Volume 30, Issue 2

The Effects of Inflation Targeting on the Current Account: An Empirical Examination

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Abstract

Empirical studies have found that inflation targeting leads to a fall in real interest rate, macroeconomic uncertainty, exchange rate volatility, and output volatility. Economic theory suggests that those elements should lead to a rise in investment and a fall in private savings. However, Rose (2007) reports very little association between current account and inflation targeting. This paper examines the effect of inflation targeting on current account. The results show that, consistent with economic theory, inflation targeting does negatively affect current account once global shocks have been properly accounted for. This evidence implies that exchange rate and balance of payment crises should not lead inflation targeting per se.

1. Introduction

Empirical studies have found that adoption of inflation targeting reduces the domestic real interest rate, inflation rate, output growth volatility, and exchange rate volatility. Economic theory suggests that, these "stylized facts" should worsen current account through reduction of savings and increases in investment. However, Rose (2007) reports very little empirical association between inflation targeting and current account. His study found no significant difference between targeters and non targeters. A casual look at the current account data for targeters in Figure 1 indeed suggests an improvement in the current account for most targeters after the adoption of the inflation targeting regime. This issue is important as countries like Brazil, Thailand and South Korea did adopt inflation targeting after a balance of payments crisis.

The goal of this article is to examine the effects of inflation targeting on the current account in more detail by accounting for global influences such as US growth rate, global real interest rate and oil price. Setting a simple regression model, I use a 35-year unbalanced panel dataset for 19 targeters to estimate targeting effects on the current account. The estimates show that after accounting for time effects and global shocks, inflation targeting does have a negative effect on current account, a result consistent with macroeconomic theory. The magnitude of that effect is somewhere between 1.0 and 1.8 percent of GDP.

This paper is ordered as follows. Section 2 describes the empirical stylized facts of inflation targeting and their effects on the current account. Section 3 presents the empirical model and data. Section 4 reports the estimates. The final section concludes.

2. Stylized Facts of Inflation Targeting and Their Effects on the Current Account

Adoption of inflation targeting affects both nominal and real macro variables of the targeting country. Studies by Neumann and von Hagen (2002), Corbo and Schmidt-Hebbel (2001), Calvo and Reinhart (2002), Schmidt-Hebbel and Werner (2002), Levin, Natalucci and Piger (2004), Petursson (2005), and Geraats, Eijffinger and van der Cruijsen (2006) show that inflation targeting policy brings stable and lower inflation, stable and lower interest rates, a stable output growth rate, an anchored long-term expected inflation rate, and lower exchange rate volatility[1].

The above changes in macro variables, in turn, affect the current account. According to Calderon, Chong and Loayza (2002), the output growth rate is negatively related to the current account because it primarily spurs future investment. The lower real interest rate positively affects consumption and investment, thereby negatively affecting the current account. According to Obstfeld and Rogoff (1996), the two important effects on consumption after a real interest rate decrease are the substitution effect and the difference between the wealth and income effects. The effects on consumption are positive if the substitution effect dominates.

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[1] However, Levin, Natalucci and Piger (2004) and Gürkaynak, Levin and Swanson (2006) do not find supporting evidence on reduction in output growth volatility between targeters and non targeters. In addition, according to Ball and Sheridan (2005), inflation targeting does not improve economic performance. However, they do report that inflation, short-term interest, and annual growth rates are less volatile for the targeting period.

A stable and low inflation may also decrease macroeconomic uncertainty leading to a lower level of precautionary savings and an increase in investment. This leads to a fall in the current account as well. According to Ghosh and Ostry (1997), macroeconomic uncertainty dampens investment and encourages precautionary savings, improving the current account. Finally, according to Leiderman, Maino, and Parrado (2006), the low exchange rate volatility shows that central banks are sacrificing competitiveness, implying a negative effect on the current account. Overall, the empirical results of inflation targeting, when combined with current account theory imply that the effect of inflation targeting on the current account should be negative.

3. Model and Data

Following Chinn and Prasad's (2003) specification, I use the following empirical model:

$$CA_{it} = \theta_0 + \theta_1 ITD_{it} + \theta_2 T_t + \sum_j \theta_j K_{jt} + e_{it}$$

where CA_{it} is the current account-GDP ratio for country i at time t; ITD_{it} is an inflation targeting dummy: Country i in targeting period t is one, otherwise it is zero; T_t represents time effects at time t; K_{jt} is the set of worldwide shocks at time t, for all $j=3, 4, 5$. The worldwide shocks are global real interest rate, oil price and US growth rate (Table I). When global shocks (time effects) are used, $\theta_2= 0$ ($\theta_j=0$, for all $j=3, 4, 5$). For the period 1970-2004, annual data was obtained from IFS[2].

