Fiscal Rules and the

Cyclicality of Government Expenditures

by

Markus Brueckner
(National University of Singapore)

Presented in Tokyo
June 12, 2014
Fiscal Credibility--Fiscal Policy Rules and Fiscal Councils

- Great Recession, fiscal stimulus actively considered as a policy tool

- *Discretionary fiscal stimulus being provided by G-20 countries is sizeable, but falls short of the 2 percent of aggregate GDP in 2009 and 2010 recommended by the Fund...* (IMF Staff Position Note, Meeting of the Ministers and Central Bank Governors, March 13–14, 2009 London, U.K.)

- Conventional monetary policy reached its limit (zero lower bound)

Modern macro models with intertemporal consumption smoothing -- and where fiscal multipliers are positive (i.e. dy/dg>0) -- suggest that government spending should be counter-cyclical

Example, Andres, Domenech, and Fatas (2008, JEDC)

- DSGE model: show that in the presence of nominal rigidities and costs of capital adjustment

  - ➢ government spending (in particular, increases in g/y) reduce the volatility of output in the presence of productivity shocks

  - ➢ in order to also generate a negative effect of government size on private consumption volatility, rule-of-thumb consumers are needed

Normative view: if (large) positive fiscal multipliers exist, government spending should be countercyclical

Positive view: Is it really the case that government spending is countercyclical?

- Theory provides no clear answer
  - political economy considerations (principal-agent issues)
  - financing constraints (developing countries)

Remainder of this Presentation...

Do we observe counter-cyclicality in the data?

--> What role do fiscal rules play in shaping the cyclicality of government expenditures?

Fatas and Mihov (2006, JPub)

- Data from 48 U.S. states to investigate how budget rules affect fiscal policy outcomes

- Key findings are that
    (1) budgetary restrictions lead to lower policy volatility
    but
    (2) fiscal restrictions reduce the responsiveness of fiscal policy to output shocks

Analysis shows that the first effect dominates, and that restrictions on fiscal policy lead to less volatility in output

Canova and Pappa (2006, JPub)

- Also examine fiscal cyclicality for 48 U.S. states and how this cyclicality is affected by fiscal rules

- Key finding is that

    ➢ The second moments of macroeconomic variables in states with different fiscal constraints are *statistically* similar.

Conclude that creative budget accounting may be an explanation for their finding

(See also Milesi Ferretti, 2001; and Van Hagen, 1991, substitution of nonrestricted for restricted debt instruments)

Manassa (2006, IMF WP 06/27)

- Examine fiscal cyclicality for a panel of 49 emerging economies during the period 1970-2004.

