in explaining savings behaviour. Particularly, the study highlights a lower interest rate and higher returns rate to positively correlate with deposit mobilization.

In addition to macroeconomic factors, Abduh *et al.* (2011) investigated the impact of financial crisis on bank deposits. Using data spanning 2000–2010, and applying the vector error correction model, the findings establish that the interest rate and growth in production level do not significantly drive deposits. Also, while the authors found a negative effect of inflation on deposit, financial crisis and deposit showed a positive relationship.

Using the ordinary least squares (OLS) regression technique, Ngula (2012) examined the determinants of deposit mobilization in Ghana over the period 1980–2010. Results from his analysis show that money supply, exchange rate, and the rate of inflation are important in explaining bank deposits. The results further noted that the effect of deposit interest rate on deposit mobilization is weak.

By analyzing the effect of macroeconomic factors on deposit, Eriemo (2014) applied the vector error-correction model on time-series data spanning 1980–2010. The results evidenced a long-run significant effect of bank investment, branch networks, price level and

interest rate on deposit. In a similar analysis, Ojeaga and Odejimi (2014) in Nigeria reveal that bank deposit is significantly and positively influenced by interest rate.

Mashamba *et al.* (2014) assessed the relationship between interest rate and bank deposit in Zimbabwe for the period 1980–2006. The authors found that deposit interest rate and the level of economic activity (GDP) have a significant positive effect on bank deposits. On the other hand, they established that inflation rate and interest rates margin negatively affect deposit mobilization.

In a cointegration analyses, Larbi-Siaw and Lawer (2015) investigated the drivers of bank deposits in the context of Ghana. The findings revealed an inverse relationship between inflation rate and money supply in the short run. Monetary policy, however, showed a direct impact on deposit in the short run. The study also evidenced that in the long run, money supply directly explains deposit level, while the effect of interest rate and inflation is negative.

Mushtaq and Siddiqui (2017) comparatively analyzed how interest rates influence bank deposits in 46 countries consisting of Islamic and non-Islamic economies. Invoking the panel ARDL technique on bank-level data for the period 1999–2014, they reported that in Islamic economies, interest rate has no significant effect on bank deposit mobilization and does influence deposits in non-Islamic countries.

Ünvan and Yakubu (2020) applied the random effects technique on bank-level data to examine the drivers of bank deposits in Ghana for the period 2008–2017. Controlling for macroeconomic indicators, the authors found that bank deposit mobilization is significantly driven by bank size, banks' profit level and liquidity. For macroeconomic factors, the results found a significant negative effect of inflation on deposits.

In the context of Turkey, Ozcan *et al.* (2003) examined the factors affecting savings behaviour using data from the World Savings Database for the period 1968–1994. The findings from their analysis show that income level, financial depth and inflation tend to influence private savings, while government savings and life expectancy negatively affect savings. Also, Tatliyer (2017) used the OLS and vector error-correction model to investigate the factors affecting private savings for the period 1988–2010. The author established that private savings level is increased by lower social security level and inflation rate. Decreasing the constraints to credit tends to inversely affect savings. The study further showed that favourable terms of trade and current account balance promote savings levels. Özen *et al.* (2018) found a direct impact of interest rates on depositors' behaviour in Turkey.

We can conclude from the literature review that studies on the critical factors explaining bank deposit growth are limited and mostly dwell on macroeconomic factors. In the context of Turkey, scanty attempts have been made, as the empirical studies are concentrated on the determinants of individual savings behaviour. The present study seeks to fill this lacuna in the literature by modelling both bank-level and macroeconomic factors in a single equation to examine the short- and long-run factors driving bank deposit growth in Turkey.

3. Methodology

3.1 Data description and variables

To achieve the objective of the study, we use quarterly data spanning 2000Q1–2016Q4 from the Global Financial Development Database and World Development Indicators of the World Bank. This period is selected based on complete data availability. Bank deposits (BD), which is the total value of demand, time and saving deposit (% of GDP) serves as the dependent variable. Bank stability (BS), bank efficiency (BEF), branch expansion (BRA), broad money (BM), economic growth (RGDP) and inflation (INF) are examined to establish their impact on bank deposits. Table 1 provides a clear explanation for all the factors included in our study.