Unlike Rose (2007), I include global shocks to isolate their effects on the current account because they affect both targeters and non targeters. The regressions are estimated using annual (short-term) and 5-year averaged (medium-term) data under three specifications: 1) pooled OLS ($\theta_2= 0$ and $\theta_j=0$, for all $j=3, 4, 5$); 2) pooled OLS with time effects; and 3) pooled OLS with global shocks. In these regressions, 2) and 3) are compared to obtain the effects of inflation targeting on the current account. If θ_1 is negative, the net impact of inflation targeting on the current account is negative.

ITD is constructed as follows: if the inflation targeting regime begins in the first (second) semester, *ITD* =1 begins in the current (next) year. New Zealand introduced this regime in March, 1990. Chile followed in September, 1990; Canada in February, 1991; Israel in January, 1992; the United Kingdom in October, 1992; Sweden in January, 1993; Australia in April, 1993; Peru in January, 1994; Korea in April, 1998; Mexico in January, 1999; Colombia in September, 1999; Switzerland in January, 2000; Thailand in May, 2000; Iceland in March, 2001; Hungary in January, 2001; and, Norway in March, 2001[3]. For the medium-term, if *ITD* average is greater than or equal to 0.5, *ITD* =1, otherwise =0.

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[2] International Financial Statistics.
[3] Currently, there are twenty one targeters; however, The Czech Republic (January 1998) is not included due the lack of data and Philippines (January 2002) is the last targeter. Spain and Finland adopted inflation targeting in 1994, but both countries joined the European Central Bank in 1999.

4. Empirical Results

In Table II, for the pooled OLS, in the short-term, the coefficient of *ITD* is positive and significant at 5 percent which explains the improvement in the current account across regimes. In the medium-term, that coefficient is positive but not significant. However, using time effects in the pooled OLS regression, in the short- and medium-term, the *ITD* coefficient is negative, 1.5 and 1.8 percent of GDP, respectively. These values are significant at 5 percent in the short-term and 10 percent in the medium-term. When global shocks are accounted for in the pooled OLS regressions, the *ITD* coefficients are again negative in both cases and significant at 10 percent. The coefficients are 1.2 and 1.8 percent of GDP, respectively, similar to those with time effects.

Finally, the model is estimated using robust regression and median regression estimation. The above techniques are robust to influences of outliers. The estimates are in Table III. The point estimates of the *ITD* coefficient are still negative in all the cases. However, the coefficients are less precisely estimated. As a result, only the median regressions with time effects coefficients are significant. Overall, the evidence of negative effects of the inflation targeting on the current account is robust across different estimations techniques after allowing for global influences.

5. Conclusion

Macroeconomic theory suggests inflation targeting policy should worsen the current account balance. Rose (2007) shows that there is very little difference between current account averages of targeting and non-targeting countries. Using an unbalanced panel data set for 19 targeting countries, I show that the current account balances of the countries do worsen after adoption of inflation targeting after accounting for global shocks. This result is supportive of the theoretical predictions. The policy implication of these findings is that balance of payments crises should not lead to the adoption of an inflation targeting regime.

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Table I
Worldwide Variables

Global Real Interest Rate:	The GDP weighted average of the real interest rate for the US, Italy, France, Japan and Germany.
Oil Price:	The annual average Crude Oil Price, dollar per barrel adjusted for inflation to January 2007 dollars.
US Growth:	The first difference of the log of US real GDP

Source: International Financial Statistics

Table II
Effect of Inflation Targeting on Current Account - OLS Regression

	1) *Pooled OLS*	2) *With Time Effects*	3) *Including Global Shocks*
Dependent variable: current account/GDP			
Short-term	0.014**	-0.015**	-0.012*
	(0.004)	(0.007)	(0.007)
R-squared	0.02	0.12	0.05
Medium-term	0.014	-0.018*	-0.018*
	(0.009)	(0.010)	(0.010)
R-squared	0.03	0.12	0.08

Note: White- heteroskedasticity consistent standard errors in parentheses.
** Significant at 5 percent.
*Significant at 10 percent.

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Table III
**Effect of Inflation Targeting on Current Account - Robust Regression**

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	With Time Effects	*Including Global Shocks*
Dependent variable: current account/GDP		
A-) Iteratively Re-Weighted Least Squares		
Short-term	-0.010	-0.008
	(0.006)	(0.006)
R-squared	0.09	0.03
Medium-term	-0.013	-0.014
	(0.012)	(0.012)
R-squared	0.06	0.04
B-) Median Regression		
Short-term	-0.015***	-0.006
	(0.005)	(0.007)
Pseudo R-squared	0.06	0.02
Medium-term	-0.018*	-0.018
	(0.010)	(0.013)
Pseudo R-squared	0.05	0.06

Note: Standard errors in parentheses.
*** Significant at 1 percent.
* Significant at 10 percent.

