Bank Lending Channel of Monetary policy Transmission Mechanism in Nigeria

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Abstract
This paper investigated the existence of a bank lending channel in monetary policy transmission in Nigeria using quarterly data spanning the period 2002:1 through 2017:1. The analysis was conducted using Vector Error Correction Mechanism (VECM). Findings revealed the presence of three cointegrating relationship among the variables, identified as loan demand and supply by testing for exclusion and exogeneity restrictions on the cointegrating relationships. The study also found that loan supply was significant and positively associated with borrowing rate but negatively significant with lending rate equation which supports the existence of a lending channel for monetary transmission process. The policy implication of this is that, if the CBN raises the policy rate, bank supply of loan will respond negatively. This will restrict the total amount of loan that banks can offer to the private sector. Based on this finding we therefore recommend that the apex bank should give more credence to credit rates when instituting its monetary policies transmission.

Keywords: *Bank lending channel, Loan demand, Loan supply, Monetary policy transmission, VECM*

1.0 Introduction

Monetary policy is a powerful tool used by monetary authorities through various channels to achieve macroeconomic targeted goals. Over the years, attention has been drifted towards monetary transmission mechanism. One of the basic concerns is that monetary policy operates through the various transmission channels which in turn, affect economic activities. Central Bank of Nigeria (CBN) (2011a) defined transmission mechanism of monetary policy as the different channels through which policy influence changes in the nominal money stock or the short-term nominal rate of interest affects prices and output in the economy. These channels includes aggregate money supply, monetary base, interest rate channel, exchange rate channel, asset price channel and credit channel (which includes bank lending channel and balance sheet channel).

According to Bernanke and Gertler (1995) the balance sheet channel emphasize the potential impact of changes in monetary policy on borrowers' balance sheets and income statements including variables such as borrowers net worth, cash flow and liquid assets. While the bank lending channel emphasizes more narrowly on the possible effect of monetary policy actions on the supply of loans by deposit institutions. They opined that the existence of a balance sheet channel seems fairly well established while the bank lending channel is more controversial in the sense that over the years institutional changes have rendered the bank lending channel somewhat less plausible. More so, certain other developments may have increased the importance of bank lending in monetary transmission.

In this study, we examine if evidence can be found for a bank lending channel of monetary policy in Nigeria, by considering the response of bank lending to monetary shocks. The underlying theoretical explanation to the bank lending channel is that banks are the dominant source of intermediate credit in most countries that specialize in overcoming informational problems and other frictions in credit markets. When the supply of bank loans is disrupted, bank dependent borrowers may not be literally cut off from credit, but they are certain to incur cost associated with finding a new lender, establishing a credit relationship etc. Hence, a decrease in the supply of bank credit, relative to other forms of credit, is likely to increase the external finance premium and reduce real activity. The question asked here is, can monetary policy significantly affect the supply of bank loans? According to Kakes and Sturm (2001) banks respond to a monetary contraction by reducing the supply of loans which eventually affect inflation and real activities. Cyrille (2011) stressed that monetary policy tightening can affect not only the demand for loans (through interest rate channel), but also the supply of loans which in turn, further affects investment and consumption. In other words, both borrowers and banks are affected.

The importance of monetary policy transmission channels differs across various economies. In a developing economy like Nigeria, the CBN which is saddled with the responsibility of formulating and implementing monetary policy in Nigeria has used two monetary policy frameworks for its implementation since inception. According to CBN (2011b) they include exchange rate targeting and monetary targeting. The exchange rate targeting was used between 1959 and 1973 while the monetary targeting has been in use from 1974 to date. This change was brought about by the collapse of the Breton Woods system of fixed exchange rate in 1974 and change in strategy to demand management, as a means of curtailing inflationary pressures and balance of payment imbalances. The monetary authorities conducted monetary policy through direct controls (which lasted between 1959-1985) and indirect controls which was characterized by the Structural Adjustment Programme (SAP). Following the liberalization of the economy in 1986, monetary policy was refocused and based on one year perspective which lasted until 2001. Following this period, in 2002, the CBN began a two year medium term monetary programme aimed at freeing monetary policy from the problem of time inconsistency and minimizing overreaction due to temporary shocks.

