

# Do More Open Economies Have Bigger Governments? Not Necessarily

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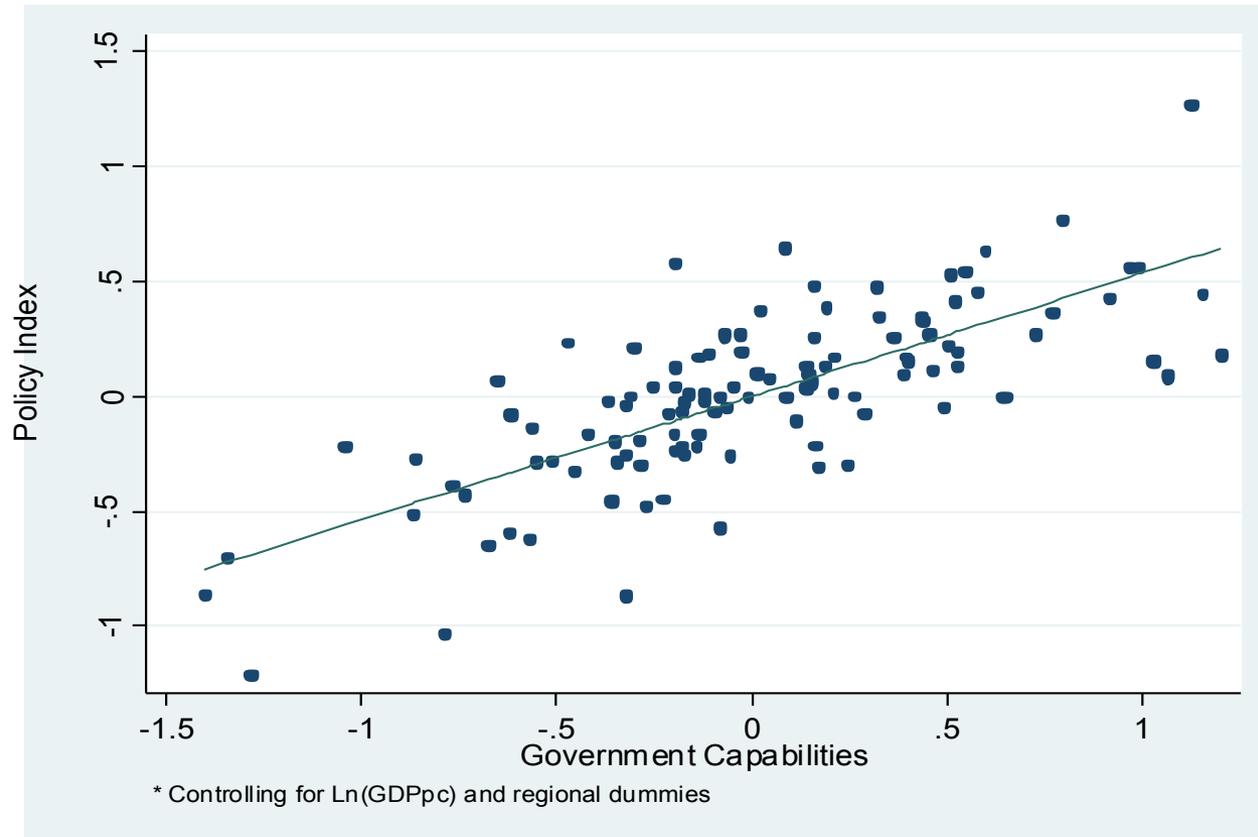
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# Motivation

- Government capabilities seem to affect the quality of the policies countries can pursue
  - higher institutional capabilities are correlated with policies that are:
    - More stable
    - More adaptable
    - More coherent
    - Better enforced, and
    - Tend to favor broader sectors of the population
    - Productivity enhancing
  - IDB 2005, Stein and Tommasi 2007, Scartascini, Stein, and Tommasi 2009, Scartascini and Stein 2010, and Ardanaz, Scartascini, and Tommasi 2011

# Motivation



Could these differences be also reflected in the ability of countries to react to shocks? Could we see those changes reflected in countries fiscal decisions?

# Summary

- Long standing result in the literature that higher trade openness leads to larger governments
  - Compensation hypothesis
- However, are there any conditions under which at least some countries can do better than expanding the size of the government to cope with external volatility?
- We show that:
  - the relationship between exposure to international trade and government expenditures holds for low capability countries, but
  - this relationship tends to disappear for countries with access to more efficient policy alternatives.
- Therefore, the compensation hypothesis is conditional on the quality of the government.

# Globalization and public policies

- How does globalization influence public policies?
  - Long standing debate starting with Cameron (1978) and popularized by Rodrik (1998)
- Basically, higher exposure to external risk is correlated with a larger size of the government
- Mechanism?
  - Compensation hypothesis

# Compensation Hypothesis

- Governments attempt to compensate for the risks of increased exposure to international trade
  - They introduce a variety of government programs and policies, which have budgetary implications
  - As such, it results in a positive correlation between trade openness and the size of the public sector

# Rodrik's Framework

- Postcard version:
- The government is the “safe” sector of the economy
- It can mitigate the shocks from international markets by taking command of a larger share of the economy's resources.
- Assuming that a representative household owns streams of income from all sectors, a higher share of (permanent) government consumption can provide some ex ante insurance to external risk.

# Caveats and arguments in the literature

- Compensation hypothesis mediated by third variable: country size
  - Direct link is robust to the inclusion of country size
- Democracy as intermediary
- Reverse compensation hypothesis: once country has large welfare state, trade liberalization becomes more likely
- Financial vs. Trade openness
- Microfoundations of demand and supply of “compensation”
- By and large, the compensation hypothesis has been quite accepted within the literature in international political economy, and the **potential positive correlation between openness and government spending has become a staple consideration in exercises exploring the determinants of the size of government.**

## Is this the best a country can do?

- Is this the best a country can do?
- Could at least some countries insulate themselves from external risk without having to resort to enlarging the public sector?