Figure 1: Current Account/GDP - Mean across Non-Targeting and Targeting Periods
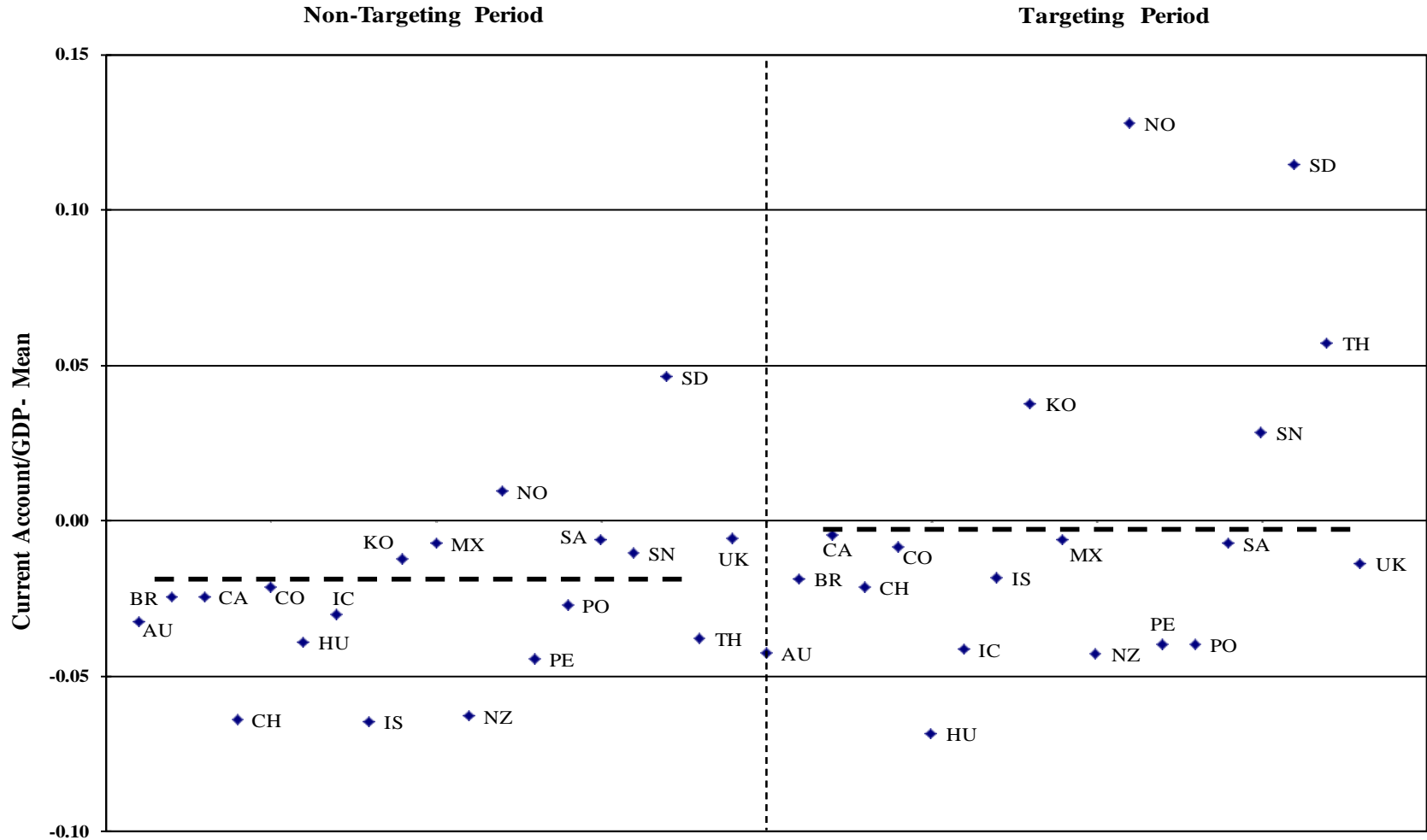
Note: AU: Australia; BR: Brazil; CA: Canada; CH: Chile; CO: Colombia: HU: Hungary; IC: Iceland; IS: Israel; KO: Korea; MX: Mexico; NO: Norway; NZ: New Zealand; PE: Peru; PO: Poland; SA: South Africa; SN: Sweden; SD: Switzerland; TH: Thailand; UK: United Kingdom. For each regime, the dash-line indicates the average of current account means. For non-targeting and targeting regimes, the averages are -0.0243 and -0.0005, respectively. Those averages are statistically different at 10 percent (P-value = 0.0905)