The paper is structured as follows. Section 2 reviews the empirical literatures on bank lending channel of monetary policy transmission. Section 3 methodology and presentation of the hypotheses. Section 4 presentation of the analysis of the results and interpretation and lastly, section 5 is the conclusion and policy recommendation.

2.0 Review of Related Studies

Studies on bank lending channel dates back to 1950s, since then, a lot of transition have taken place which has resulted to different arguments. Earlier studies such as Bernanke and Blinder (1992) carried out a study on bank lending channel by estimating reduced form equations of credit supply using aggregate data. Nevertheless, Huelsewig, Mayer and Wollmershaeuser (2005) criticized these studies on the basis that bank loans decline after a monetary policy shock, but these findings are plagued by a severe identification problem, as it remains unclear whether that drop is driven by loan supply or loan demand effects.

Over the years, the argument on bank lending was refined. Bank characteristics, such capitalization, liquidity and size which is used to account for heterogeneity across banks by moving from aggregate data to disaggregated data. A number of researchers (Farinha & Marques, 2001; Alfaro, Franken, Garcia & Jara, 2003; Brooks, 2007; Benkovskis, 2008; Ozsuca & Akbostanci, 2012; Opolot, 2013; Budha, 2013; Simpasa, Nandwa & Nabassaga, 2014) proposed different identification strategies including the use of bank level data to account for heterogeneity in the response of credit to monetary policy. This is based on the assumption that banks are price takers (that is, the demand for loans are infinitely elastic). However, banks are hypothesized to react differently to monetary policy depending on the extent of substitutability and access to alternative sources of non-deposit finance, which varies across banks.

In view of the aforementioned, Huelsewig et al (2005) reported that employing aggregate and disaggregated data yielded contrary results. While some studies found evidence in support of the credit channel, others concluded that the credit channel is ineffective. Evidence from previous studies have pointed out that, this is as a result of the difficulty in separating the loan supply effects from the loan demand effects that follows a monetary contraction. In order to avoid this problem, a new trend of literatures have favoured the use of aggregate data and relied on the estimation of Vector Error Correction Model (VECM) within this framework, the supply and demand for loans can be identified by testing for the presence of multiple cointegrating relationships and exclusion, exogeneity and homogeneity restrictions on the cointegrating relationship of loan supply and demand can therefore, be modeled jointly rather that in a one equation reduced-form setting.

The use of VECM in the bank lending literature is fast growing, as various authors have relied on this methodology to solve the identification problem. For example Huelsewig et al (2005) investigated the response of bank loans after a monetary policy shock taking into account the reaction of the output level and the loan rate using sample period starting from 1991:1 – 2003:2. Applying VECM, findings showed that the credit channel in Germany works alongside the interest rate channel. The results imply that loan supply by the banks declines with an expected fall in the credit margin after a monetary policy shock, while loan demand drops with a fall in the output level and a raise in the loan rate. The reduction in loan supply occurs promptly and bottoms out gradually. The decrease in loan demand proceeds by degrees and continues persistently.

Similarly, Mello and Pisu (2009) analysed the existence of a bank lending channel in the transmission of monetary policy in Brazil using monthly aggregate data for the period 1995 - 2008. Using VECM, findings revealed loan supply is negatively related to the interbank deposit certificate rate in the long term, which confirms the existence of a lending channel for monetary transmission. The VECM's short-term dynamics showed that loan demand is equilibrium-correcting. But short-term disequilibria in the supply of loans are corrected through changes in the interbank deposit certificate rate, which suggested that monetary policy plays a role in restoring equilibrium in the credit market by affecting the borrowing rate faced by banks to raise non-deposit funds. Specifically, findings also revealed that the demand for loans appears to be negatively related to the lending rate and inflation. While the supply equation suggests that there is a positive association between bank capital and loans

