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**ЭМПИРИЧЕСКАЯ ОЦЕНКА ЭФФЕКТИВНОСТИ
МАКРОПРУДЕНЦИАЛЬНОЙ ПОЛИТИКИ**

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Аннотация

Проблемы реализации макропруденциальной политики значительно усилились вследствие кризиса 2007-2008 года. Лица, ответственные за разработку данной политики, а также регулирующие органы в настоящее время проводят огромный объем работ, чтобы гарантировать неповторение такого кризиса в ближайшем будущем. Именно поэтому в данной статье мы пытаемся эмпирически оценить влияние макропруденциальной политики, используемой ее разработчиками и регулятором с точки зрения ее эффективности.

Ключевые слова: макропруденциальная политика, разработчики политики

***AN EMPIRICAL ASSESSMENT OF THE EFFECTIVENESS OF
MACROPRUDENTIAL POLICIES***

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Abstract

The issues regarding macroprudential policy has taken great stride in aftermath of the 2007-2008 crisis; [1]policy makers as well as regulators have now been working tirelessly

to ensure that there will no such crisis in the nearest future. It is in view of this that we are trying to assess empirically the impact of macroprudential policies employed by regulators and policy makers.

Keywords: Macro prudential policy, Policy makers

Overview

It is undeniable that there is somewhat difficulty in realizing consistent results empirically due to low level of statistical data as well as the fact that macroeconomic models employed in financial and economic systems do not take into accounts various interconnected economic systems. Regulators are faced with the challenge of empirical assessment of macroprudential policy both economic and financially since results could quite vague[2] [3]. Because of this, numerous methodologies have been employed in assessing the results, some of the employed methods are not limited to assessing macro stress tests, counterfactual analysis, micro data-based analysis, regression analysis just to mention but few[4]. Research has realized that most regulators and or policy makers normally employ the panel data method as their econometric model.[5] One fundamental issue is the panel data does not see the problem regarding limited statistical data but rather focuses on the impact of macro prudential policy tools.

Methodology

In assessing the effectiveness of macro prudential policy [6] we structure a model which takes into accounts various parameters which can withstand various shocks. The model is presented theoretically and we further employ it econometrically.

Theoretical Model

Our theoretical model highlights the empirical model employed in analysing and proving results from our assessment of the effects of the policies on the total domestic credit with an economy [7]. We however employ the regression model in its reduced form as part of our analysis;

$$C_{i,t} = \eta_i + \rho C_{i,t-1} + \beta VIX_t + \sum_{k=1}^p \theta_k X_{i,t-k} + \delta MAPP_{i,t-1} + \epsilon_{i,t} \quad (1)$$

We consider the global risk aversion variable the VIX index as our dependent variables, we then take into account the macroeconomic stance variable as X, made of,

1. Output/ Real GDP growth and the Nominal interest rate regarding the rate of change of monetary policy.

2. We also consider the Macroprudential policy index (MAPP), which takes into account the equally weighted sum of individual macroprudential policy instruments i.e. Loan to value ratio (LTV), the ratio of debt to income (DTI), limits of domestic credit growth (DC), limits on lending abroad or foreign lending (FC), reserve requirements within the banking sector, dynamic provisions, Countercyclical requirements (CTC) and limits on the distribution of profit (PRD)

The panel data was employed as cumulative measure due to the fact that in macroprudential assessment, credit as well as house price growth could be affected not just in the first quarter but also in successive quarters. It is worthy to know that some of these polices could delay in their outcome, notwithstanding the fact that we may have records of their measure available it may not take effect until years later and because of that a country's overall macroprudential position[8] is thus chosen as our interest variable.

Our parameters include η_i as a fixed effect, i represents countries, t shows time period. Our η_i which is the country specific dummy is considered a fixed effect; since it assesses the country specific intercept period for each country in the sample. The dynamic panel data regression model with country fixed effects is recommended for this type of analysis

The Econometric model

We consider the classical equation for the fixed effect model with stern exogenous regressors to take account of lags of the dependent variable, thus allowing for error serial correlation of unknown form. We however have equation (2) and based on assumptions we have equation (3)

$$y_{it} = \alpha y_i(t - 1) + x'_{it}\beta + \eta_i + v_{it} \quad (2)$$

$$E(v_{it} | x_{i1}, \dots, x_{iT}, \eta_i) = 0 \quad (t = 1, \dots, T) \quad (3)$$

This equation thus contains lags of x and other lags of y . equation (1) however take into account the vital features of the model, such as the dynamic effect of x and y which's speed of adjustment is controlled by the coefficient of the lagged y .