# Policy alternatives

- Operate at different stages:
  - Some equivalent to allowing part of the adjustment to take place after the shock
  - Some more efficient (cheaper) ways to insure ex ante
- Operate at different levels:
  - Softening the macroeconomic implication of those shocks
  - Permitting more efficient and less costly microeconomic adjustment
  - Providing more efficient and less costly social protection
- Different policies are more demanding than others in terms of government capabilities
  - not equally available to all polities.

# Policy alternatives to cope with external risk

- Various policy domains.
- Policy A exists that provides better “insurance” (ex-ante or ex-post) than policy G
- Policy A is not necessarily very “expensive”
- But it requires some capabilities for its effective implementation
- What countries can pick within that menu depends on capabilities
- Papers with evidence that
  - A is better
  - A related to intermediate outcomes as lower output volatility
  - Countries with stronger capabilities do more A

# Exchange rate policy

- Flexible exchange rates might provide better insulation to trade shocks than fixed exchange rates
  - Broda and Tille (2003)
- Countries with weaker institutions tend to choose fixed exchange rate regimes as way of buying their scarce credibility
  - Canavan and Tommasi (1997), Herrendorf (1999), and Keefer and Stasavage (2003)
- ER regimes do not map easily into budget implications
  - Non-budgetary insulation mechanism

# Fiscal Policies

- Well-designed fiscal rules may help alleviate effects of external volatility
- Countries with higher capabilities, might be able
  - To implement countercyclical macroeconomic policies
    - ✓ Calderon et al (2012)
  - Better respond to commodity price shocks!
    - ✓ Cespedes and Velasco (2013)
  - To design better fiscal frameworks
    - ✓ Filc and Scartascini (2012)
  - To reduce wasteful government consumption and rent-seeking activities that have been associated to procyclical policy bias
    - ✓ Alesina et al., (2008); Ilzetzki (2007)
- Does not require more spending, but spending at the right time and place

# Depth of Financial Markets

- Higher financial development
  - Can help to reduce consumption volatility
    - Andrews and Rees (2009)
  - Allows firms to better manage macroeconomic volatility
    - Cavallo et al. (2009).
- Higher government capacities facilitate the development of deeper financial markets
  - Haber et al. (2008), Becerra et al. (2012)

# Sector Specific Policies

- Effects of ToT shocks operate differently across sectors of the economy
- There are a number of horizontal and sectorial policies that have an impact on how well sectors in particular and the economy as a whole respond to various shocks.
  - Market flexibility, and ease of firm entry can dampen the impact of negative terms of trade shocks on aggregate output and magnify the positive ones.
    - Loayza and Raddatz (2007)
- Such industrial, financial, labor-market policies are also likely to demand important government and bureaucratic capabilities
  - Scartascini and Tommasi (2010), Cornick (2013)

# Other Sector Policies

- Insulate the economies from the exposure to global market volatility through *membership in international trade organizations* (WTO, preferential trading arrangements)
  - ✓ Mansfield et al (2008)
- Effective participation tends to be quite demanding in terms of having a capable bureaucracy
- You have to negotiate some concessions in the right nodes (ex post insurance)
  - ✓ Bouzas (2004), Pasadilla (2005)
- Not much “spending”

# Mitigating the Social Effects of Economic Shocks

- All of the above: mitigate impact from shock to economic consequences
- After all that: still social consequences
- Various policies to deal with that
- Will cost some money
- But more effective governments: higher “bang for the buck” (mitigate more efficiently)
  - Targeted social spending during economic adjustment
    - ✓ Niles (2001)
  - Higher State capacity, more rapid advance in achieving development policy goals in social sector areas.
    - ✓ Cingolani and Thomsson (2013)
  - Health and education spending are more effective in countries with better policymaking capabilities
    - ✓ Scartascini et al (2008)

## In sum

- The various policies that we discussed are quite demanding in terms of technical and political capabilities.
- A country with strong state capabilities might be able to draw from the full menu and pick and successfully implement those policies that best suit the nature of the shocks the country faces as well as its economic and social fabric.
- Countries with lesser capabilities might have to deal with the risks induced by volatility in more blunt manners.
  - we need to look into the governmental capabilities of each case.

# State Capacity (1)

- The issue of government capabilities or, more broadly, of state capacity
  - is a complex one
  - it has given rise to important analytical, measurement, and evaluation efforts, as well as lively methodological debates
- It has many dimensions, such as
  - coercive or military capacity
  - fiscal or extractive capacity
  - administrative or implementation capacity
  - legal capacity
- The emphasis on each of its dimensions depends on the issue at hand



# State Capacity (2)

- The type of economic and social policy implementation capabilities we are referring to, closer to the notion of administrative or implementation capacity.
  - Most widely referred to, rooted in Weberian tradition (modern state and existence of a professional and insulated bureaucracy)
  - The bureaucratic/administrative dimension of state capacity emphasized by classic authors such as Huntington (1968) and Skocpol (1979).
  - Weaver and Rockman (1993) conceive state capacities as policymaking capabilities, including the capacity to effectively implement policies.

# State Capacity (3)

- The notion of capabilities we have in mind also relates to the idea of the “transformative” capacities of states: “the ability of a state to adapt to external shocks and pressures by generating ever-new means of governing the process of industrial change” (Weiss 1998).
  - Aspect also present in Evans (1989) and (1995), embedded autonomy: a combination of administrative insulation power and a certain level of state embeddedness in the productive structure.
- According to Rueschmeyer and Evans (1995), the effectiveness of state intervention in the economy depends upon a capable bureaucracy and good coordination and coherence among state organizations.