In the same vein, Cyrille (2011) addressed the relevance of the bank lending channel in the transmission of monetary policy in the *Communaute Economique et Monetaire de L'Afrique Centrale* (CEMAC) area between the first quarter of 1990 to the last quarter of 2005. The aggregate data were analysed using structural VECM to disentangle the loan demand and supply effects of monetary policy moves. Findings revealed that economic activity is a powerful determinant of the demand for bank loans in the CEMAC area. More so, there exist a positive relation between loan demand and inflation. On the other hand, the supply of loans is positively related to the lending rate and negatively related to the policy rate

This paper examines the relevance of bank lending channel in the transmission of monetary policy in Nigeria. They are dearth of empirical studies in Nigeria based on the subject matter. This paper differs from previous studies in that, previous studies focused on banks' balance sheet channel in Nigeria (Olowofeso, Bada, Bassey & Dzaan, 2014). Also, we use the model which allows for the identification of loan supply and demand, thus avoiding the identification problems that arise in the estimation of reduced form credit supply equations. Quarterly data available from CBN are used for the period spanning first quarter of 2002 to first quarter of 2017. We use VECM which accounts for endogeneity and nonstationarity of the time series.

3.0 Research Methodology

Extending the methodology of Huelsewig et al (2005) Melo and Pisu (2009), Cyrille (2011) study which considers a simple aggregate model of loan supply (l_s) and loan demand (l_d). They explained that loan demand depends on macroeconomic conditions, proxied by economic activity (y), inflation (π), lending rate (l_r) offered by banks. Also, the loan supply depends on the sources of funds available to banks, including capital (c), borrowing rate (b_r) paid by banks for external funds and inflation, which affects the real rate of return on credit operations. According to Melo and Pisu (2009) this model allows for the identification of loan supply and demand, thereby avoiding possible problems that may arise in the estimation of reduced form credit supply equations. The model can be stated as:

$$l_s = l_s(c, \pi, b_r, l_r) \text{ and}$$
$$l_d = l_d(\pi, y, l_r) \quad (1)$$

According to Melo and Pisu (2009) if the presence of two cointegrating relationship cannot be rejected by the data, identification of the supply and demand functions depends on the estimated sign of the lending rate, which is expected to be negative in the demand equation and positive in the supply equation, and the sign of the borrowing rate, which is expected to be negative in the supply equation. They further stated that the identification also depends on testing for two exclusion restrictions, that is, bank capital should not enter the demand equation while being positively signed in the supply equation and economic activity should not enter the supply equation while being positively signed in the demand equation.

4.0 Results and Discussion of Findings

4.1 Unit Root Test

Table 1: Augmented Dickey-Fuller and Phillips-Perron Unit root tests

Variables	ADF t-statistics	Order	PP t-statistics	Order
RGDP(y)	-3.546***	1(1)	-3.548***	1(1)
Inflation rate (π)	-11.343***	1(2)	-4.997***	1(1)
Loans (l)	-7.7589***	1(1)	-7.760***	1(1)
Capital (c)	-5.815***	1(1)	-5.738***	1(1)
Lending rate (l_r)	-5.770***	1(0)	-3.568***	1(0)
Interest rate (b_r)	-5.432***	1(1)	-5.382***	1(1)

Note: *** Denote significance at the 1% level and the rejection of the null hypothesis of non stationarity. Critical values are obtained from MacKinnon 1996

Table 1 shows the stationarity test results which was carried out to test the presence of unit root which was tested at 5% Mackinnon critical value. This was carried out using both Augmented Dickey Fuller (ADF) test and Phillip Perron (PP). According to Gujarati (2004) ADF is conducted by augmenting the preceding three equations by adding the lagged values of the dependent variable, the idea being to include enough terms so that the error term is serially uncorrelated. On the contrary, PP test use nonparametric statistical methods to take care of the serial correlation in the error terms without adding lagged difference terms. From table 1 all variables were stationary and integrated of the order of one 1(1) except lending rate which was stationary at levels. The outcome of the unit root tests indicates the need for cointegration test among the variables.

4.2 Cointegration and identification tests

We therefore estimate the model in VECM including all six variables, that is, real GDP, inflation rate, loans to private sectors, bank capital, lending rate and borrowing rate. All variables are defined in logarithm form, except inflation rate, lending rate and borrowing rate.

