

Banks' performance in dollarized economies

Studies on financial dollarization show that some countries have a higher degree of dollarization of their economies. The aftermath of dollarization is both positive and negative. On the one side, dollar denominated assets help to minimize financial risks stemming from inflation. On the other side, it reduces the effectiveness of monetary policy as well as seigniorage – government profit from money creation.

Policy makers in the dollarized economies face comparatively lower effectiveness of the monetary policy, limitations to flexibility of the fiscal policy and increased risks to financial stability. The uncertainty and risks are attributable to the specifics of the monetary policy, which is determined not by the country's government but mostly by external forces. The present research gives a better understanding of how monetary policy adjustments induced by the Federal Reserve System (Fed) and the European Central Bank (ECB) affect profitability of banks in the dollarized economies. It contributes to the existing literature on financial dollarization by comparative analysis of the response of profitability of banks located in countries with different levels of dollarization to monetary policy adjustments.

By comparing the effect of the interest rate change in the countries with different dollarization levels we come to conclusions about difference in responses to the monetary policy adjustments induced by the Fed and the ECB. Hence, by analyzing the historical data on the profitability indicators of banks from the developing economies, this paper is focused on finding the answer to the following research question: “Does dollarization of the economy enhance the effect of exogenous monetary shocks on bank performance?”

The existing literature on the correlation between bank performance and monetary policy seems to be mixed and inconclusive. Demirgüç-Kunt and Huizinga (1999) reveal that profitability and interest margins are positively correlated with the level of interest rates. Borio et al. (2015) using a dataset of 109 large international banks during 1995-2012 studies the impact of monetary policy on return on assets, loan loss provisions and interest rate income. They found a positive effect on interest rate income that overcomes a negative effect on loan loss provisions as well as other income sources. Besides, there are studies that found both no impact and negative impact. Thus, English (2002) states that monetary policy did not significantly affect interest rate margins of banks during 1979 and 2001 for 10 OECD economies. Busch and Memmel (2015) and Alessandri and Nelson (2015) determine negative short-term impact for German and the U.K.

banks. Papers on stock returns of banks after policy declarations determine significant drop of bank stock prices, once interest rate increases (Aharony et al. (1986) and English et al. (2012)). Thereby, there is no consensus in the literature regarding the effect of the impact of interest rates on bank profitability measures.

The literature on enterprise performance also covers a set of indicators that are used as internal (bank specific) and external factors (country-specific macro-level parameters) which may affect the profitability of businesses. To determine control variables for the research we take into account the micro-level data on banks' balance sheets and income statements as well as the macroeconomic parameters of the selected countries. After looking into the literature about profitability of banks in emerging economies we came up with a list of commonly used bank-level variables: measures of bank profitability – Net Interest Margin (NIM), Return on Assets (ROA) and Return on Equity (ROE); independent variables – bank size, liquidity ratio, credit risk and equity ratio. From macro-level perspective we will control on GDP per capita growth indicator and inflation rates.

The database covers the period from 2000 to 2016 and consists of 60 banks from 15 countries in Latin America and Southern and Eastern Europe. All these countries are dollarized to a certain extent and can be divided into three categories: with low / high / full dollarization level. To distribute countries among the categories we use methodology implemented by the IMF (Balino et. al, 1999) and German Institute for Economic Research (Alvarez-Plata and García-Herrero, 2008). Alvarez-Plata and García-Herrero (2008) point out that if country has less than 10% average share of foreign currency deposits to broad money it is considered to have low dollarization level. The IMF paper states that countries with average 30% and higher ratio of foreign currency deposits to broad money are highly dollarized. Finally, countries which does not officially use national currency as a legal tender and accepted foreign currency instead are categorized as fully dollarized.

To reflect the monetary policy instruments, we use average overnight interest rates with one period lag: Federal funds rate (set by the Fed) and Marginal lending rate (set by the ECB). We denote them as external interest rates and the model is as follows:

$$\begin{aligned}
\text{Bank Profitability}_{i,t,k} = & \beta_0 + \beta_1 \text{Size}_{i,t,k} + \beta_2 \text{Liquidity}_{i,t,k} + \beta_3 \text{Credit risk}_{i,t,k} + \beta_4 \text{Bank Growth}_{i,t,k} \\
& + \beta_5 \text{Equity ratio}_{i,t,k} + \beta_6 \text{GDP per capita growth}_{t,k} + \beta_7 \text{Inflation}_{t,k} \\
& + \beta_8 \text{Highly Dollarized Countries Dummy}_k + \beta_9 \text{Fully Dollarized Countries Dummy}_k \\
& + \beta_{10} \text{Internal interest rate}(-1)_{t,k} + \beta_{11} \text{External Interest Rate}(-1)_{t,k} \\
& + \beta_{12} \text{Internal Interest rate}(-1)_{t,k} * \text{Highly Dollarized Countries Dummy}_k \\
& + \beta_{13} \text{External Interest rate}(-1)_{t,k} * \text{Highly Dollarized Countries Dummy}_k \\
& + \beta_{14} \text{External Interest rate}(-1)_{t,k} * \text{Fully Dollarized Countries Dummy}_k
\end{aligned}$$

The estimation is performed with the use of Ordinary Least Squares (OLS). Pooled and fixed/random effect models are estimated. The choice between the later models is made with the use of Breush-Pagan test and Sargan-Hansen test.

Finally, we estimate pooled and fixed effects models and determine that on average in short term bank's profitability falls due to the increase of external interest rate if the bank is located in the highly or fully dollarized economy. In addition, banks from the fully dollarized economies experience stronger negative effect of the increase of external interest rate than banks from the highly dollarized economies which suggests evidence that the higher the level of dollarization of the economy the more businesses are exposed to the effect of the interest rate change. Our findings could be useful for the policymakers as the research results shed more light on the response of the dollarized economies to the change of the external interest rate.