3.2 Model specification

The empirical model for examining the relationship between bank deposit and the explanatory variables is expressed as:

$$BD_t = \alpha_0 + \beta_1 BS_t + \beta_2 BEF_t + \beta_3 BRA_t + \beta_4 BM_t + \beta_5 RGDP_t + \beta_6 INF_t + \varepsilon_t \quad (1)$$

where the proxies of all the factors are previously defined, except ε, which is the error term. t represents the sample period and α_0 refers to the intercept. β_1 to β_6 are the coefficients of the explanatory factors.

3.3 Cointegration – autoregressive distributed lag bounds testing procedure

The study seeks to analyze the short- and long-run effect of the selected independent factors on bank deposits. In doing so, the ARDL model by Pesaran and Shin (1998) and Pesaran *et al.* (2001) is used. The ARDL technique has advantages over the other cointegration methods (e.g. fully modified OLS, Johansen, etc.). For instance, whether the underlying variables are stationary at level I (0), first difference I (1) or both, the ARDL technique is applicable. Variables can take a different number of lags under the ARDL. It is also a perfect model for small sample size studies. ARDL also gives unbiased long-run estimates (Odhiambo, 2008).

In analyzing the long-run association and short-run dynamics of the variables, the ARDL model is expressed as follows:

$$\begin{aligned} BD_t = {} & \alpha_0 + \sum_{i-t}^{n} \alpha_{1i}\, \Delta BD_{t-1} + \sum_{i-t}^{n} \alpha_{2i}\, \Delta BS_{t-1} + \sum_{i-t}^{n} \alpha_{3i}\, \Delta BEF_{t-1} \\ & + \sum_{i-t}^{n} \alpha_{4i}\, \Delta BRA_{t-1} + \sum_{i-t}^{n} \alpha_{5i}\, \Delta BM_{t-1} + \sum_{i-t}^{n} \alpha_{6i}\, \Delta RGDP_{t-1} \\ & + \sum_{i-t}^{n} \alpha_{7i}\, \Delta INF_{t-1} + \delta_1 BD_{t-1} + \delta_2 BS_{t-1} + \delta_3 BEF_{t-1} \\ & + \delta_4 BRA_{t-1} + \delta_5 BM_{t-1} + \delta_6 RGDP_{t-1} + \delta_7 INF_{t-1} \\ & + \rho\, ECM_{t-1} + \varepsilon_t \end{aligned} \quad (2)$$

where Δ is the difference operator; α_0 is the intercept; α_1–α_7 and δ_1–δ_7 are short- and long-run coefficients, respectively; ϵ is the error term; n is the lag length; ρ is the coefficient of ECM; and ECM_{t-1} denotes the error-correction term lagged by one period.

A bound test is conducted to examine the long-run relationship among the variables using the F-test. To achieve this, the null hypothesis specifying that there is no long-run relationship among the variable is tested against the alternative hypothesis as follows:

Variable	Acronym	Proxy
Bank deposits	BD	Total value of demand, time and saving deposit (% of GDP)
Bank stability	BS	Proxied by bank z-score
Bank efficiency	BEF	Proxied by bank net interest margin
Branch expansion	BRA	Number of commercial bank branches per 100,000 adults
Broad money	BM	Broad money supply (% of GDP)
Economic growth	RGDP	Annual percentage change of real GDP
Inflation	INF	Consumer prices (annual %)

Table 1. Description of variables

$$H_0: \delta_1 = \delta_2 = \delta_3 = \delta_4 = \delta_5 = \delta_6 = \delta_7 = 0 \quad (3)$$

$$H_1: \delta_1 \neq \delta_2 \neq \delta_3 \neq \delta_4 \neq \delta_5 \neq \delta_6 \neq \delta_7 \neq 0 \quad (4)$$

The two critical bounds: upper bound I (1) and lower bound I (0) are used to test for the existence of cointegration. With this, *F*-statistics exceeding the upper critical bound, I (1) indicates the existence of long-run relationship. *F*-statistics less than the lower bound critical value I (0), however, depicts no cointegration. An inconclusive result is drawn when the *F*-statistics lies between the upper and lower critical bound.

