


6-28-2013

Governance & Sustainability: Does Democracy Beggar thy Future?

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Recommended Citation

Peach, Nathanael D., "Governance & Sustainability: Does Democracy Beggar thy Future?" (2013). *School of Business*. Paper 1.
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Governance & Sustainability: Does Democracy Beggar thy Future?

WEAI Annual Conference, 2013

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Overview of the Presentation

- Motivate the study.
- Outline the methodology applied.
- Present selected findings.
- Conclusion.

Findings

- An increase in political stability:
 - Higher levels of natural resource depletion
 - Higher levels of adjusted net savings (ANS) i.e. contributes positively to sustainable growth
- An increase in democracy:
 - Lower levels of natural resource depletion
 - Impact on sustainability is conditional on the economic and political context

Literature

- Hartwick rule
 - Hartwick, 1977 & Solow, 1974, 1986
- Weak sustainability criterion
 - Brundtland, 1987
- Institutions, natural capital, & economic performance
 - Resource Curse (Sachs & Warner, 1995)
 - Democracy & Economic Performance (Collier & Hoeffler, 2009; Collier & Rohner, 2008)

Adjusted Net Savings

- Adjusted net savings
 - World Bank (2005, 2011).
- Current appraisals of macroeconomic sustainability
 - Arrow et al. (2004), Hamilton & Clemens (1999), World Bank (2005, 2011)

Theoretical Framework

$$1) V(t) = \int_t^{\infty} e^{-\delta(s-t)} U(C(s)) ds$$

Equivalently, $V(\mathbf{K}(t), \mathbf{R}(t))$

$$2) \text{ Weak Sustainability Criterion: } \frac{\partial V(t)}{\partial t} \geq 0$$

$$\sum_{i=1}^M \lambda_i(t) \dot{K}_i(t) + \sum_{j=1}^N \lambda_j(t) \dot{R}_j(t) \geq 0$$

$$VK_t - VR_t = S_t$$

Data

- World Development Indicators
 - $ANS = \text{Gross National Savings} - \text{Consumption of Fixed Capital} + \text{Expenditures on Education} - \text{Resource Depletion} - \text{Environmental Damages}$
- World Governance Indicators
 - Political Stability and Absence of Violence/Terrorism
 - Voice and Accountability

Econometric Methodology

- Panel Data Set
 - Time-Series: 1996 – 2011
 - Approx. 140- 158 nations
- Fixed Effects Estimator

$$ANS_{it} = \gamma_t + \alpha_0 + \alpha_1 K_{it} + \alpha_2 H_{it} + \alpha_3 Y_{it} + \sum_{f=1}^3 \alpha_f Res_{it} + \sum_{g=1}^2 \alpha_g Gov_{it} \\ + \sum_{h=1}^3 \alpha_h Interact_{it} + \sum_{j=1}^5 \alpha_j Region_{it} + \varepsilon_{it}$$

Dependent Variable: Adjusted Net Savings

	(1)		(2)		(3)	
C	-394.15***	(67.84)	-430.83***	(69.51)	-472.40***	(67.28)
K	-0.49***	(0.07)	-0.46***	(0.07)	-0.46***	(0.07)
Educ	-0.43**	(0.21)	0.37***	(0.12)	0.39***	(0.12)
GDP	0.20***	(0.01)	0.18***	(0.01)	0.19***	(0.01)
Energy	-0.10***	(0.03)	-0.14***	(0.03)	-0.15***	(0.02)
Min	-1.01***	(0.28)	-1.01***	(0.28)	-1.02***	(0.28)
Forest	4.35	(3.32)	4.00	(3.34)	3.17	(3.36)
Educ * Voice	0.50***	(0.10)	-		-	
GDP * Voice	-		0.01	(0.00)	-	
Voice * Stable	-		-		101.95**	(48.65)
Stable	187.13***	(49.33)	171.07***	(49.99)	187.71***	(51.21)
Voice	-374.52***	(56.53)	-357.70***	(57.16)	-334.08***	(56.85)
MENA	-342.14***	(122.34)	-510.45***	(119.84)	-544.39***	(115.06)
South Asia	456.41***	(163.01)	470.84***	(164.12)	475.90***	(163.98)
SS Africa	165.97*	(93.49)	185.90**	(94.46)	179.61*	(94.42)
East Asia	1372.7***	(138.90)	1314.94***	(143.23)	1282.40***	(138.35)
E&C Europe	116.33	(93.36)	85.39	(93.90)	69.15	(93.58)
R^2	0.757		0.753		0.754	
N	142		142		142	
M^a	1,647		1,647		1,647	
$Sample^b$	1996 - 2011		1996 - 2011		1996 - 2011	

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Marginal Impacts

1. $\frac{\partial Y_{it}}{\partial Educ_{it}} > 0$ when $Voice_{it} > 0.86$
2. $\frac{\partial Y_{it}}{\partial Voice_{it}} > 0$ when $Educ_{it} > 750$
3. $\frac{\partial Y_{it}}{\partial Stable_{it}} > 0$ when $Voice_{it} > -1.85$
4. $\frac{\partial Y_{it}}{\partial Voice_{it}} < 0$ for all *Stable*

Conclusion

- Caveats
 - Data
 - Methodology
- The impact of democracy on sustainability is conditional on the economic and political context.
- An increase in democracy leads to lower levels of ANS except in relatively stable, high income nations, and/or nations with large levels of investment in human capital.