Fiscal Policy and the Current Account: Are Microstates Different?

Yehenew Endegnanew, Charles Amo-Yartey and Therese Turner-Jones
Western Hemisphere Department
International Monetary Fund

Presentation Outline

- Introduction: the motivation for the research
- Characteristics of microstates
- Review of theoretical and empirical literature
- Empirical analysis: panel regression and panel vector autoregression
- Summary of results

Introduction

- This paper examines the empirical link between fiscal policy and the current account focusing on microstates.
- The extent to which fiscal adjustment can affect the current account remains controversial with two competing views.
- The traditional view argues that changes in fiscal policy are associated with changes in the current account.
- The traditional view is challenged by the Ricardian equivalence principle.
- Microstates have some characteristics that could affect the theoretical relationship between fiscal policy and the CA.
- Most studies focus on advanced and large emerging markets. Our focus on microstates allows us to draw conclusions specific to these countries.

Characteristics of Microstates

- We define microstates as countries with an average population of less than 2 million between 1970 and 2009.
- Small size of domestic market: Microstates are usually at a disadvantage as a location for large scale industries.
- Microstates have narrow range of exports and export markets. They are very vulnerable to external shocks.
- High level of openness to trade and high transport cost. The proportion of imports in domestic consumption is high.
- Microstates can suffer from lumpiness of investment due to small size.
- Supplying public goods may be more expensive in microstates. The public sector as a share of GDP tends to be bigger.

Theoretical Literature

- Fiscal policy and the CA are related through the identity:

$$CA = (S_{pr} - I_{pr}) + (S_g - I_g)$$

Where CA is the current account, $S_g - I_g$ is the fiscal balance

- Theoretically, fiscal policy could affect the current account:
  - Direct impact through demand: through changes in government consumption or investment demand.
  - Through the real exchange rate: by altering relative price
  - Interest rates and risk premia impacts.

Empirical Literature

- Empirical works can be grouped into two according to the fiscal variable of interest and the methodologies used.
  - Panel regression approach to study the effect of mainly fiscal balance on the current account
  - Panel VAR approach to study the effects of mainly government spending on the current account
- VAR studies have focused on advanced countries: they have found a small negative impact of expansion on the CA.
- Abbas et al. (2011) found that a percentage point improvement in the fiscal balance is associated with a CA improvement of between 0.2 and 0.3.

The Model

- The benchmark specification assumes a fixed effects model of the form:

$$Y_{i,t} = (\propto + \mu_i) + \beta X_{i,t} + \epsilon_{i,t}$$

Where Y is current account to GDP ratio and X is a vector of explanatory variables including

- Cyclically-adjusted primary balance (CAPB) to potential GDP ratio
- Lagged log of real GDP per capita
- Trade openness
- Lagged net foreign assets to GDP ratio
- Volatility of terms of trade
- Lagged log of real effective exchange rate

The Data

- Data sources are the World Economic Outlook, the World Development Indicators, Lane and Milesi-Ferretti and INS.
- Annual data from 1970-2009 of 155 countries of which 42 are microstates
- CAPB to potential GDP is computed as:

$$\mathbf{CAPB = R\,(Y^{p}/Y) - G}$$

Where R is revenue and grants, G is government spending less interest payment, Yp is the potential output and Y is the actual output

Results

Table 1: Panel Regressions – Global Sample (Dependent Variable - CA to GDP ratio)

	Fixed Effects	Fixed Time Effects	Pooled OLS	Excluding Oil Exporting Countries	Dynamic Panel
Cyclically adjusted primary balance	0.346***	0.322***	0.367***	0.289***	0.297***
	10.61	9.76	11.41	8.63	8.57
Lagged log per capita income	-0.481	0.836	0.628***	-0.666	-1.713*
	(-1.00)	1.37	2.72	(-1.35)	(-1.93)
Trade Openness	-0.0128*	-0.00328	-0.0154***	-0.00684	-0.0488***
	(-1.87)	(-0.46)	(-3.13)	(-0.98)	(-4.92)
Lagged net foreign assets to GDP ratio	0.0221***	0.0263***	0.0256***	0.0203***	-0.0120***
	7.81	9.32	10.87	7.07	(-2.59)
Volatility of Terms of Trade	0.00152	0.00207	0.00116	0.00108	-0.00123
	0.65	0.89	0.5	0.47	(-0.13)
Lagged log of real effective exchange rate	-1.237***	-1.279***	-1.032**	-0.968**	-1.569**
	(-2.79)	(-2.71)	(-2.41)	(-2.00)	(-2.23)
Lagged current Account to GDP					0.324***
					14.21
Constant	8.599*	-4.562	-1.586	8.219*	22.85***
	1.87	(-0.87)	(-0.53)	1.75	2.7
N	2370	2370	2370	2211	2131

t statistics in parentheses

* p<0.1, ** p<0.05, *** p<0.01

Results

Table 2: Panel Regressions –Microstates (Dependent Variable- CA to GDP ratio)

