

Impact of monetary policy on bank profitability in Tunisia: Evidence from a dynamic panel model analysis

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Introduction

- The Global Financial Crisis (2008) highlighted the crucial role of financial stability in banking sector.
- A financially stable and profitable banking sector is better equipped to withstand adverse shocks, thus ensuring overall financial system stability
- Interconnection between Financial Stability, Monetary Policy, and Bank Profitability.
- Monetary policy impacts bank profitability through interest rates and other instruments

Previous Research

- Diverse Research Findings**
 - Varied impact of monetary policy on bank performance.
 - Positive relationship found (Borio et al., 2017; Hancock, 1985; Berument and Froyen, 2015).
 - Positive association between interest rates and profitability (Demircug-Kunt and Huizinga, 1999).
- Contrasting Studies**
 - No significant correlation (Flannery, 1981).
 - Positive profitability during negative interest rates (Madaschi and Nuevo, 2017).
 - Weak negative relationship (Stráský and Hwang, 2019).
- Unconventional Monetary Tools**
 - Unconventional policies during severe downturns (Rudebusch, 2018).
 - Effects on bank credit risk (Lambert and Ueda, 2014).
 - Negative impact on bank performance (Mamatzakis and Bermpel, 2016).
- Tunisian Literature Review**
 - Determinants of profitability in Tunisia (Ben Naceur, 2003; Ben Khedhiri and Ben Khedhiri, 2011; Bejaoui and Bouzgarrou, 2014).
 - Technical efficiency analysis (Jelassi and Dalhoumi, 2021).
 - Factors affecting bank profitability (Ben Moussa et al., 2022).

Tunisian context

Tunisia accounts 23 resident banks, 7 non-resident banks, 8 leasing institutions, 2 factoring companies, 2 merchant banks and 2 payment institutions. According to their business model, the 23 resident banks are classified into 18 universal banks, 2 banks specializing in the financing of micro-projects and SMEs and 3 banks specializing in Islamic banking.

The activity of the banking system is concentrated on resident banks (93% of total assets, 95% of loans and 97% of deposits).

The financial market shows a low percentage in depth.

Bank profits in Tunisia are generated through two types of income: interest and non-interest income. In the Tunisian banking industry, interest income is significantly larger than non-interest income. Non-interest income mainly includes fees and commissions, trading and investment activities.

Bank deposits are priced at low or no interest rate, whereas credits and loans granted are priced at rates indexed to money market rate (except for long-term property loans, where rates are fixed). Due to concentration and limited competition phenomena, when monetary policy stance changes, rates on loans in the Tunisia banking industry adjust more rapidly than rates on deposits, in an asymmetric manner, hence Tunisian banks tend to make more profits when monetary policy rate changes.

Present Study

Research Objective

- The Goal is to contribute to existing literature by exploring monetary policy and bank profitability in emerging markets like Tunisia.
- Aims to provide insights for policymakers and practitioners.
- Focus on deepening understanding of monetary policy's dynamics and impact on bank profitability in Tunisian context.

Data

This study used quarterly variables presented in Table 1. The sample comprises 19 banks, covering the period from 2013Q1 to 2022Q4. The study focuses on 7 variables:

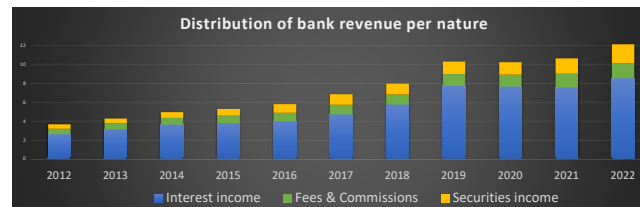
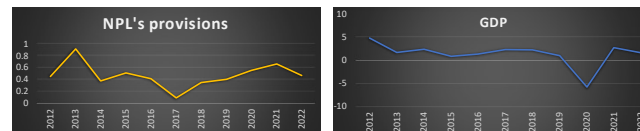
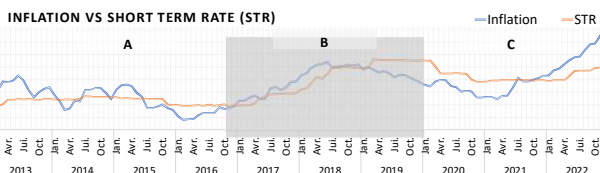
- Dependent variables:** ROA = Return on assets; ROE = Return on equity.
- Monetary policy variables:** STR = Short-term rate; LTR = long-term interest
- Control variables:** NPL = Non-performing loan ratio; Fee = non interest revenue; and GDP = Gross domestic product.