Equation (2) suggests that x is uncorrelated to present, past or future values thus making them strictly exogenous variables. It however doesn't ignore the correlation between x and the individual effects (η)

On the other hand the Lagged y is however correlated in its construction with the individual effects (η) and with lagged v , but it may also be correlated simultaneously with v if v is serially correlated, which is ignored by equation (2). It is worthy to know that the lagged y is an effective endogenous illustrative variable in equation (1) in view of both η and v . we can also take into account the partial adjustment models of organizations investment or labour demand as well as household consumption or labour supply models.

The use of the coefficient α takes into accounts the level of adjustment costs or the extent of habits; it however has a structural significance. There are reasons to anticipate serial correlation in view of the transitory errors v of our economic model. With regards to the lagged y , we however treat it as an endogenous explanatory variable. Assumption (2) infers that for all t and s

$$E [x_{is} (\Delta y_{it} - \alpha \Delta y_{i(t-1)} - \Delta x'_{it} \beta)] = 0 \quad (4)$$

Our model causes internal moment conditions subject to the rank condition, and as such guarantees identification notwithstanding the serial correlation of unspecified form and the endogeneity of lagged y . Fundamentally, what we seek to do is to exploit the strict exogeneity of x so as to use lags and leads of x which do not have a direct impact on Δy_{it} as instruments for $\Delta y_{i(t-1)}$.

In the event the model is simultaneous and the first lag of the scalar variable x and $T = 3$, we then realize three instruments i.e. x_1 , x_2 and x_3 for the sole equation in initial differences

$$y_3 - y_2 = \alpha(y_2 - y_1) + \beta_0(x_3 - x_2) + \beta_1(x_2 - x_1) + (v_3 - v_2) \quad (5)$$

The coefficients α , β_0 , β_1 are feasibly just-identifiable from the moment conditions i.e. $E(x_{i3}\Delta v_{i3}) = 0$, ($s = 1, 2, 3$).

The models ought not to be regarded as an extension of the pure autoregressive model. The justification for the AR models is to study the dependence of the time series, so that it will be natural to begin with serially uncorrelated errors. Further, lagged y seems in a structural role, and takes into accounts models whose effects are identified irrespective of serial correlation.

Conclusion

The prime objective in the development of macro-prudential policy guidelines is to appreciate the interaction between the financial system as well as the macroeconomy and precise assessment of the usefulness of the developed macroprudential policy policies.

Our aim for this paper was develop a comprehensive framework for regulators as well as policy-makers, which would consist of the most representative approaches used in diagnosing the effectiveness of the macroprudential policy using an empirical approach. Our model was presented as a general structure with variables which could be improved further giving the specific features of respective economies.

References

1. Al-Darwish, A., Hafeman, M., Impavido, G., Kemp, M. and P. O'Malley (2011) „Possible Unintended Consequences of Basel III and Solvency II”. IMF Working Paper WP/11/187.
2. Alpanda, S; Cateau, G.; Meh, C. (2014) „A policy model to analyse macro prudential regulations and monetary policy”, BIS Working Paper, no. 461.
3. Beirne, J.; Friedrich, Ch. (2014) „Capital Flows and Macroprudential Policies – A Multilateral Assessment of effectiveness and Externalities”, Bank of Canada Working Paper, no. 31.

4. Bernanke, B., Gertler, M. and Gilchrist, S. (1999) „The financial accelerator in a quantitative business cycle framework”. In J. Taylor and M. Woodford (eds) Handbook of Macroeconomics (Vol. 1, Part C, pp.1341– 1393). North Holland: Elsevier.

5. Bianchi, J. (2011) „Overborrowing and Systemic Externalities in the Business Cycle”, American Economic Review, 101(7), pp. 3400-3426.

6. Cerutti, E.; Claessens, S.; Laeven, L. (2015) „The Use and Effectiveness of Macroprudential Policies: New Evidence”, IMF Working Paper, no. WP/15/61.

7. Committee on the Global Financial System (2012) „Operationalising the selection and application of macroprudential instruments”, CGFS Papers, no. 48.

8. Raju et al (2016) Modelling Approaches to Assess The Effectiveness Of Macro-Prudential Policy