- Key findings are that

  - Fiscal rules enhance, rather than weaken, countercyclical policy

  - No independent effects of fiscal rules once proxies for institutional quality (e.g. bureaucratic quality, rule of law, corruption) are controlled for
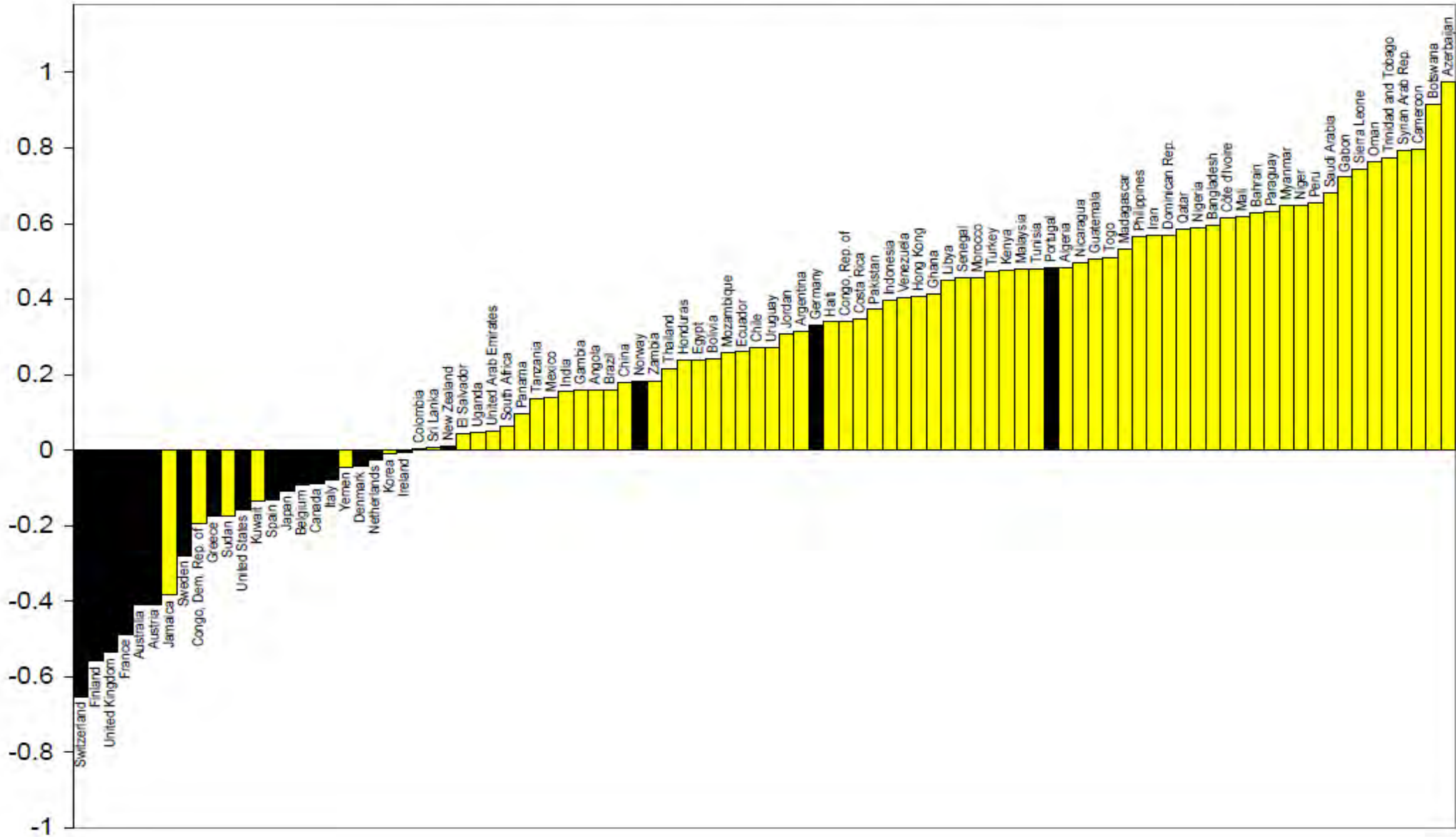
Frankel, Vegh, and Vuletin (2013, JDE)

Examine fiscal cyclicality for a panel of 94 countries.

Key findings are that:

- industrial countries have tended to pursue countercyclical fiscal policies

- emerging and developing countries have tended to pursue procyclical fiscal policy

- over the past decade, government spending has turned countercyclical in about a third of the developing countries
    - trace this shift to (improvements) in the quality of institutions