# Where does State Capacity come from?

- Complex question that has also received substantial attention
- Cingolani (2013): review of studies on the determinants of state capacity, from the historical accounts of state formation processes and its impact on subsequent types of administrative infrastructure, to the more recent emphasis on the incentives to invest in state capacity.
- A common theme among these various arguments and strands is that capacity is a **multidimensional object that accumulates slowly over time, as a function of various investments.**
- For our purposes: exogenous and pre-existent

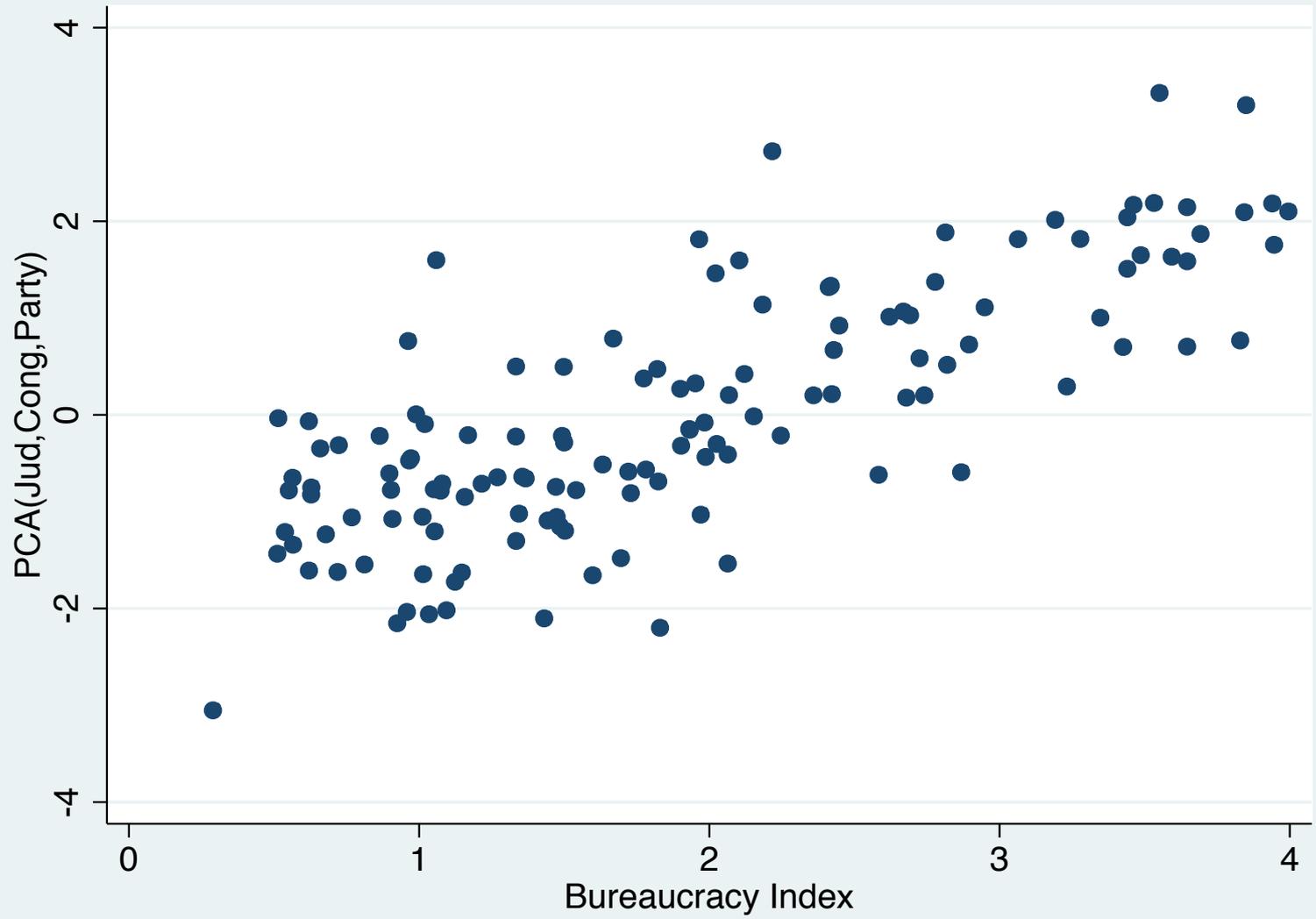
# Measures of State Capacity

- Quite varied
- Some of them aiming at capturing state capacity in a broad generic way,
- Others
  - acknowledge the existence of several aspects/ dimensions
  - try to measure each of them
- Among those
  - attempting to measure bureaucratic / administrative / implementation capacity
  - with large coverage in terms of countries and years
  - For this study we rely on the indicator of *quality of the bureaucracy* from the International Country Risk Guide (ICRG), available for most countries and years in this analysis



# Bureaucratic Quality

- As bad as any other
- Widely used
- Definition emphasizes some “intertemporal” aspects
- It has been used to measure state capacity
  - In articles particularly interested in administrative features of the State
    - ✓ Cingolani et al. 2013, Van de Walle 2005, Hanson and Sigman 2013
  - In studies such as this one that attempt to capture how government capabilities affect the supply or demand of certain types of policies
    - ✓ Becerra et al., 2012
- Correlates well with other dimensions of state capabilities that have been shown to relate to higher quality of policymaking in smaller country samples (within Latin America)



# Empirical Analysis

# Interactions with Gov. Capabilities

- Openness\*capabilities

$$\log(g_j) = \beta_0 + \beta_1 open_j + [\beta_2 burquality_j + \beta_3 (open_j \times burquality_j)] + \gamma \mathbf{X}_j + \varepsilon_j$$

$$\frac{\partial \log(g_j)}{\partial \log(open_j)} = \beta_1 + \beta_3 burquality_j \quad (2)$$

- External risk\*capabilities

$$\log(g_j) = \beta_0 + \beta_1 open_j + \beta_2 TOTvolatility_j + \beta_3 (open_j \times TOTvolatility_j) + [\beta_4 burquality_j + \beta_5 (open_j \times burquality_j) + \beta_6 (TOTvolatility_j \times burquality_j) + \beta_7 (open_j \times TOTvolatility_j \times burquality_j)] + \gamma \mathbf{X}_j + \varepsilon_j$$