Prior the estimation of the VECM, the optimal lag length was selected using Akaike Information Criterion (AIC), Schwarz Information Criterion (SC) and Hannan-Quinn Information Criterion (HQ) which suggested the inclusion of one lag. (See table 2)

Table 3 shows the result of the Johansen Trace test for cointegration. The null hypothesis of the cointegrating result was rejected at 5% level of significance, suggesting the presence of three cointegrating relationships. This implies that there is a long run relationship among the variables.

4.2 VECM results

The two estimated unrestricted cointegrating vectors are reported in table 4 and 5 respectively. Table 6 however, indicated variables that are weakly exogenous. According to Johansen (1995), a variable can be treated as weakly exogenous if the coefficients of all errors correction terms are 0, implying that the respective equation in the first difference does not contain information about the long-run parameters.

In order to identify the supply and demand equations, we imposed exclusions and exogeneity restrictions on the cointegrating parameters.

$$H_0: \beta_{1c} = \beta_{1br} = \beta_{2y} = \alpha_{1c} = \alpha_{2c} = \alpha_{1y} = \alpha_{2y} = 0$$

Mello and Pisu (2009) noted that, if the null hypothesis is not rejected, loan demand is unaffected by bank capital and the rate. Loan supply is unaffected by economic activity and capital, and they are weakly exogenous. The null hypothesis was rejected on the basis of a LR test ($X^2_{(5)}$ = 16.30657, p value = 0.006). Therefore, we normalize the unrestricted cointegrating vectors in loans in order to obtain the parameters of the demand and supply equations.

$$l_d = 0.055\pi - 17.205y - 0.327l_r$$
$$(1.858) \quad (-1.462) \quad (-1.358)$$

$$l_s = 9.10c + 0.001\pi + 0.549b_r - 0.974l_r$$
$$(0.42) \quad (0.035) \quad (2.233) \quad (-3.071) \qquad (2)$$

From the demand equation, the coefficients estimate shows that economic activity has a negative association with demand for bank loans which is not in line with aprior expectations. Also, the demand for banks loans appears to be negatively related to lending rate and positive with inflation rate. Implying that high lending rates negatively affects the demand for loans. On the other hand, high inflation rate increases demand for bank loan. However, Melo and Pisu (2009) argued that negative coefficient might suggest that firms reduce their demand for credit as inflation rises, because inflation is negatively related to productivity and the demand for labour.

On the other hand, the supply equation shows that there is a positive association between bank capital and supply of bank loan but not significant. The findings in line with our apriori expectations and consistent with that of Melo and Pisu (2009); Cyrille (2011) and Hsieh (2015). The inflation rate was found to be positively related to loan supply but insignificant. Also, as expected that borrowing rate had a positive and significant effect on the supply of bank loans. Implying that borrowing rate is an important determinant of supply of bank loans and higher borrowing rate results to an increase in supply of loans. Lastly, lending rate is negatively and significantly associated with supply of bank loans. The implication of this is that, when rates are high, bank tend to supply more loans. However, borrowers may be discouraged to access funds.

The above result indicated the evidence of the existence of a bank lending channel in Nigeria since monetary policy affects the supply of loans. Cyrille (2011) explained that tightening of policy in the central bank, reinforces the reluctance of banks to extend credits to the private sector.

5.0 Conclusion

This paper examined the relevance of a bank lending channel of monetary transmission mechanism in Nigeria. We adopted a recent methodology that is used to identify loan supply and loan demand equations on the basis of exclusion restrictions on the cointegrating vectors and exogeneity restrictions on the VECM loading parameters, a recurrent difficulty evident in studies which previously used aggregate data in reduced form equation. Using aggregate data in VECM settings, helps in disentangling the loan supply and demand effect of monetary policy. In this study, we estimate Nigeria quarterly period data between first quarter 2002 to first quarter of 2017. Findings revealed three cointegrating vectors and the empirical findings show support for the bank lending channel in Nigeria. Specifically, rates were found to be significant instrument of monetary policy transmission process. The policy implication of this is that, if the CBN raises the policy rate, bank supply of loan will increase, while borrowers will respond negatively. This will restrict the private sector ability to demand for more loans and grow the economy. We therefore recommend that, the apex bank should give more credence to credit rates when instituting its monetary policies transmission in order to drive the private sector.