4. Empirical results

4.1 Descriptive statistics

The descriptive statistics for all the variables included in the study are summarized in Table 2. The mean value of bank deposit (% of GDP) is 38.27% with maximum and minimum values of 46.34 and 27.63%, respectively. The standard deviation values of all the factors compared to the average values are low indicating relatively lower volatility. Except for bank efficiency, branch expansion and inflation, which show positive skewness, all the other factors have a negatively skewed distribution. It is also observed that bank stability, bank efficiency, economic growth and inflation have a leptokurtic distribution, given that their kurtosis values are greater than 3. Further, the Jarque–Bera probability values indicate that all the variables are not normally distributed at 5%.

4.2 Unit root tests

To test for unit root, we applied the augmented Dickey–Fuller (ADF) and Phillips–Perron (PP) tests. The unit root test is performed at both level I (0) and first difference I (1), as presented in Table 3. For the ADF test, except economic growth and inflation, which show stationary at level, all the other factors are stationary at first difference. Turning to the PP test, only economic growth becomes stationary at level. Given that the variables are stationary at both level and first difference, the ARDL method can be applied.

4.3 Bounds testing for cointegration

The bounds testing analysis examines the long-run association between bank deposit and its determinants. As shown in Table 4, the bounds testing results suggest that at 5% level of significance, the estimated *F*-statistics (3.775) exceeds the upper critical bound value of 3.28. This indicates the existence of cointegration among the selected variables. Therefore, the

Table 2.
Descriptive statistics

	BD	BS	BEF	BRA	BM	RGDP	INF
Mean	38.270	8.045	5.407	16.441	45.438	5.116	16.672
Median	39.376	8.134	4.995	17.156	46.479	6.086	8.756
Maximum	46.335	11.295	9.015	19.671	55.605	11.114	54.915
Minimum	27.625	0.416	3.761	12.943	33.537	−5.962	6.251
SD	6.713	2.311	1.370	2.263	7.445	4.537	16.651
Skewness	−0.214	−2.002	0.951	0.004	−0.334	−1.244	1.619
Kurtosis	1.411	7.617	3.582	1.440	1.651	3.850	3.845
Jarque–Bera	7.673	105.838	11.215	6.900	6.416	19.594	31.739
Probability	0.022	0.000	0.004	0.032	0.040	0.000	0.000
Observations	68	68	68	68	68	68	68

long-run relationship between bank deposit and the independent variables is estimated. Based on the Akaike information criterion (AIC), the ARDL (4, 2, 4, 1, 2, 3, 4) is selected.

4.4 Long-run estimation

Table 5 presents the empirical results on the long-run determinants of bank deposits. From the estimation, banking sector stability exerts a positive significant impact on bank deposits. This result is in line with the proposition that a resilient and stable banking system reinforces trust in banks and assures bank customers that their deposits are safe and used judiciously (Chernykh *et al.*, 2019). This potentially attracts deposits from customers. The positive relationship may also be attributed to the stringent measures taken by the Central

	ADF		PP	
Variables	*t*-statistics	Order	*t*-statistics	Order
BD	–8.425***	I(1)	–8.434***	I(1)
BS	–8.000***	I(1)	–8.000***	I(1)
BEF	–5.949***	I(1)	–8.038***	I(1)
BRA	–8.184***	I(1)	–8.184***	I(1)
BM	–4.838***	I(1)	–8.213***	I(1)
RGDP	–2.919**	I(0)	–3.124**	I(0)
INF	–3.321**	I(0)	–8.343***	I(1)