(3)

- Note: dependent variable average 2000-04; X's 1990-1999

## Interactions with Gov. Capabilities

- we also work with a **panel** for the period 1980-2004.
  - Data averaged in five-year sub-periods

$$\log(g_{jt}) = \alpha_0 + \alpha_1 \log(\text{open}_{jt-1}) + [\alpha_2(\text{burquality}_{jt-1}) + \alpha_3(\text{open}_{jt-1} \times \text{burquality}_{jt-1})] + \delta \mathbf{X}_{j\bar{t}} + \vartheta_j + \eta_t + \epsilon_{jt} \quad (4)$$

$$\log(g_{jt}) = \alpha_0 + \alpha_1 \log(\text{open}_{jt-1}) + \alpha_2(\text{TOTvolatility}_{jt-1}) + \alpha_3(\text{open}_{jt-1} \times \text{TOTvolatility}_{jt-1}) + [\alpha_4(\text{burquality}_{jt-1}) + \alpha_5(\text{open}_{jt-1} \times \text{burquality}_{jt-1}) + \alpha_6(\text{TOTvolatility}_j \times \text{burquality}_{jt-1}) + \alpha_7(\text{open}_{jt-1} \times \text{TOTvolatility}_j \times \text{burquality}_{jt-1})] + \delta \mathbf{X}_{j\bar{t}} + \vartheta_j + \eta_t + \epsilon_{jt} \quad (5)$$

# Results

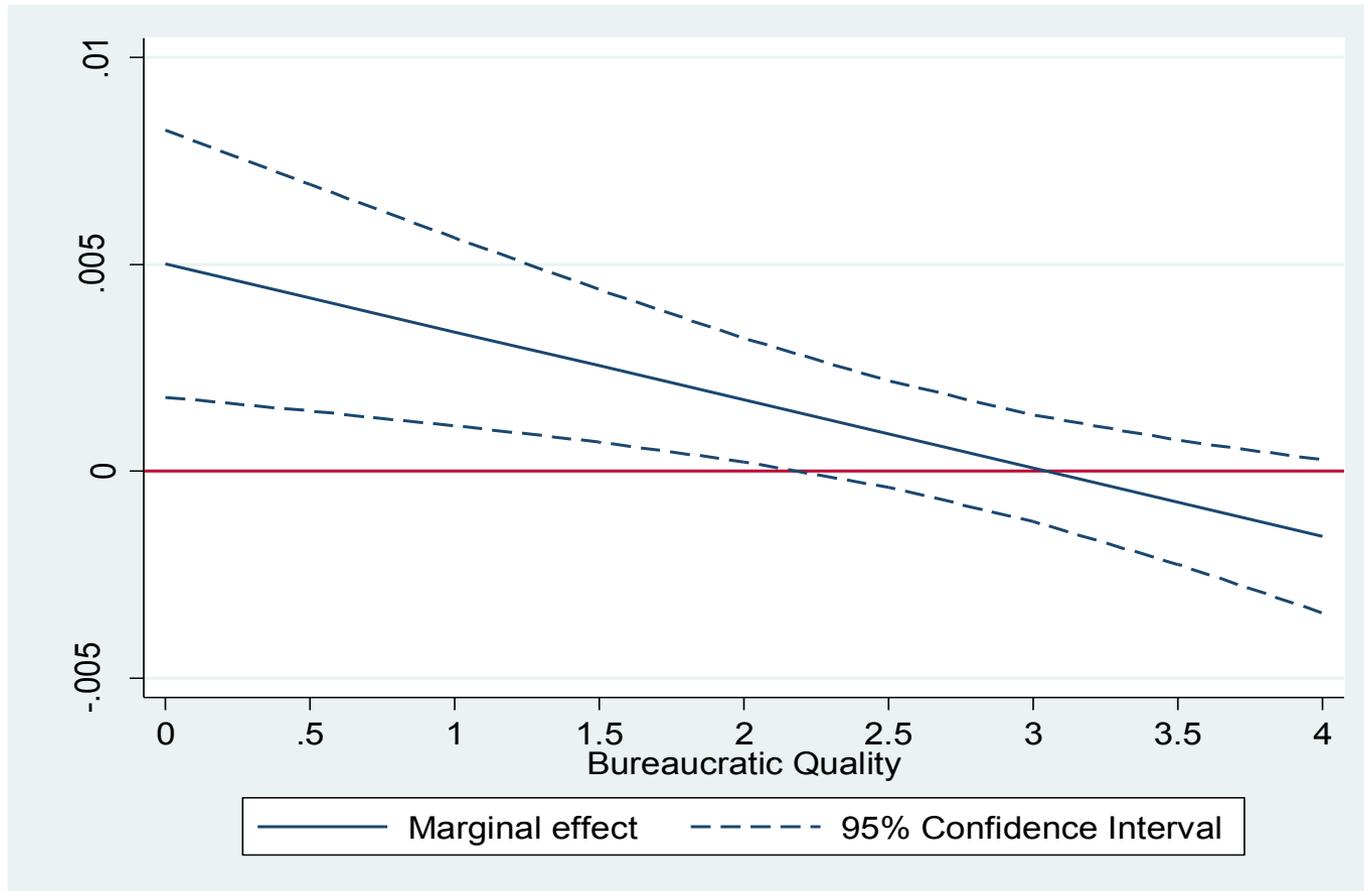
# Table 1. The Effects of Openness and External Risk on Government Size, accounting for Government Capabilities -- Cross Section

VARIABLES	Log Government Consumption (% of GDP) 2000-05			
	(1)	(2)	(3)	(4)
Openness (1990-99)	0.000 (0.001)	0.005*** (0.002)	-0.001 (0.001)	0.005 (0.004)
Bureaucratic Quality (1990-99)		0.174*** (0.058)		0.374*** (0.131)
Openness (1990-99) x Bureaucratic Quality (1990-99)		-0.002*** (0.001)		-0.002 (0.001)
ToT Volatility (1980-99)			-1.840* (1.095)	1.011 (2.331)
Openness (1990-99) x ToT Volatility (1980-99)			0.009 (0.013)	0.000 (0.034)
Bureaucratic Quality (1990-99) x ToT Volatility (1980-99)				-1.456 (1.245)
Openness (1990-99) x Bureaucratic Quality (1990-99) x ToT Volatility (1980-99)				-0.005 (0.017)
Observations	127	127	67	67
Adjusted R-squared	0.300	0.350	0.097	0.185

Note: Other controls not shown in the table: log GDP per capita (1990-99), log dependency ratio (1990-99), log urbanization rate (1990-99), and dummy variables for OECD, Sub-Saharan Africa, Latin America, East Asia, and Socialist countries. A constant term was included in all regressions.

