Macroprudential Policies and Current Account Balance

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Abstract

Macroprudential policies have become essential tools for the policy makers in order to maintain financial stability. Effectiveness of these policies has been studied by a growing literature with an emphasis on the impact of the policies on target variables such as credit growth and asset price appreciations. In this paper, we investigate the impact of macroprudential policies on the current account balance considering the link between external imbalances and financial stability. Building on a standard empirical current account model, we show that usage of an additional macroprudential instrument is associated with an improvement in the current account balance. Moreover, our results indicate that positive impact of macroprudential policy measures on the current account balance is stronger in the deficit countries compared to the surplus countries.

Keywords: Global Imbalances, Current Account Balance, Macroprudential Policies and Panel Data.

JEL Codes: C33 Panel Data Models, E58 Central Banks and Their Policies, F32 Current Account Adjustment, G18 Government Policy and Regulation, G28 Government Policy and Regulation.

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1. Introduction

Macroprudential measures have become an essential part of policy toolkit to preserve financial stability especially after the global financial crisis. The experience prior to the crisis shows that financial imbalances can grow undetected even in stable macroeconomic environments. Along with concerns about the procyclicality of financial system, another challenging issue related with financial stability is expanding current account surpluses and deficits over the world. These global imbalances have reached a peak level prior to the global financial crisis.

Recent literature provides evidence on the effectiveness of macroprudential policies using different indicators such as credit growth, asset price appreciations and capital flow volatility[1]. On the other hand, effects of macroprudential policies on output and inflation rate have been found to be modest[2]. However, we have limited information about the impact of macroprudential policies on the current account balance. This paper aims to fill this gap in the literature.

We utilize the macroprudential policy index[3] developed by Cerutti et. al. (2017) in order to summarize the macroprudential policy stance of the countries in our panel data. To study the effect of macroprudential policies on the current account balance, we build an empirical current account model following Philips et. al. (2013) closely. Our findings suggest that usage of an additional macroprudential policy measure causes an improvement in the current account balance. Furthermore, we extend our analysis by allowing different slopes for deficit and surplus countries. We find that positive impact of macroprudential policy tools on the current account balance is stronger in the deficit countries compared to the surplus countries.

The remainder of this paper is organized as follows. Data and the methodology are described in section 2, section 3 presents the results, and section 4 summarizes our conclusions.

[1] Akinci and Olmstead-Rumsey (2018) finds that macroprudential tightening is associated with lower bank credit growth, housing credit growth, and house price appreciation. Fendoglu (2017) reports that a macroprudential policy tightening is effective in containing the credit cycles and the impact of portfolio inflows on the credit cycles. See Alam et. al. (2019) for a recent survey of literature.

[2] Richter et. al. (2019) finds that 10 percentage point tightening in loan-to-value ratios can be comparable to a 25 basis point increase in the policy rate. Assessing side effects of macroprudential policies, Alam et. al. (2019) reports mild effects of macroprudential policies on private consumption and output growth.

[3] Macroprudential policy index is based on the IMF survey on Global Macroprudential Policy Instruments. Index covers the information on the usage of 12 different macroprudential policies. These policies are loan-to-value ratios, debt-to-income ratios, dynamic loan-loss provisioning, counter-cyclical capital buffers, leverage ratios, capital surcharges on Systemically Important Financial Institutions, limits on interbank exposures, concentration limits, limits on foreign currency loans, reserve requirement ratios, limits on domestic currency loans and taxes on the revenues of financial institutions. Index takes values between 0 and 12.

2. Data and Methodology

Building on Philips et. al. (2013), we estimate the following equation,

$$\left(\frac{CA}{GDP}\right)_{i,t} = \beta_1 MPI_{i,t-1} + \beta_2 X_{i,t} + \mu_i + \nu_t + \epsilon_{i,t} \tag{1}$$

where the dependent variable is the ratio of the current account balance to GDP. As explanatory variables, we use the macroprudential policy index and other control variables (denoted by $X_{i,t}$). Country specific individual effects are denoted by μ_i, time effects are represented by ν_t and $\epsilon_{i,t}$ is the error term (assumed to be white noise).

Control variables include credit growth, average growth rate, relative income, lagged level of net foreign assets, oil trade balance, fiscal balance and population growth rate. Table **??** provides a description of the variables, data sources and expected signs of control variables[4].

The sample includes annual country-level variables from 42 countries[5] and dataset covers the period from 2001 to 2015. To assess the impact of macroprudential measures on the current account balance, we report the results from a fixed effects model. Along with the fixed effects specification, we also implement a dynamic panel data model developed by Arellano and Bover (1995) and Blundell and Bonds (1998)[6]. This specification can handle multiple endogenous variables by using first differences and lagged values of the endogenous variables as instruments.

3. Results

We report the estimation results from our baseline empirical model in table 2. Regarding the control variables in our model, we find that credit growth, average growth rate, oil trade balance, fiscal balance and population growth variables have significant effects on current account balance consistent with the theoretical predictions. Estimated coefficient on the macroprudential index

[4]See Philips et. al. (2013) for detailed information on theoretical foundations of the expected signs of control variables. Ekinci and Omay (2019) provides a recent survey of literature on the global imbalances.