Figure 2. Country correlations between the cyclical components of the real government expenditure and real GDP. 1960-1999
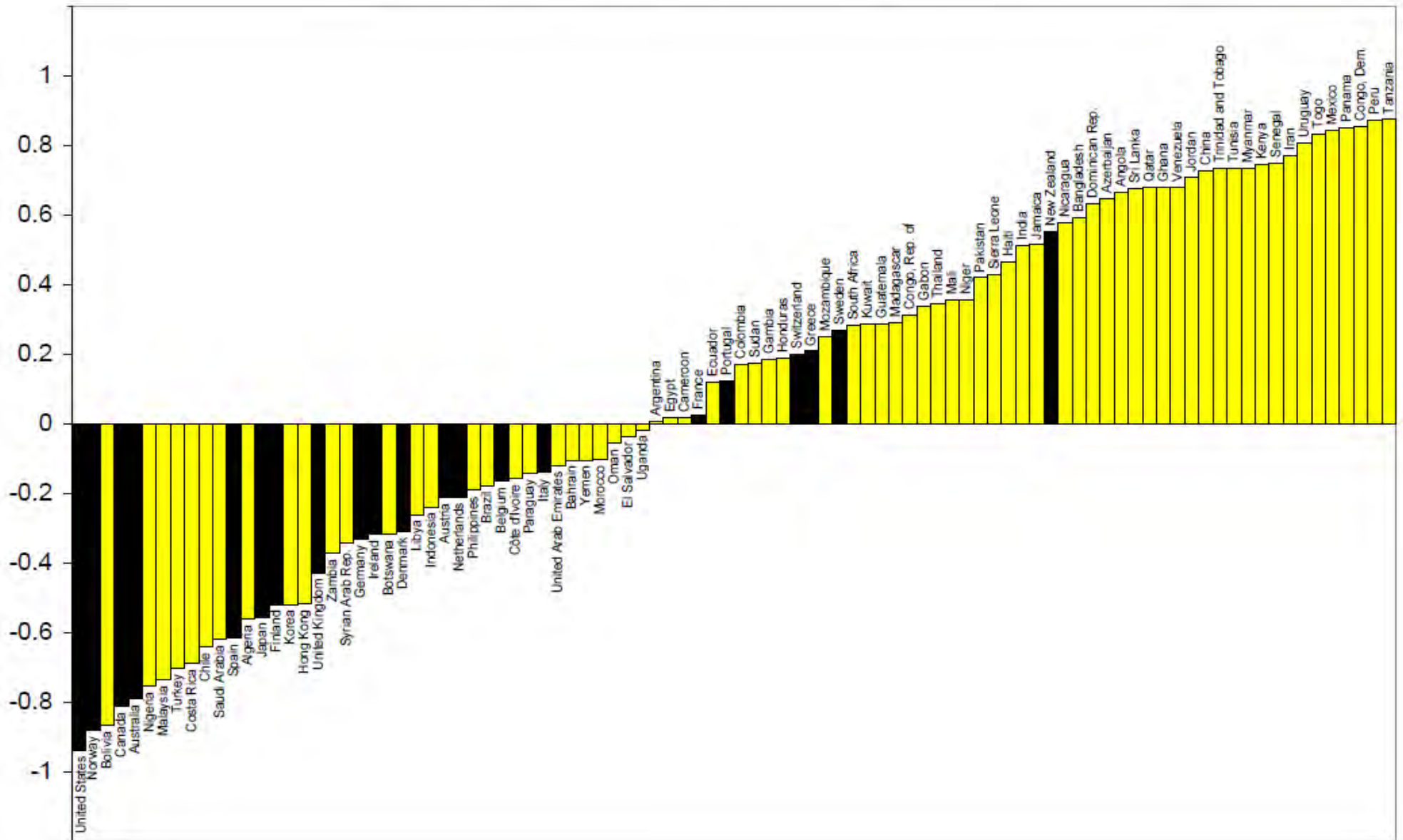

Notes: Dark bars are OECD countries and light ones are non-OECD countries. The cyclical components have been estimated using the Hodrick-Prescott Filter. A positive (negative) correlation indicates procyclical (countercyclical) fiscal policy. Real government expenditure is defined as central government expenditure and net lending deflated by the GDP deflator. See Appendix 2 for correlation value for each country.
Source: World Economic Outlook and International Financial Statistics (IMF).

Source: Frankel et al. (2013, JDE)

Figure 3. Country correlations between the cyclical components of the real government expenditure and real GDP, 2000-2009

Notes: Dark bars are OECD countries and light ones are non-OECD countries. The cyclical components have been estimated using the Hodrick-Prescott Filter. A positive (negative) correlation indicates procyclical (countercyclical) fiscal policy. Real government expenditure is defined as central government expenditure and net lending deflated by the GDP deflator. See Appendix 2 for correlation value for each country.
Source: World Economic Outlook and International Financial Statistics (IMF).