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Appendices

Table 2: Lag length criteria

VAR Lag Order Selection Criteria
Endogenous variables: BANKCAP BRATE INFL LOAN LRATE RGDP
Exogenous variables: C
Date: 03/29/18 Time: 12:40
Sample: 2002Q1 2017Q1
Included observations: 57

Lag	LogL	LR	FPE	AIC	SC	HQ
0	-1409.688	NA	1.51e+14	49.67327	49.88833	49.75685
1	-1022.824	678.7088	6.83e+08*	37.36225*	38.86766*	37.94731*
2	-1005.533	26.69544	1.37e+09	38.01870	40.81445	39.10522
3	-980.2506	33.70970	2.23e+09	38.39476	42.48086	39.98276
4	-920.9660	66.56517*	1.23e+09	37.57775	42.95420	39.66722

* indicates lag order selected by the criterion
LR: sequential modified LR test statistic (each test at 5% level)
FPE: Final prediction error
AIC: Akaike information criterion
SC: Schwarz information criterion
HQ: Hannan-Quinn information criterion

Table 3: Johansen cointegration test

Date: 03/29/18 Time: 12:48
Sample (adjusted): 2002Q4 2017Q1
Included observations: 58 after adjustments
Trend assumption: Linear deterministic trend
Series: BANKCAP BRATE INFL LOAN LRATE RGDP
Lags interval (in first differences): 1 to 2

Unrestricted Cointegration Rank Test (Trace)

Hypothesized No. of CE(s)	Eigenvalue	Trace Statistic	0.05 Critical Value	Prob.**
None *	0.550700	140.2774	95.75366	0.0000
At most 1 *	0.540482	93.87371	69.81889	0.0002
At most 2 *	0.396243	48.77421	47.85613	0.0409
At most 3	0.165668	19.50837	29.79707	0.4568
At most 4	0.122177	9.003193	15.49471	0.3651
At most 5	0.024609	1.445185	3.841466	0.2293

Trace test indicates 3 cointegrating eqn(s) at the 0.05 level
* denotes rejection of the hypothesis at the 0.05 level
**MacKinnon-Haug-Michelis (1999) p-values

Table 4: VECM result for Demand equation

Vector Error Correction Estimates
Date: 03/29/18 Time: 16:14
Sample (adjusted): 2002Q3 2017Q1
Included observations: 59 after adjustments
Standard errors in ( ) & t-statistics in [ ]

Cointegrating Eq:	CointEq1			
LOAN(-1)	1.000000			
INFL(-1)	0.055702 (0.02996) [1.85897]			
LRATE(-1)	-0.327914 (0.24132) [-1.35883]			
RGDP(-1)	-17.20532 (11.7634) [-1.46262]			
C	126.8770			
Error Correction:	**D(LOAN)**	**D(INFL)**	**D(LRATE)**	**D(RGDP)**
CointEq1	0.012775 (0.03276) [0.38997]	0.807694 (0.18278) [4.41904]	0.138906 (0.07040) [1.97303]	-0.019912 (0.00681) [-2.92308]
D(LOAN(-1))	-0.044842 (0.14199) [-0.31580]	-0.552027 (0.79222) [-0.69681]	-0.269143 (0.30515) [-0.88199]	0.028748 (0.02953) [0.97362]
D(INFL(-1))	-0.006336 (0.02562) [-0.24729]	-0.053180 (0.14295) [-0.37202]	-0.034702 (0.05506) [-0.63022]	0.004356 (0.00533) [0.81753]
D(LRATE(-1))	-0.005514 (0.06162) [-0.08949]	0.304449 (0.34379) [0.88557]	0.091781 (0.13242) [0.69310]	0.001349 (0.01281) [0.10530]
D(RGDP(-1))	8.923807 (15.7316) [0.56725]	-25.20202 (87.7714) [-0.28713]	25.50068 (33.8082) [0.75428]	0.231653 (3.27126) [0.07081]
C	0.163186 (0.15421)	3.483210 (0.86040)	-0.207379 (0.33141)	-0.015652 (0.03207)