Notes: ** and *** denote stationary at the 5 and 1% significance level, respectively

Table 3.
Unit root test results: ADF and PP

Test statistics	Value	Level	Critical values	
			I(0)	I(1)
F-statistics	3.775**	10%	1.99	2.94
k	6	5%	2.27	3.28
		1%	2.88	3.99

Notes: *k* is the number of the explanatory variables, and ** denotes 5% level of statistical significance

Table 4.
Bounds test for cointegration relationship

ARDL (4, 2, 4, 1, 2, 3, 4) selected based on AIC dependent variable = BD				
Variable	Coefficient	SE	*t*-statistic	Probability value
BS_t	1.263	0.262	4.820	0.000***
BEF_t	–1.360	0.331	–4.103	0.000***
BRA_t	–0.007	0.234	–0.031	0.976
BM_t	0.741	0.075	9.829	0.000***
GDP_t	–0.301	0.109	–2.752	0.009***
INF_t	0.086	0.042	2.046	0.048**
Constant	2.498	5.927	0.421	0.676

Notes: *** and ** denote significance at the 1 and 5% levels, respectively

Table 5.
Long-run estimates

Bank of Turkey in their quest to build confidence in the Turkish financial system in recent years, which has led to improvements in banking sector activities.

Bank efficiency, which shows the success of banks' investment decisions, has a negative significant effect on deposit growth. This suggests that banks in Turkey in the long run do not efficiently invest customers' funds to yield returns, which they can remit to customers in a form of higher deposit interest payment. As a consequence, a lower deposit interest rate may detract customers' willingness to commit their funds in the form of bank deposits. Nevertheless, the statistically significant value of bank efficiency indicates its vitality in bank deposit mobilization.

The relationship between branch expansion and bank deposit is negative and insignificant in the long run. This implies that establishing more branches to improve accessibility to banking services does not matter for deposit growth in Turkey. We can relate this finding to the increasing use of mobile and internet banking by bank customers in Turkey, which reduces the need for branch visits. This finding contradicts existing studies (Gunasekara and Kumari, 2018; Eyob, 2019) who found that expanding branch networks is important for deposit mobilization.

Consistent with the finding of Ngula (2012), our results posit a significant positive effect of broad money supply on deposit growth. This suggests that bank deposit growth is triggered by a percentage increase in money supply. The result reflects the hypothesis that money supply gauges monetary conditions, and bank deposit growth manifests the growth in money supply.

The coefficient of economic growth is negative though statistically significant, implying that economic activities in the long run decrease bank deposit. Furthermore, inflation shows a direct and significant impact on bank deposit growth. This supports the savings precautionary motivate. The finding implies that in periods of high inflation, people tend to reduce expenditures due to high prices of goods and services. To hedge against price increment, individuals save with the anticipation that prices will decrease in the future. Our result conforms to the findings of Ozcan *et al.* (2003) and Larbi-Siaw and Lawer (2015).

4.5 Short-run estimation

Turning to the short-run estimates in Table 6, the lagged error-correction term (ECM_{t-1}) coefficient is negative and highly significant. The coefficient of –0.479 indicates that the disturbance in the model is reduced by 47.9% quarterly towards the equilibrium. In the short run, bank stability has an inverse relationship with bank deposit, and the effect is insignificant. This suggests that banks in the short term may struggle to achieve stability resulting from a fluctuating economy, as in the case of Turkey. In such situations, customers view banks as unsafe zones for their money, which definitely decreases bank deposits.

Bank efficiency shows a positive albeit insignificant impact on deposit growth in the short run. This finding implies that banks in Turkey in the short run may be able to earn higher returns on their investments, and a subsequent benefit to depositors in the form of deposit interest rate increase. Contrary to the long-run negative coefficient of bank efficiency, it can be inferred that banks are efficient in investing customers' deposits only in the short run. Nevertheless, the insignificant effect of bank efficiency in the short run shows that it does not matter for deposit attraction.