Source: Frankel et al. (2013, JDE)

Figure 4. Country correlations between the cyclical components
of the real government expenditure and real GDP. 1960-1999 vs. 2000-2009
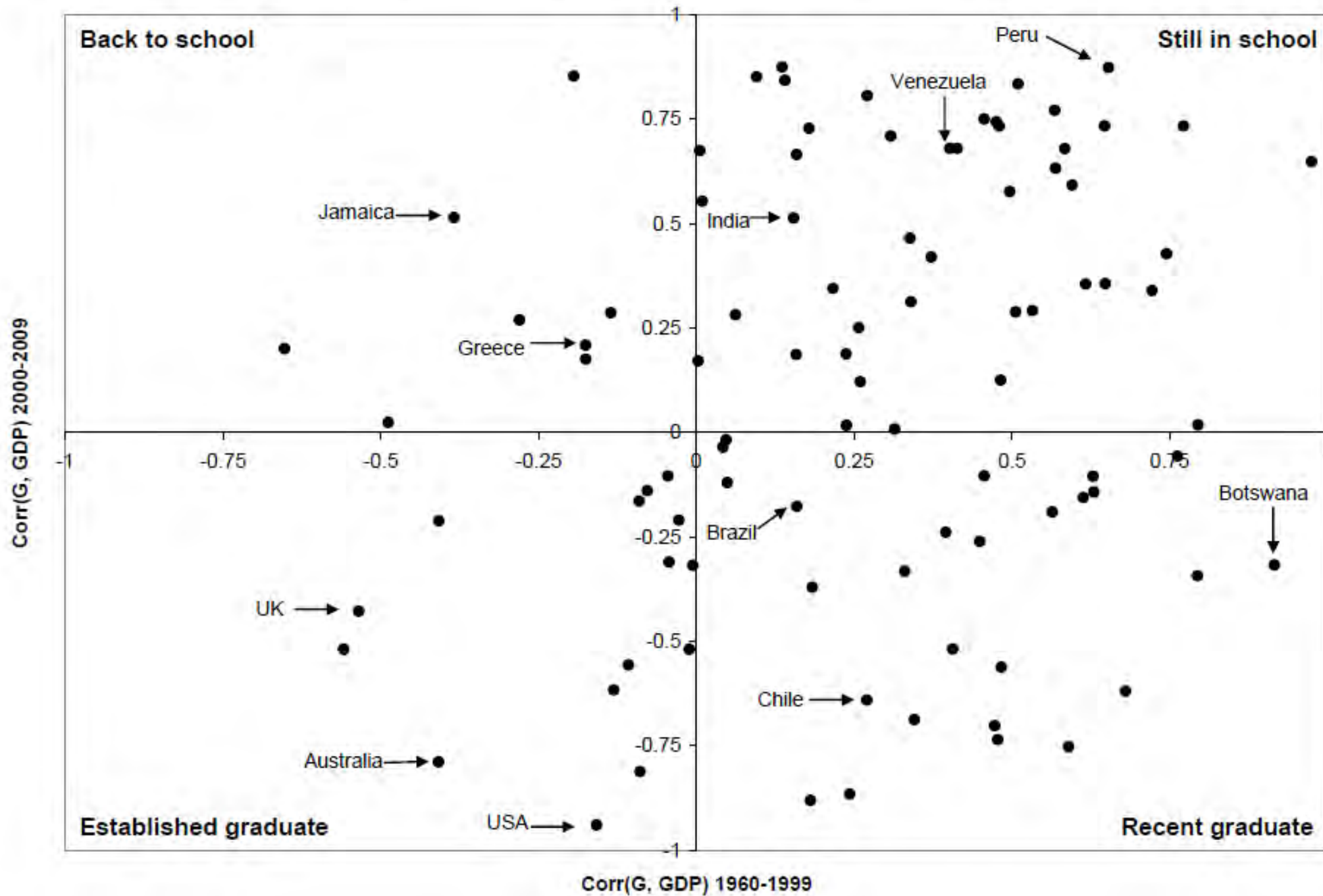
Brueckner, Gradstein, and Chong (2012, JPub)