	[1.05819]	[4.04837]	[-0.62575]	[-0.48809]
R-squared	0.011151	0.371542	0.091331	0.160597
Adj. R-squared	-0.082136	0.312254	0.005607	0.081408
Sum sq. resids	7.952205	247.5422	36.72704	0.343854
S.E. equation	0.387352	2.161159	0.832444	0.080547
F-statistic	0.119535	6.266684	1.065412	2.028027
Log likelihood	-24.59677	-126.0217	-69.73366	68.06237
Akaike AIC	1.037179	4.475311	2.567243	-2.103809
Schwarz SC	1.248454	4.686586	2.778518	-1.892534
Mean dependent	0.071914	3.046441	-0.139831	-0.002912
S.D. dependent	0.372362	2.605989	0.834788	0.084040
Determinant resid covariance (dof adj.)		0.003015		
Determinant resid covariance		0.001963		
Log likelihood		-150.9919		
Akaike information criterion		6.067522		
Schwarz criterion		7.053472		

Table 5: VECM result for Supply equation

Vector Error Correction Estimates
Date: 03/29/18 Time: 16:46
Sample (adjusted): 2002Q3 2017Q1
Included observations: 59 after adjustments
Standard errors in ( ) & t-statistics in [ ]

Cointegrating Eq:	CointEq1
LOAN(-1)	1.000000
INFL(-1)	0.001555
	(0.04438)
	[0.03503]
LRATE(-1)	-0.974997
	(0.31742)
	[-3.07162]
BANKCAP(-1)	9.10E-08
	(2.1E-07)
	[0.42764]
BRATE(-1)	0.549641
	(0.24606)
	[2.23374]
C	6.001994

Error Correction:	D(LOAN)	D(INFL)	D(LRATE)	D(BANKCAP)	D(BRATE)
CointEq1	0.015091	0.440443	0.165593	49128.09	0.000843
	(0.02351)	(0.14551)	(0.04627)	(39092.7)	(0.06488)
	[0.64186]	[3.02693]	[3.57896]	[1.25671]	[0.01300]
D(LOAN(-1))	-0.095255	-0.053885	-0.361675	-460756.4	-0.052717
	(0.14102)	(0.87274)	(0.27751)	(234472.)	(0.38914)
	[-0.67548]	[-0.06174]	[-1.30328]	[-1.96508]	[-0.13547]
D(INFL(-1))	-0.018186	0.202002	-0.045568	-39521.46	0.030106
	(0.02345)	(0.14512)	(0.04614)	(38987.3)	(0.06471)
	[-0.77560]	[1.39200]	[-0.98752]	[-1.01370]	[0.46529]
D(LRATE(-1))	0.000256	0.156607	-0.017584	17007.25	-0.072890
	(0.06352)	(0.39311)	(0.12500)	(105615.)	(0.17528)
	[0.00402]	[0.39838]	[-0.14067]	[0.16103]	[-0.41584]
D(BANKCAP(-1))	1.41E-07	-7.09E-07	-1.20E-09	0.295709	2.48E-07
	(8.5E-08)	(5.3E-07)	(1.7E-07)	(0.14187)	(2.4E-07)
	[1.65304]	[-1.34324]	[-0.00717]	[2.08439]	[1.05150]
D(BRATE(-1))	0.003305	-0.222966	0.089996	23003.94	0.326031
	(0.05097)	(0.31547)	(0.10031)	(84755.9)	(0.14066)
	[0.06483]	[-0.70677]	[0.89715]	[0.27141]	[2.31779]
C	0.061071	2.804668	0.032416	521118.7	-0.294654
	(0.08586)	(0.53139)	(0.16897)	(142766.)	(0.23694)
	[0.71125]	[5.27794]	[0.19185]	[3.65017]	[-1.24358]
R-squared	0.069529	0.272384	0.283052	0.158640	0.154963
Adj. R-squared	-0.037833	0.188429	0.200328	0.061560	0.057459
Sum sq. resids	7.482735	286.5993	28.97795	2.07E+13	56.97937
S.E. equation	0.379340	2.347664	0.746504	630729.0	1.046784
F-statistic	0.647615	3.244384	3.421618	1.634122	1.589295
Log likelihood	-22.80167	-130.3435	-62.74280	-867.9150	-82.68935
Akaike AIC	1.010226	4.655713	2.364163	29.65813	3.040317
Schwarz SC	1.256714	4.902200	2.610650	29.90462	3.286804
Mean dependent	0.071914	3.046441	-0.139831	515899.5	-0.130847
S.D. dependent	0.372362	2.605989	0.834788	651087.9	1.078219