Contrary to the long-run results, branch expansion has a significant positive impact on deposit growth. This may be ascribed to the fact that in the short run, banks may resort to bank branches as the main mechanism of reaching customers. Banks may also take time to create awareness on the use of electronic platforms for transactions, making branch banking the most reliable medium by which customers meet their banking needs, including deposits.

ARDL (4, 2, 4, 1, 2, 3, 4) selected based on AIC Dependent variable = BD				
Variable	Coefficient	SE	*t*-statistic	Probability value
ΔBD_{t-3}	–0.139	0.051	–2.707	0.010
ΔBS_{t-1}	–0.211	0.125	–1.682	0.101
ΔBEF_{t-3}	0.141	0.086	1.640	0.110
ΔBRA_{t}	0.470	0.143	3.294	0.002***
ΔBM_{t-1}	–0.138	0.077	–1.780	0.083*
ΔGDP_{t-2}	0.035	0.023	1.552	0.129
ΔINF_{t-3}	0.002	0.017	0.101	0.920
ECM_{t-1}	–0.479	0.080	–5.993	0.000***
R^2		0.910		
Adjusted R^2		0.872		
Durbin–Watson stat		1.738		
F-statistic		391.460		
Probability (*F*-statistic)		0.000		

Notes: *** and * denote significance at the 1 and 10% levels, respectively

Table 6. Results of short-run dynamic model

The effect of broad money supply on deposit is negative and significant in the short run, supporting the finding of Larbi-Siaw and Lawer (2015). The result implies that in the short run, money supply leads to lower cost of borrowing, which increases the demand for credit and consumption. An increase in consumption reduces the zeal to save and thus decrease in bank deposits. Economic growth in the short run enhances deposit growth though the effect is insignificant. Also, inflation maintains a positive effect on bank deposits in the short run albeit insignificant.

4.6 Diagnostic tests results

Finally, we perform several diagnostic tests to ensure the validity of our findings. As presented in Table 7, at 5% significance level, our model is free from serial correlation, heteroscedasticity and functional form misspecification. The Jarque–Bera value also depicts that our model is normally distributed.

Likewise, the results of the CUSUM and CUSUMSQ plots in Figures 2 and 3, respectively, indicate that the model is stable as the CUSUM lines are within the critical boundaries at 5% significance level.

5. Conclusion and recommendations

Bank deposit is an integral component of bank operations in every economy. Identifying the key factors affecting deposits is essential for banks to formulate workable policies and strategies to mobilize deposits. This study assesses the short- and long-run bank-level and macroeconomic drivers of bank deposits growth in Turkey. The findings establish that

Specification	*F*-statistics	Probability value
Breusch–Godfrey (serial correlation LM test)	1.871	0.169
Breusch–Pagan (heteroscedasticity)	1.530	0.116
Jarque–Bera (normality)	1.802	0.406
Ramsey RESET	3.661	0.064