The results are estimated by applying the system GMM estimator. There are 3 panels: Panel A, Panel B and Panel C represent respectively the periods: (A) Accommodative Monetary Policy Q1 2013 Q2 2016 (B) Restrictive Monetary Policy (C) Q32016-Q42019 and Covid-19 period Q12020-Q42022.

Regression results using System generalized method of movements (GMM) Model

	A		B		C	
	ROA	ROE	ROA	ROE	ROA	ROE
L.ROA	0.065** (0.029)		0.249*** (0.029)		0.191*** (0.062)	
L.ROE		0.188*** (0.058)		0.248*** (0.062)		0.465*** (0.142)
SR	-0.070 (0.087)	-0.685 (1.658)	0.058* (0.328)	2.165* (1.511)	-0.398* (0.129)	-3.598* (1.977)
LR	-0.004 (0.093)	-0.757 (1.162)	0.020** (0.085)	-9.220** (0.740)	-0.089** (0.054)	-8.488*** (1.808)
NPL	-0.030* (0.0155)	-0.480 (0.335)	-0.098*** (0.106)	-1.398*** (0.256)	-0.514* (0.306)	-1.687*** (0.512)
Fee	0.029 (0.026)	-1.138 (0.182)	0.015 (0.010)	0.108 (0.380)	-0.107 (0.175)	-0.101 (0.512)
GDP	0.077*** (0.022)	1.462* (0.801)	0.123*** (0.036)	0.204 (0.027)	1.364* (0.807)	-0.135*** (0.037)
Constant	0.185 (0.813)	24.094 (0.804)	0.1433 (0.275)	0.1848 (1.537)	0.0983 (1.000)	0.1153 (1.433)
Observations	246	246	241	241	207	207
Number of id	19	19	19	19	19	19
AR(2) (p-value)	0.0831	0.0945	0.1433	0.1848	0.0983	0.1153
Sargan test (p-value)	1.0000	1.0000	1.0000	1.0000	1.000	1.000

Notes: Standard errors in parentheses. *** p < 0.01, ** p < 0.05, and * p < 0.1. ROA = Return on assets; ROE = Return on equity; CHA = Central Bank Assets to GDP ratio; CAR = Capital adequacy ratio; NPL = Non-performing loan ratio; COST = Cost of income ratio; SIZE = Total assets; LAR = Loan to asset ratio; INF = Inflation; and GDP = Gross domestic product.



Results

Period A : Accommodative Monetary Policy

- Challenging years, since 2011 due to popular uprising.
- The need for a banking sector reform, to ensure rigorous credit issuance and strengthen financial stability through additional provisions. Recapitalization of public banks has been carried out/undertaken.
- STR and LTR do not have an impact on ROA and ROE

⇒ *Economic conditions have a more significant impact on bank profitability than changes in interest rates. Genay and Podjasek (2014)*

Period B: Restrictive Monetary Policy

- This period was marked by a calming of social, economic, and political tensions, along with continuation of banking reforms initiated since 2011. However, this period witnessed a significant increase in Government borrowing.
- STR and LTR have a positive and significant impact on ROA and ROE.

⇒ *the banking sector reform, associated with the increased level of Government borrowing from the banking sector contributed positively to its profitability. This aligns with the results found by previous studies conducted by Alessandri and Nelson (2015), Borio et al. (2017), and Claessens et al. (2018).*

Period C: unconventional/exceptional measures (Covid-19)

- The Covid-19 pandemic led to a global economic recession, during 2019-2021.
- The need for rapid and exceptional measures to encounter recession at national level.
- Financial measures include policy rate reduction in Two Instances (100 pbs et 50 pbs) and exceptional monetary instrument
- STR and LTR have a negative and significant impact on ROA and ROE.

⇒ *The exceptional measures impacted positively the banking profitability.*
⇒ *Banks borrow and lend at rates indexed to the SRT, which is why changes in interest rates, whether up or down, don't significantly impact their profits.*

Further Research

Expanding analysis and considering additional variables, such as the influence of Government and public entities debt level on bank profitability in Tunisia, to provide a comprehensive understanding of the various determinants of bank profitability in the Tunisian context.

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