Determinant resid covariance (dof adj.)	1.42E+11
Determinant resid covariance	7.55E+10
Log likelihood	-1157.469
Akaike information criterion	40.59218
Schwarz criterion	42.00068

Table 6: VECM estimation with parameter restrictions

Vector Error Correction Estimates

Date: 03/29/18 Time: 00:46

Sample (adjusted): 2002Q4 2017Q1

Included observations: 58 after adjustments

Standard errors in ( ) & t-statistics in [ ]

Cointegration Restrictions:						
A(6,1)=0,A(3,1)=0,			B(1,1)=0,B(1,2)=0,B(1,6)=0			
Convergence achieved after 12 iterations.						
Not all cointegrating vectors are identified						
LR test for binding restrictions (rank = 1):						
Chi-square(5)	16.30657					
Probability	0.006021					
Cointegrating Eq:	CointEq1					
BANKCAP(-1)	0.000000					
BRATE(-1)	0.000000					
INFL(-1)	0.010273					
LOAN(-1)	-0.220117					
LRATE(-1)	0.560626					
RGDP(-1)	0.000000					
C	-10.07362					
Error Correction:	D(BANKCAP)	D(BRATE)	D(INFL)	D(LOAN)	D(LRATE)	D(RGDP)
CointEq1	-107909.5	-0.204984	0.000000	0.015807	-0.479734	0.000000
	(94465.0)	(0.16845)	(0.00000)	(0.06530)	(0.10764)	(0.00000)
	[-1.14232]	[-1.21688]	[NA]	[0.24207]	[-4.45697]	[NA]
D(BANKCAP(-1))	0.181726	2.24E-07	-7.42E-07	1.45E-07	-9.01E-08	3.36E-08

