

ECON B225: ECONOMIC DEVELOPMENT

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Governance and Corruption

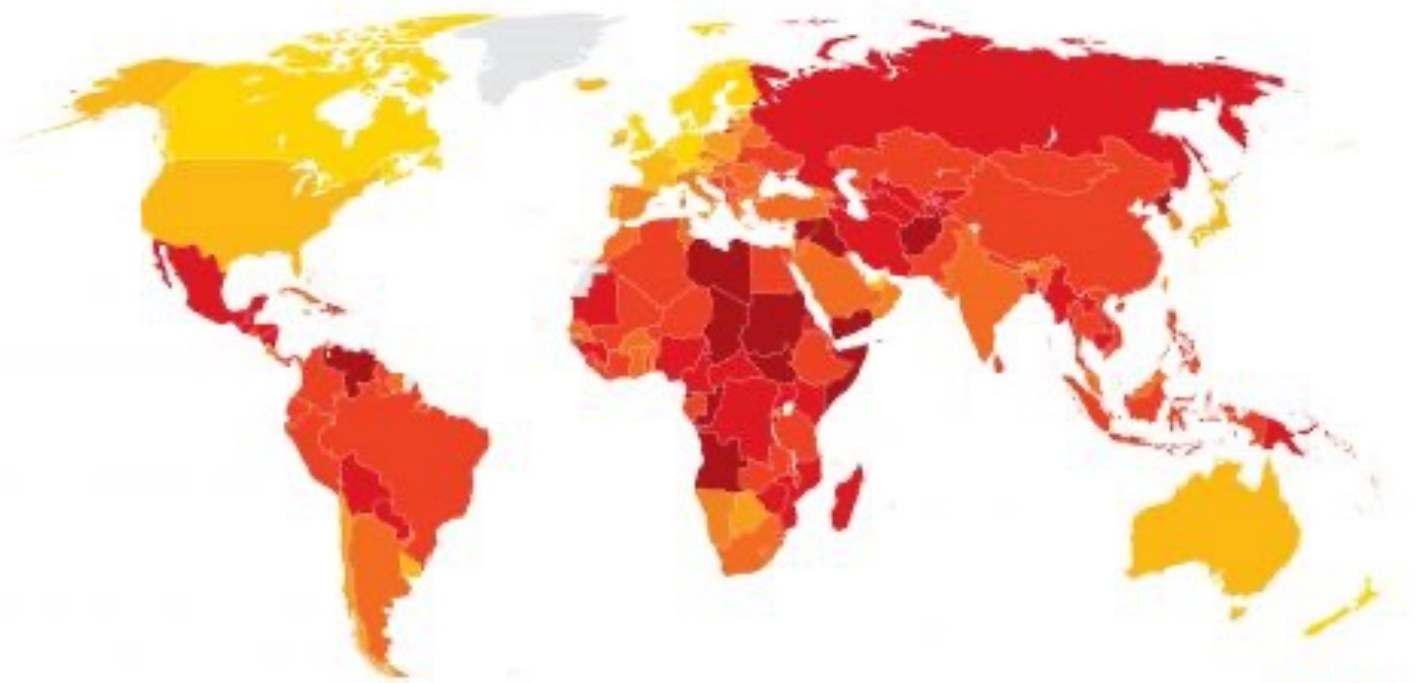
Transparency International Scores 2018

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CORRUPTION PERCEPTIONS INDEX 2018

The perceived levels of public sector corruption in 180 countries/territories around the world.



#cpi2018

www.transparency.org/cpi

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Source and Interactive Map: <https://www.transparency.org/cpi2018>

Corruption and Governance

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- **Why would corruption or governance affect growth?**
 - ▣ More Corruption and worse governance $\Rightarrow$ Higher risk and uncertainty $\Rightarrow$ Less private investment $\Rightarrow$ Less innovation $\Rightarrow$ Less TFP $\Rightarrow$ Lower growth
 - ▣ Alternative stories for corruption:
 - Bad governance/red tape is the problem and corruption is good because it allows a semi-efficient work around that problem
 - Good b/c extra source of competition

Mauro (1995)

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- **Research question:** Does corruption effect growth and if so how much?
 - ▣ Does corruption affect growth through lowering investment and if so how much?