Table 7. Diagnostic tests

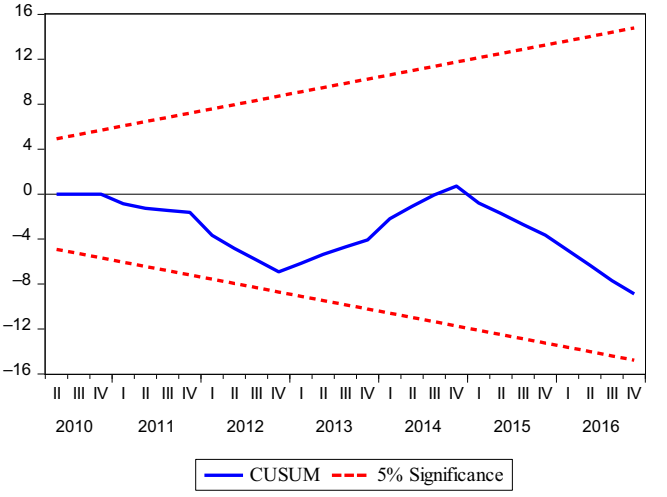


Figure 2.
Plots of CUSUM

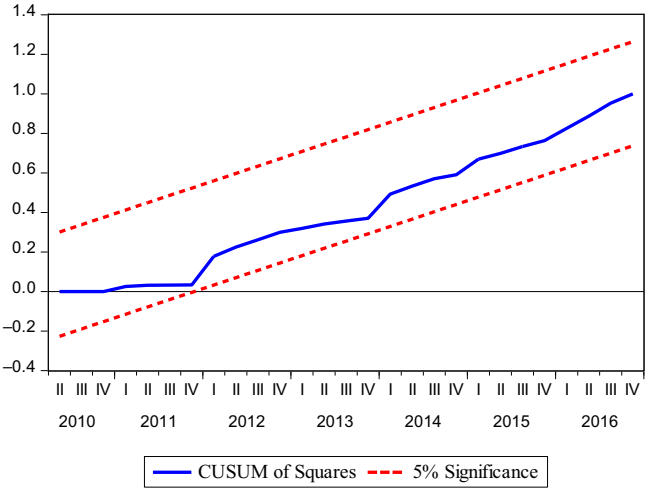


Figure 3
CUSUM of squares

except for branch expansion, all the factors in our model are significant determinants of bank deposits in the long run. Our results further document branch expansion and broad money supply as the only significant determinants of deposit growth in the short run.

We offer some recommendations based on the findings. First, given that bank stability significantly predicts deposit growth in the long run, banks need to devise measures to absorb external shocks, which are likely to discredit their operations. Second, banks must invest in viable projects to yield higher returns to be able to pay high interest on customers' deposits. Also, since branch expansion does not matter in the long run, banks may limit branch expansion and shift their focus to advancing more sophisticated electronic platforms to allow customers to transact easily. Furthermore, at the macro level, policy makers must

enact policies to improving the overall macroeconomic environment, particularly policies to enhancing economic growth. Our study focuses on a single country. We recommend further research works to consider panel studies and examine other bank-specific factors that may influence bank deposits.

References

Abduh, M., Omar, M.A. and Duasa, J. (2011), "The impact of crisis and macroeconomic variables towards Islamic banking deposits", *American Journal of Applied Sciences*, Vol. 8 No. 12, pp. 1413-1418.

Carroll, C.D., Hall, R.E. and Zeldes, S.P. (1992), "The buffer-stock theory of saving: some macroeconomic evidence", *Brookings Papers on Economic Activity*, Vol. 1992 No. 2, pp. 61-156.

Chernykh, L., Davydov, D. and Sihvonen, J. (2019), "Financial stability and public confidence in banks", BOFIT Discussion Paper No. 2/2019, available at: https://ssrn.com/abstract=3339743

Deaton, A. (1989), "Saving and liquidity constraints", Working Paper No. 3196, National Bureau of Economic Research, Cambridge.

Eriemo, N.O. (2014), "Macroeconomic determinants of bank deposits in Nigeria", *Journal of Economic and Sustainable Development*, Vol. 5 No. 10, pp. 49-58.

Eyob, T. (2019), "The impact of branch expansion on deposit mobilization, loan disbursement and profitability the case of lion international bank SC", Doctoral dissertation, Addis Ababa University, Ethiopia.

Finger, M.H. and Hesse, H. (2009), "Lebanon-determinants of commercial bank deposits in a regional financial center", Working Paper No. 9-195, International Monetary Fund, Middle East and Central Asia Department.

Friedman, M. (1957), *Theory of the Consumption Function*, Princeton University Press, NJ.

Gunasekara, H.U. and Kumari, P. (2018), "Factors affecting for deposit mobilization in Sri Lanka", *International Review of Management and Marketing*, Vol. 8 No. 5, pp. 30-42.

Hassan, O.M. (2016), "Effect of interest rate on commercial bank deposits in Nigeria", *Proceeding of the First American Academic Research Conference on Global Business, Economics, Finance and Social Sciences, New York, NY Conference, New York, NY*, pp. 25-28.