Standard errors in parentheses. \*\*\* p<0.01, \*\* p<0.05, \* p<0.1

Figure 1. Marginal Effect of Trade Openness on Government Consumption along Bureaucratic Quality – Cross Section



Note: The graph corresponds to the regression in column 2 of Table 1.

## Table 2. The Effects of Openness and External Risk on Government Size, accounting for Government Capabilities – Panel Data

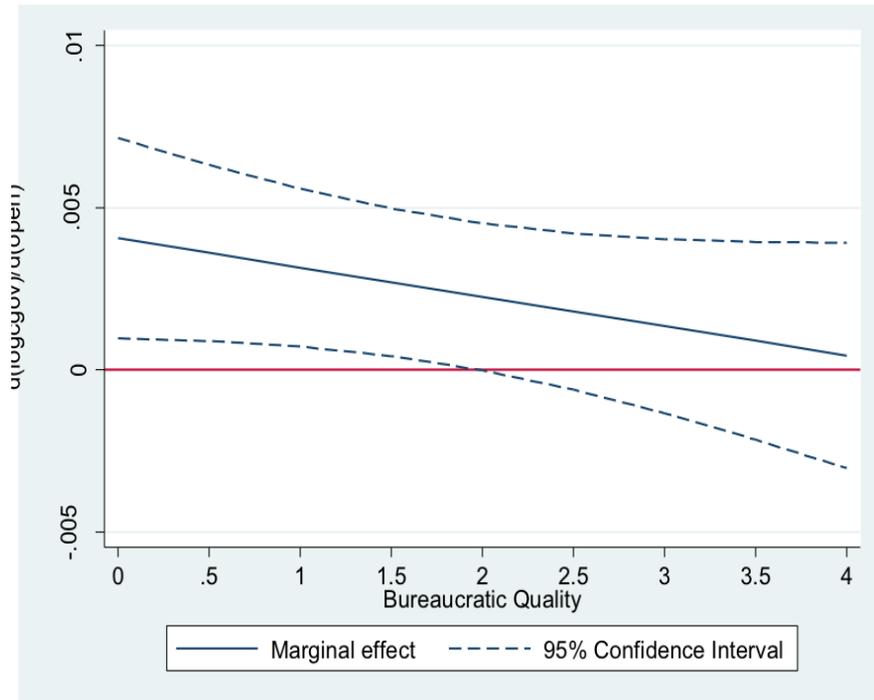
VARIABLES	Log Government Consumption (% of GDP)	
	(1)	(2)
Openness (t-1)	0.004** (0.002)	0.005** (0.002)
ToT Volatility (t-1)		0.093 (0.644)
Openness (t-1) x ToT Volatility (t-1)		-0.011 (0.011)
Bureaucratic Quality (t-1)	0.075 (0.046)	0.086 (0.061)
Openness (t-1) x Bureaucratic Quality (t-1)	-0.001 (0.001)	-0.001 (0.001)
Bureaucratic Quality (t-1) x ToT Volatility (t-1)		-0.193 (0.376)
Openness (t-1) x Bureaucratic Quality (t-1) x ToT Volatility (t-1)		0.005 (0.006)
Prob>F	0.000	0.000
Observations	246	246
Number of countries	67	67

Note: Regressions correspond to a Fixed Effects (within) model with time (period) dummies. Data are period averages for 1980-84, 1985-89, 1990-94, 1995-99, 2000-04 (except for the additional controls which belong to the beginning of each period).

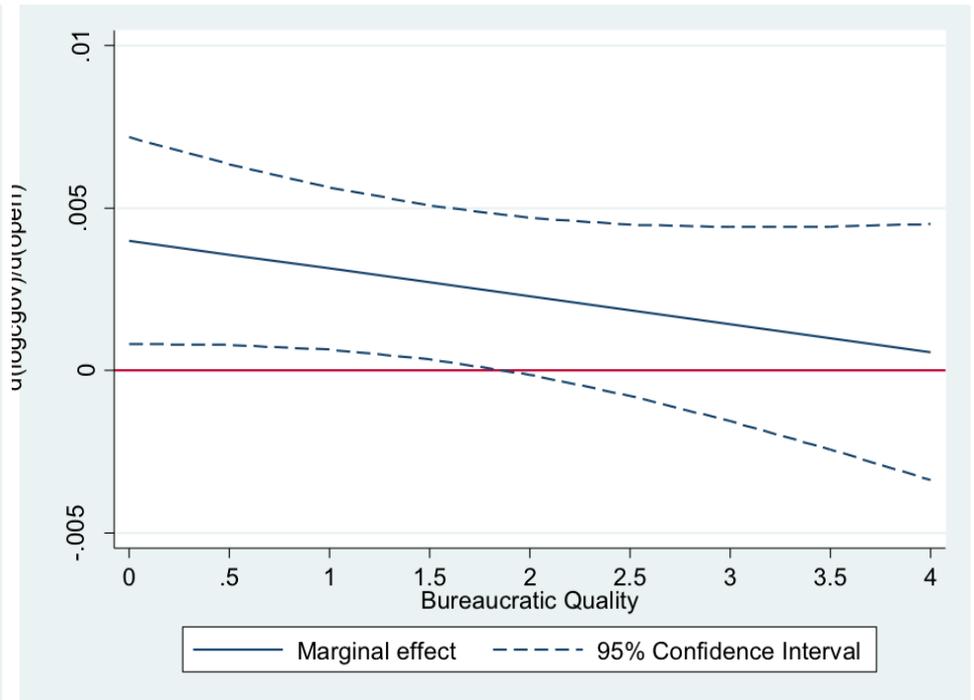
Additional controls: log GDP per capita, log urbanization rate, and log dependency ratio all at the beginning of each period, and OECD and socialism dummies. A constant term was included in all regressions.