[5]Our sample includes 15 emerging market economies and 27 advanced countries. Argentina, Brazil, Chile, China, Colombia, Hungary, India, Indonesia, Malaysia, Mexico, Poland, Russia, South Africa, Thailand and Turkey are classified as emerging market economies. Advanced countries in our sample are Australia, Austria, Belgium, Canada, Czech Republic, Denmark, Finland, France, Germany, Greece, Hong Kong, Ireland, Israel, Italy, Japan, Korea, Luxembourg, Netherlands, New Zealand, Norway, Portugal, Singapore, Spain, Sweden, Switzerland, United Kingdom and United States.

[6]Similar estimation methods based on a GMM procedure are applied by Calderon et al. (2002) and Cheung et al. (2013) in order to study the dynamics of the current account balance.

implies that usage of an additional policy tool is associated with an improvement in the current account balance by 0.37 percentage points.

Macroprudential policy index takes values between 0 and 12 depending on the usage of policies classified by Cerutti et. al. (2017). For our sample, average index value is 1.36 in 2001. This value increases to 3.64 by 2015. We observe that macroprudential policies have been used more intensively in the post-crisis episode as the average index value in 2009 is 2.07. Combining with the point estimates obtained by our empirical model, we can conclude that macroprudential policies have contributed substantially to current account balance adjustments in the post-crisis episode.

Next, we classify the countries in our sample as deficit and surplus countries based on the sample average of current account balance. By allowing different slopes for deficit and surplus countries, we re-estimate our empirical model as follows,

$$\begin{aligned}\left(\frac{CA}{GDP}\right)_{i,t} &= \beta_{1,S} \times SURPLUS \times MPI_{i,t-1} + \beta_{1,D} \times DEFICIT \times MPI_{i,t-1} \\ &+ \beta_2 X_{i,t} + \mu_i + \nu_t + \epsilon_{i,t} \end{aligned} \tag{2}$$

Results from the fixed effects specification and GMM estimation are reported in table 3. Considering the GMM estimators, we report Sargan test results to test the validity of instruments. Arellano-Bond tests are conducted to test the hypothesis that error term of difference equation is not second-order serially correlated.

Our results in table 3 indicate that when potential endogeneity problem is taken into consideration, usage of macroprudential policies has a significant impact on the current account balance. Furthermore, we find that the magnitude of this positive impact is larger at the deficit countries. This finding suggests that macroprudential policies have been used more aggressively in deficit countries in order to reduce the size of current account deficits.

In order to achieve a broder perspective on the impact of macroprudential policies, extending this analysis by studying the effects of individual policy measures is left for future work. Furthermore, policy indices which summarize macroprudential policy decisions as tightening and loosening actions can be useful to understand the impact of macroprudential policies on the current account balance.

4. Conclusion

Current account balance can be viewed as a target variable for the macroprudential policies especially in the deficit countries. We investigate the effects of macroprudential policies on the current account by utilizing a macroprudential policy index. We find significant and positive effects on the current account balance by usage of additional policy measures. Our analysis indicates that this impact is more pronounced in the deficit countries.

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Table 1: Variable Descriptions and Expected Impact on the Current Account Balance

Variable	Expected Sign	Source	Notes
Current account balance	–	Updated Lane and Milesi-Ferretti (2007) dataset.	percent of GDP.
Macroprudential policy index	Positive	Updated Cerutti et. al. (2017) dataset.	Indicates usage of 12 different macroprudential policies, takes values between 0 and 12.
Credit growth	Negative	BIS database	ratio of new lendings to the private sector within a year to GDP.
Average growth rate	Negative	IMF WEO database	5-year average growth rate of GDP.
Relative income	Positive	IMF WEO database	ratio of own per capita GDP to the US per capita GDP.
NFA to GDP ratio	Positive	Updated Lane and Milesi-Ferretti (2007) dataset	lagged one period.
Oil trade balance	Positive	IMF EBA and WEO database	percent of GDP.
Fiscal balance	Positive	IMF WEO database	general government net lending/borrowing (percent of GDP).
Population growth	Negative	World Bank WDI database	

Table 2: Macroprudential Policies and Current Account Balance

Macroprudential Policy Index (lagged)	0.0037**
	(0.0017)
Credit Growth	-0.0340***
	(0.0097)
Average Growth	-0.3519***
	(0.1034)
Relative Income	-0.0262
	(0.0345)
Net Foreign Assets (lagged)	-0.0069
	(0.0055)
Oil Trade Balance	0.2314**
	(0.0968)
Fiscal Balance	0.3100***
	(0.0498)
Population Growth	-1.4280***
	(0.3034)
# of Observations	588
# of Countries	42
Time Effects	YES
R-squared	0.1995

Standard errors in brackets: *** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$

Table 3: Macroprudential Policies and Current Account Balance Deficit and Surplus Economies

	Fixed Effects		GMM	
Macroprudential Policy Index (lagged)	0.0037**		0.0031*	
	(0.0017)		(0.0016)	
Macroprudential Policy Index (lagged)		0.0029		0.0021***
× SURPLUS		(0.0020)		(0.0006)
Macroprudential Policy Index (lagged)		0.0047**		0.0042***
× DEFICIT		(0.0022)		(0.0014)
# of Observations	588	588	420	420
# of Countries	42	42	42	42
Time Effects	YES	YES	YES	YES
Sargan Test	-	-	0.7549	0.5897
Arellano-Bond test	-	-	0.6289	0.4998
Number of Instruments	-	-	54	46
R-squared	0.1995	0.2003	-	-

Standard errors in brackets: *** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$.
We report p-values for Sargan and Arellano-Bond tests.