Kasri, R. and Kassim, S.H. (2009), "Empirical determinants of saving in the Islamic banks: evidence from Indonesia", *Journal of King Abdulaziz University-Islamic Economics*, Vol. 22 No. 2, pp. 181-201.

Larbi-Siaw, O. and Lawer, P.A. (2015), "Determinants of bank deposits in Ghana: a cointegration approach", *Asian Journal of Economics and Empirical Research*, Vol. 2 No. 1, pp. 1-7.

Mashamba, T., Magweva, R. and Gumbo, L.C. (2014), "Analysing the relationship between banks' deposit interest rate and deposit mobilization: empirical evidence from Zimbabwean commercial banks (1980-2006)", *Iosr Journal of Business and Management*, Vol. 16 No. 1, pp. 64-75.

Matur, E.P., Sabuncu, A. and Bahçeci, S. (2012), "Determinants of private saving and interaction between public and private savings in Turkey", *Topics in Middle Eastern and North African Economies*, Vol. 14, pp. 102-125.

Modigliani, F. and Brumberg, R. (1954), "Utility analysis and the consumption function: an interpretation of cross-section data", *Franco Modigliani*, Vol. 1 No. 1, pp. 388-436.

Mushtaq, S. and Siddiqui, D.A. (2017), "Effect of interest rate on bank deposits: Evidences from Islamic and non-Islamic economies", *Future Business Journal*, Vol. 3 No. 1, pp. 1-8.

Ngula, I.B. (2012), "Determinants of deposit mobilization and its role in economic growth in Ghana", Masters Dissertation, Kwame Nkrumah University of Science and Technology, Ghana.

Odhiambo, N.M. (2008), "Financial depth, savings and economic growth in Kenya: a dynamic causal linkage", *Economic Modelling*, Vol. 25 No. 4, pp. 704-713.

Ojeaga, P. and Odejimi, D. (2014), "The impact of interest rates on bank deposits evidence from the Nigerian banking sector and a regional overview", *International Journal of Arts and Sciences*, Vol. 7 No. 6, pp. 497-515.

Ozcan, K.M., Gunay, A. and Ertac, S. (2003), "Determinants of private savings behaviour in Turkey", *Applied Economics*, Vol. 35 No. 12, pp. 1405-1416.

Özen, E., Vurur, N.S. and Grima, S. (2018), "Investigation of causality between interest rate and deposit investor's behaviour", *BRAIN Broad Research in Artificial Intelligence and Neuroscience*, Vol. 9 No. 4, pp. 177-185.

Pesaran, M.H. and Shin, Y. (1998), "An autoregressive distributed-lag modelling approach to cointegration analysis", *Econometric Society Monographs*, Vol. 31, pp. 371-413.

Pesaran, M.H., Shin, Y. and Smith, R.J. (2001), "Bounds testing approaches to the analysis of level relationships", *Journal of Applied Econometrics*, Vol. 16 No. 3, pp. 289-326.

Saunders, A. and Cornett, M.M. (2011), *Financial Markets and Institutions*, McGraw-Hill Education, New York, NY.

Tatliyer, M. (2017), "Determinants of private saving level: Evidence from Turkey", *Sosyoekonomi*, Vol. 25 No. 32, pp. 149-167.

Ünvan, Y.A. and Yakubu, I.N. (2020), "Do bank-specific factors drive bank deposits in Ghana?", *Journal of Computational and Applied Mathematics*, Vol. 376, p. 112827.

Van Rijckeghem, C. (2010), *Determinants of Private Saving in Turkey: An Update*, Boğaziçi Üniversitesi Iktisat Bölümü Çalışma Tebliği, p. 4.

World Bank (2018), Global Financial Development Database, available at: www.worldbank.org/en/publication/gfdr/data/global-financial-development-database.

Corresponding author
Ibrahim Nandom Yakubu can be contacted at: kassiibrahim@gmail.com