	(0.16643)	(2.7E-07)	(6.8E-07)	(1.1E-07)	(1.7E-07)	(2.3E-08)
	[1.09191]	[0.82052]	[-1.09106]	[1.37536]	[-0.52021]	[1.45753]
D(BANKCAP(-2))	-0.021241	-6.83E-08	-2.95E-07	2.21E-08	-1.04E-07	2.33E-09
	(0.17068)	(2.8E-07)	(7.0E-07)	(1.1E-07)	(1.8E-07)	(2.4E-08)
	[-0.12445]	[-0.24455]	[-0.42346]	[0.20431]	[-0.58285]	[0.09869]
D(BRATE(-1))	64255.45	0.340058	0.121213	0.023454	0.122211	-0.010776
	(92962.0)	(0.15219)	(0.37978)	(0.05878)	(0.09679)	(0.01288)
	[0.69120]	[2.23447]	[0.31917]	[0.39898]	[1.26260]	[-0.83690]
D(BRATE(-2))	-34004.33	-0.096593	-0.225303	-0.022820	0.130849	-0.010740
	(92363.3)	(0.15121)	(0.37733)	(0.05840)	(0.09617)	(0.01279)
	[-0.36816]	[-0.63881]	[-0.59710]	[-0.39073]	[1.36060]	[-0.83958]
D(INFL(-1))	-12568.15	0.027646	0.334808	-0.011911	0.015926	-0.006384
	(40895.8)	(0.06695)	(0.16707)	(0.02586)	(0.04258)	(0.00566)
	[-0.30732]	[0.41293]	[2.00398]	[-0.46060]	[0.37403]	[-1.12715]
D(INFL(-2))	-40922.99	-0.021102	0.103414	-0.006228	0.013683	-0.004100
	(40713.3)	(0.06665)	(0.16633)	(0.02574)	(0.04239)	(0.00564)
	[-1.00515]	[-0.31661]	[0.62176]	[-0.24191]	[0.32278]	[-0.72708]
D(LOAN(-1))	-401477.2	-0.021530	0.528551	-0.082748	-0.140052	-0.002097
	(241632.)	(0.39557)	(0.98714)	(0.15279)	(0.25159)	(0.03347)
	[-1.66152]	[-0.05443]	[0.53544]	[-0.54157]	[-0.55667]	[-0.06266]
D(LOAN(-2))	-272923.3	0.491782	-0.480852	0.002957	0.180668	0.023465
	(251566.)	(0.41184)	(1.02772)	(0.15907)	(0.26193)	(0.03484)
	[-1.08490]	[1.19412]	[-0.46788]	[0.01859]	[0.68975]	[0.67346]
D(LRATE(-1))	22492.72	-0.050526	0.374932	0.012140	-0.018336	0.011350
	(113827.)	(0.18634)	(0.46502)	(0.07198)	(0.11852)	(0.01577)
	[0.19761]	[-0.27114]	[0.80628]	[0.16867]	[-0.15471]	[0.71990]
D(LRATE(-2))	105545.6	-0.097924	-0.153528	0.011902	0.046217	-0.006280
	(110817.)	(0.18142)	(0.45272)	(0.07007)	(0.11538)	(0.01535)
	[0.95243]	[-0.53977]	[-0.33912]	[0.16985]	[0.40055]	[-0.40918]

D(RGDP(-1))	-32975346	-89.03595	-121.3820	-3.931947	11.35399	2.240546
	(4.3E+07)	(70.5600)	(176.080)	(27.2542)	(44.8771)	(5.96964)
	[-0.76507]	[-1.26185]	[-0.68936]	[-0.14427]	[0.25300]	[0.37532]
D(RGDP(-2))	-12601208	79.60200	-37.53743	-4.375185	5.548520	0.402321
	(4.1E+07)	(66.9843)	(167.157)	(25.8731)	(42.6029)	(5.66712)
	[-0.30797]	[1.18837]	[-0.22456]	[-0.16910]	[0.13024]	[0.07099]
C	1029178.	-0.152632	3.595013	0.114819	-0.235203	-0.016412
	(339776.)	(0.55624)	(1.38808)	(0.21485)	(0.35378)	(0.04706)
	[3.02899]	[-0.27440]	[2.58991]	[0.53441]	[-0.66483]	[-0.34874]
R-squared	0.238186	0.246377	0.206941	0.073694	0.488168	0.127916
Adj. R-squared	0.013105	0.023716	-0.027372	-0.199987	0.336945	-0.129746
Sum sq. resids	1.86E+13	49.90605	310.7811	7.445648	20.18762	0.357216
S.E. equation	650544.7	1.065002	2.657669	0.411363	0.677355	0.090103
F-statistic	1.058223	1.106513	0.883180	0.269269	3.228130	0.496449
Log likelihood	-850.6499	-77.93971	-130.9792	-22.76685	-51.69261	65.30741
Akaike AIC	29.81551	3.170335	4.999281	1.267822	2.265262	-1.769221
Schwarz SC	30.31286	3.667683	5.496630	1.765171	2.762611	-1.271873
Mean dependent	522384.1	-0.112069	3.070690	0.072979	-0.156724	-0.003003
S.D. dependent	654849.7	1.077860	2.622026	0.375523	0.831843	0.084771

Determinant resid covariance (dof adj.)	1.31E+09
Determinant resid covariance	2.50E+08
Log likelihood	-1055.349
Akaike information criterion	39.49478
Schwarz criterion	42.69202