	Fixed Effects	Fixed Time Effects	Pooled OLS	Excluding Oil Exporters	Dynamic Panel GMM
Cyclically adjusted primary balance	0.394***	0.443***	0.416***	0.313***	0.361***
	5.25	5.71	5.63	4.02	5.49
Lagged log per capita income	-1.043	2.305	1.398*	-1.607	-4.807***
	(-0.76)	1.2	1.73	(-0.92)	(-3.17)
Trade Openness	-0.0537***	-0.0519***	-0.0599***	-0.0394**	-0.0335*
	(-2.84)	(-2.74)	(-3.70)	(-1.97)	(-1.88)
Lagged net foreign assets to GDP ratio	0.0363***	0.0381***	0.0421***	0.0322***	0.00589
	4.57	4.53	7.59	3.87	0.78
Volatility of Terms of Trade	-0.000823	-0.0014	-0.000528	-0.00081	-0.00163
	(-0.27)	(-0.46)	(-0.18)	(-0.27)	(-0.72)
Lagged log of real effective exchange rate	1.599	-1.896	1.733	1.828	3.105
	-0.58	(-0.63)	0.7	0.64	1.38
Lagged current Account to GDP					0.428***
					10.59
Constant	2.84	-7.807	-17.52	4.434	26.75
	0.14	(-0.37)	(-1.17)	0.19	1.43
N	510	510	510	472	444

t statistics in parentheses
* p<0.1, ** p<0.05, *** p<0.01

Results

Selected Papers	Sample and methodology	Fiscal variables studied	Results
This paper	155 countries, annual data, 1970-2009, panel regression	1 percent of GDP increase in the CAPB to potential GDP ratio	CA balance improves by 0.35 percent of GDP in the full sample and 0.4 percent of GDP in microstates
Abbas et al (2011)	124 countries, annual data, 1985-2007, panel regression	1 percent of GDP increase in the CAPB to potential GDP ratio	CA balance improves by 0.3 percent of GDP
Chinn and Prasad (2000)	18 advanced and 71 developing countries, annual data, 1971-1995, panel regression	1 percent of GDP increase in government budget balance	CA balance improves by 0.2-0.39 percent of GDP

Results

Selected Papers	Sample and methodology	Fiscal variables studied	Results
This paper	155 countries, annual data, 1970-2009, panel regression	1 percent of GDP increase in the CAPB to potential GDP ratio	CA balance improves by 0.35 percent of GDP in the full sample and 0.4 percent of GDP in microstates
Abbas et al (2011)	124 countries, annual data, 1985-2007, panel regression	1 percent of GDP increase in the CAPB to potential GDP ratio	CA balance improves by 0.3 percent of GDP
Chinn and Prasad (2000)	18 advanced and 71 developing countries, annual data, 1971-1995, panel regression	1 percent of GDP increase in government budget balance	CA balance improves by 0.2-0.39 percent of GDP

Panel VAR Model

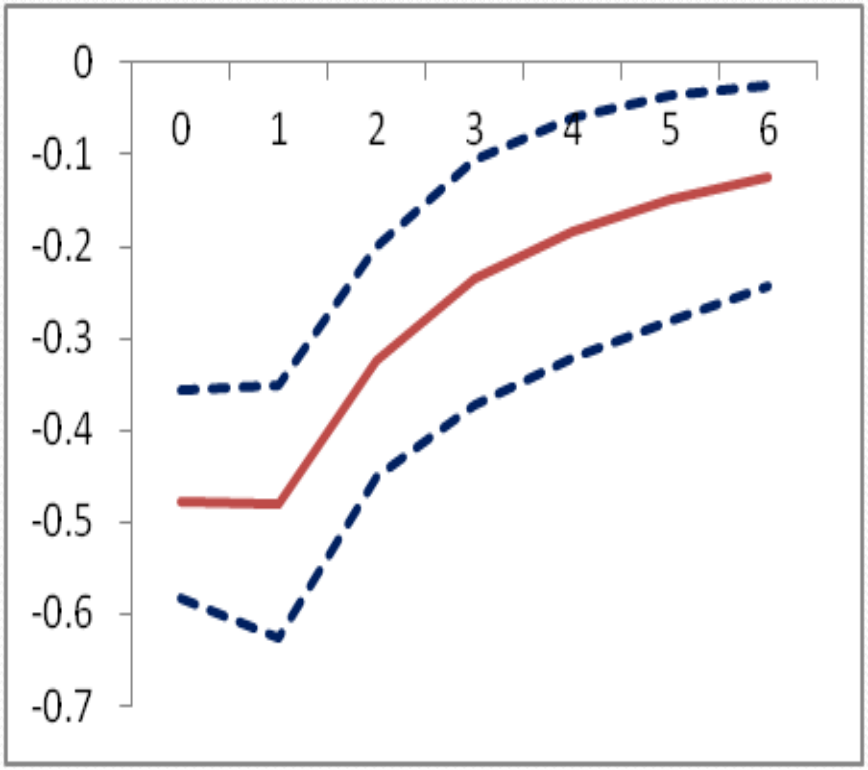
- The panel vector autoregression model used is:

$$Z_{i,t}=a_o + a_1 Z_{i,t-1} + f_i + e_i$$

- Where Z_t is a four-variable vector of log of real government consumption (g), log of real GDP (y), current account to GDP ratio (ca) and log real effective exchange rate (rer).
- The identification used is a recursive approach where variables are ordered as g; y; ca and rer .
- The identification assumes that government consumption does not react contemporaneously to shocks of other variables in the model.

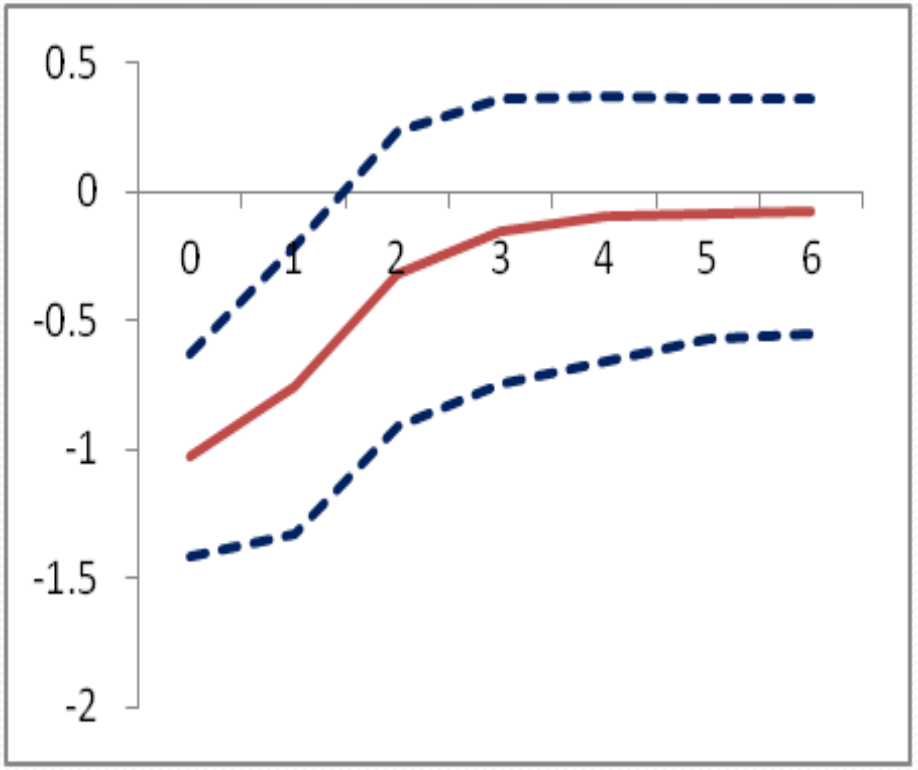
Panel VAR Results—Impulse Responses

Response of CA to 1 s.d shocks in gcon-Full Sample



CA worsens by 0.21 percent of GDP

Response of the CA to 1 s.d shock in gcon—Microstates



CA worsens by 0.42 percent of GDP

Panel VAR Results

Selected Papers	Sample and methodology	Fiscal variables studied	Results
This paper	155 countries, annual data, 1970-2009, panel VAR	1 percent of GDP increase in government consumption	CA balance worsens by 0.21 percent of GDP in the full sample and 0.42 percent of GDP in microstates on impact
Abbas et al. (2011)	124 countries, annual data, 1985-2007, panel VAR	1 percent of GDP increase in government consumption	The CA balance worsens by 0.3 percent of GDP on impact
Beetsma et al. (2007)	14 EU countries, annual data, panel VAR	1 percent of GDP increase in government consumption	The trade balance deteriorates by 0.5 percent of GDP on impact

Conclusion

- The results suggest that there is a relationship between fiscal policy and the current account in microstates
- The link in microstates seems not through real exchange rate but rather through the impact of fiscal policy on imports.
- A shock to government consumption has a larger and short-lived impact on microstates than in the global sample.
- The weak relative price effects make the effect of fiscal adjustment on current account much more difficult in microstates.