Standard errors in parentheses. \*\*\* p<0.01, \*\* p<0.05, \* p<0.1

## Figure 3. Marginal Effect of Trade Openness on Government Consumption along Bureaucratic Quality – Panel Data



a. Column 1 of Table 2.



b. Column 2 of Table 2 (TOT Volatility 50<sup>th</sup> p.)

Similar to the cross-section, the marginal effect of openness on the share of government consumption in GDP is decreasing with bureaucratic quality and positive and significant (only) for countries with weak bureaucracies.

# Robustness checks

- So far we followed R98 for comparison
- Add expanded controls from later literature revisiting R98 and on size of government more generally
  - Country size
  - Democracy (GASTIL index of civil liberties)
  - Form of government
  - Electoral system
  - Average tariffs –not in the paper yet but see figure below
- Addressing potential reverse causality problems between bureaucratic quality and size of the government

## Table 3. Accounting for Government Capabilities and Terms of Trade Volatility – Expanded Set of Controls

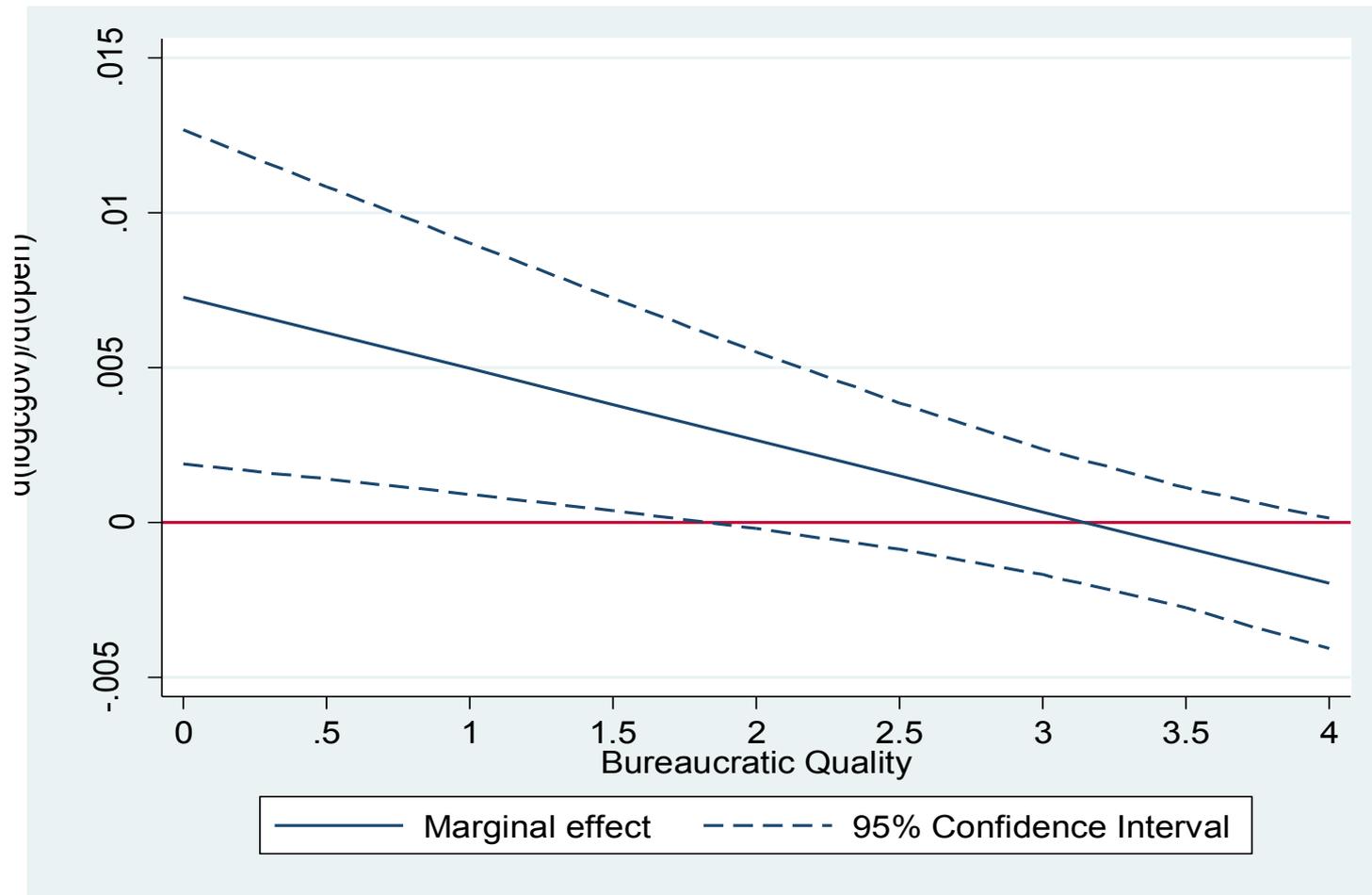
VARIABLES	Log Government Consumption (% of GDP) 2000-05	
	(1)	(2)
Openness (1990-99)	0.007*** (0.003)	0.023** (0.010)
Bureaucratic Quality (1990-99)	0.222*** (0.074)	0.309 (0.192)
Openness (1990-99) x Bureaucratic Quality (1990-99)	-0.002*** (0.001)	-0.005* (0.003)
ToT Volatility (1980-99)		2.066 (4.267)
Openness (1990-99) x ToT Volatility (1980-99)		-0.063 (0.069)
Bureaucratic Quality (1990-99) x ToT Volatility (1980-99)		1.736 (1.909)
Openness (1990-99) x Bureaucratic Quality (1990-99) x ToT Volatility (1980-99)		-0.025 (0.027)
Observations	77	38
Adjusted R-squared	0.517	0.449

Note: Other controls not shown in the table: log GDP per capita (1990-99), log dependency ratio (1990-99), log urbanization rate (1990-99), log population (00), *pres*, *maj*, *GASTIL*, and dummy variables for OECD, Sub-Saharan Africa, Latin America, East Asia, and Socialist countries. A constant term was included in all regressions.