Examine response of government expenditures to GDP p.c. using instrumental variables estimation

Instrument is change in international oil price times countries' average net-export GDP share of oil (terms-of-trade effects arising from price changes)

For a panel of 142 countries during the period 1970-2007 period:

- (average) elasticity response of government spending to GDP of around 0.25-0.50

Government Spending Cyclicality and Fiscal Rules

Obtain data on fiscal rules from IMF's Fiscal Rules Dataset
  ➢ http://www.imf.org/external/datamapper/fiscalrules/map/map.htm

For a panel of 66 countries spanning the period 1985-2010, estimate

$$\Delta \ln \left(Gov \ p.c. \right)_{c,t} = \alpha \Delta \ln \left(GDP \ p.c. \right)_{c,t} + \beta \Delta \left[\ln \left(GDP \ p.c. \right)_{c,t} * Rules_{c,t} \right] + Controls_{c,t} + \epsilon_{c,t}$$

Controls include country and year fixed effects as well as linear term of fiscal rules

Instrument for GDP p.c. growth is same as in Brueckner et al. (2012, JPub)

List of Countries

Argentina	Estonia	Mauritius
Armenia	Finland	Mexico
Australia	France	Mongolia
Austria	Gabon	Netherlands
Benin	Germany	New Zealand
Brazil	Greece	Niger
Bulgaria	Guinea Bissau	Nigeria
Burkina Faso	Hungary	Norway
Cameroon	Iceland	Pakistan
Canada	India	Panama
Central African Republic	Indonesia	Peru
Chad	Ireland	Poland
Chile	Israel	Portugal
Colombia	Italy	Romania
Costa Rica	Jamaica	Russia
Cote d'Ivoire	Japan	Senegal
Croatia	Kenya	Singapore
Cyprus	Latvia	Slovenia
Czech Republic	Lithuania	Spain
Denmark	Malaysia	Togo
Ecuador	Mali	United Kingdom
Equatorial Guinea	Malta	United States

Government Spending Cyclicality and Fiscal Rules

Dependent Variable: Government Expenditures p.c. Growth

	(1)	(2)	(3)	(4)	(5)
GDP p.c. Growth	0.46**	0.61**	0.45**	0.46**	0.62**
	(0.20)	(0.30)	(0.20)	(0.20)	(0.30)
GDP p.c. Growth* All Fiscal Rules		-0.23*			-0.24**
		(0.12)			(0.12)
GDP p.c. Growth* Dummy Exp. Rule			-0.19*		
			(0.11)		
GDP p.c. Growth* Asia				-0.11	-0.16
				(0.21)	(0.30)
GDP p.c. Growth* Asia*Dummy Exp. Rule					0.11
					(0.13)
All Fiscal Rules		-0.002			-0.002
		(0.008)			(0.007)
Dummy Exp. Rule					
Kleibergen Paap F-stat	9.68	11.20	10.05	10.05	11.53
Country FE	Yes	Yes	Yes	Yes	Yes
Year FE	Yes	Yes	Yes	Yes	Yes
Countries	66	66	66	66	66
Observations	1643	1643	1643	1643	1643

Note: The method of estimation is two-stage least squares. The instrumental variable is the change in the international oil price times countries' average net-export GDP shares of oil. Huber robust standard errors (shown in parentheses) are clustered at the country level. *All Fiscal Rules* is the sum of 1(Expenditure Rule) + 1(Revenue Rule) + 1(Budget Balance Rule) +1(Debt Rule). *Significantly different from zero at the 10 percent significance level, ** 5 percent significance level, *** 1 percent significance level.

Conclusion

- Fiscal rules tend to be associated with less pro-cyclical government spending

- No evidence that cyclicality of government spending is significantly different for the Asia and Pacific region