Standard errors in parentheses. \*\*\* p<0.01, \*\* p<0.05, \* p<0.1

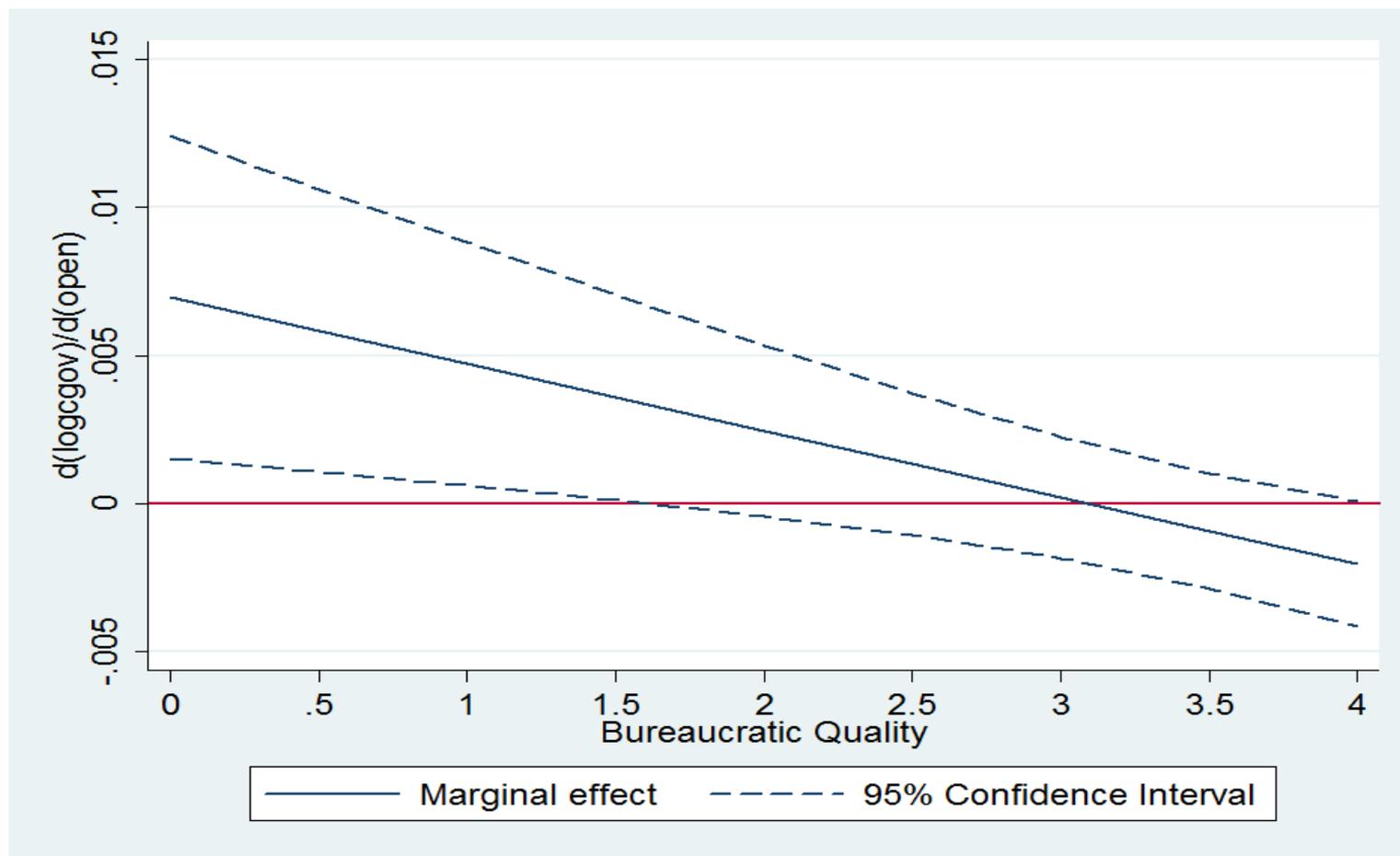


Figure 4. Marginal Effect of Trade Openness on Government Consumption along Bureaucratic Quality – Expanded Set of Controls



Note : The graph corresponds to the regression in column 1 of Table 3.

Figure 4bis. Adding average tariffs



Note : The graph corresponds to the regression in column 1 of Table 3.

# Instrumenting for Bureaucratic Quality

- To address potential reverse causality problems between bureaucratic quality and size of the government, we use an IV approach
- Given that bureaucratic capacity cannot be built overnight but it depends on a series of investments done by the polity overtime, it seems natural to use variables that proxy for the stability of the political system and democratic heritage
- Among those, the variables that have been used by other authors in regressions that have size of the government as a dependent variable seem to be the safer bet for complying with the exclusion restriction.
- Those used by Persson and Tabellini (2003):
  - Age of democracy (*age* & *age* squared)
  - Dummy for ex-colonies
- Rockey (2012) constructed two additional measures that help differentiate formal democracies from working democracies and are designed to capture key issues in both new and old democracies:
  - the date of first democratic elections (*me*)
  - the date of first democratic constitutions (*mc*).



Table 4. Instrumental Variables (Second Stage) – Fuller Estimator

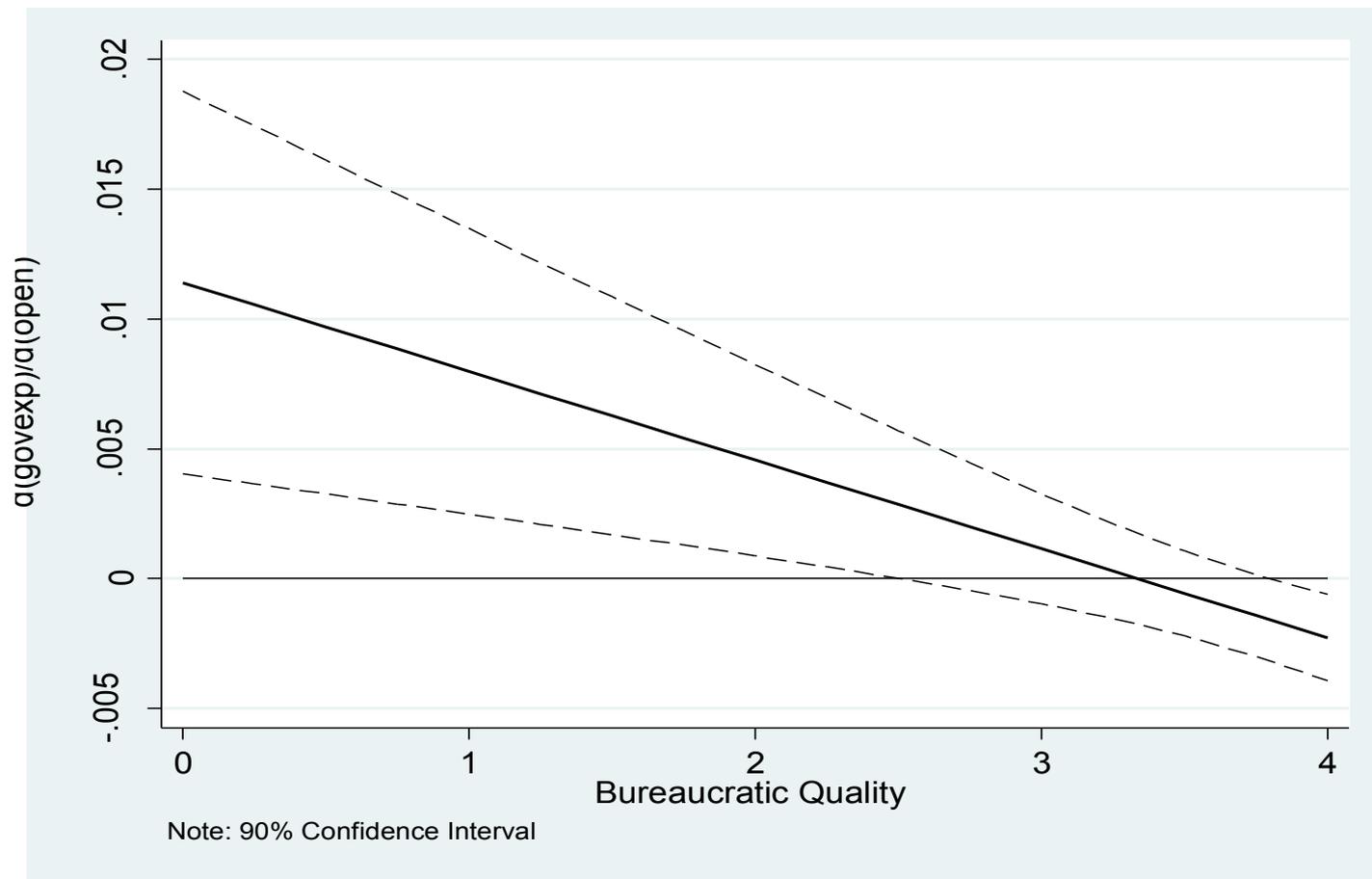
VARIABLES	Log Government Consumption (% of GDP) 2000-05			
	(1)	(2)	(3)	(4)
Openness (1990-99)	0.007* (0.004)	0.009*** (0.003)	0.007* (0.004)	0.011** (0.004)
Bureaucratic Quality (1990-99)	0.128 (0.110)	0.255** (0.102)	0.077 (0.115)	0.175 (0.113)
Openness (1990-99) x Bureaucratic Quality (1990-99)	-0.002*** (0.001)	-0.003*** (0.001)	-0.002** (0.001)	-0.003*** (0.001)
Expanded Controls	No	No	Yes	Yes
Excluded Instruments	me, me*openness	me, me*openness, me^2, me^2*openness	me, me*openness	me, me*openness, me^2, me^2*openness
Observations	86	86	77	77
Adjusted R-squared	0.472	0.510	0.468	0.457

Fuller(4) estimator.

Note: Other controls not shown in the table: log GDP per capita (1990-99), log dependency ratio (1990-99), log urbanization rate (1990-99) and dummy variables for OECD, Sub-Saharan Africa, Latin America, East Asia, and Socialist countries. Expanded set of controls: log population (00), *GASTIL*, *pres*, and *maj*. A constant term was included in all regressions.

Robust standard errors in parentheses. \*\*\* p<0.01, \*\* p<0.05, \* p<0.1

Figure 5. Marginal Effect of Trade Openness on Government Consumption along Bureaucratic Quality – Instrumental Variables



# Conclusions

- Exposure to external volatility affects the policies implemented by countries
- One way to reduce such exposure is by enlarging the size of the government (compensation hypothesis)
- However, some countries may have access to a more efficient set of policies
- As such, the correlation between exposure and size of the government may weaken for those countries

# Conclusions

- The paper main contributions are the following:
  1. It shows that the relationship between openness and size of the government is not as straightforward as previously considered. As such, it should be taken with caution
  2. It highlights once more the relevance of studying government capabilities. But plenty of work is left



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