Motivation

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- **Intuitive reasons to think corruption would matter a lot**
- **Anecdotal evidence suggests corruption related to underdevelopment**
 - ▣ A lot of poor countries have corruption problems and weak governance
 - ▣ But huge reverse causality potential here. Poverty and lack of resources likely have a causal effect on governance and corruption
- **Lack of empirical evidence on these relationships in 1995**

Previous Literature

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- **Literature goes back to the mid-1960s!**
 - Theoretical debate
 - No empirical research until Mauro
- **That's it. Pretty limited lit. review.**

Data

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- **Country-level, cross sectional dataset**
 - ▣ Every row in the dataset is a country
 - ▣ NOT a panel, so only one observation per country
- **Proxies for corruption and institutional efficiency from the Economist Intelligence Unit**
 - ▣ Each index is measured between 0 and 10
 - ▣ 9 Indices:
 - Political Change
 - Political Stability
 - Prob. Of Opp. Group Takeover
 - Stability of Labor
 - Relationship with Neighboring Countries
 - Terrorism
 - **Legal System, Judiciary** – “Efficiency and integrity of the legal environment as it affects business, particularly foreign firms”
 - **Bureaucracy and Red Tape** – “The regulatory environment foreign firms must face when seeking approvals and permits. The degree to which it represents an obstacle to business”
 - **Corruption** – “The degree to which business transactions involve corruption or questionable payments”

Data (cont.)

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□ Page 686:

- “On the basis of the definition of the variables, it seems that the judiciary system, red tape, and corruption indices represent closely related variables and that their simple average may be a reasonable proxy for what I will label bureaucratic efficiency. Part of the rationale for aggregating the indices into composite subindices is that there may be measurement error in each individual index, and averaging the individual indices may yield a better estimate of the determinants of investment and growth. Indeed, I consider the bureaucratic efficiency index to be a more precise measure of corruption than the corruption index on its own.”

Data (cont.)

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Table 1: Mauro Data Example

Country Name	Country ID	Legal System	Bur. and Red Tape	Corruption	“Bur. Efficiency”
Albania	001	2	3	2	7/3
Algeria	002	1	3	2	6/3
Angola	003	2	3	1	6/3

Independent
Variable of Interest



Bur. Eff. Index Categories

TABLE I
BUREAUCRATIC EFFICIENCY INDEX

1.5–4.5	4.5–5.5	5.5–6.5	6.5–7.5	7.5–9	9–10
Egypt	Algeria	Angola	Argentina	Austria	Australia
Ghana	Bangladesh	Dominican Rep.	Ivory Coast	Chile	Belgium
Haiti	Brazil	Ecuador	Kuwait	France	Canada
Indonesia	Colombia	Greece	Malaysia	Germany	Denmark
Iran	India	Iraq	Peru	Ireland	Finland
Liberia	Jamaica	Italy	South Africa	Israel	Japan
Nigeria	Kenya	Korea	Sri Lanka	Jordan	Hong Kong
Pakistan	Mexico	Morocco	Taiwan	Zimbabwe	Netherlands
Thailand	Philippines	Nicaragua	Uruguay		New Zealand
Zaire	Saudi Arabia	Panama			Norway
	Turkey	Portugal			Singapore
	Venezuela	Spain			Sweden
		Trinidad/Tobago			Switzerland
					United Kingdom
					United States

BE is the bureaucratic efficiency index, which I compute as the simple 1980–1983 average of three Business International indices: judiciary system, red tape, and corruption. A *high* value of the BE index means that the country's institutions are good.

Bivariate Correlations

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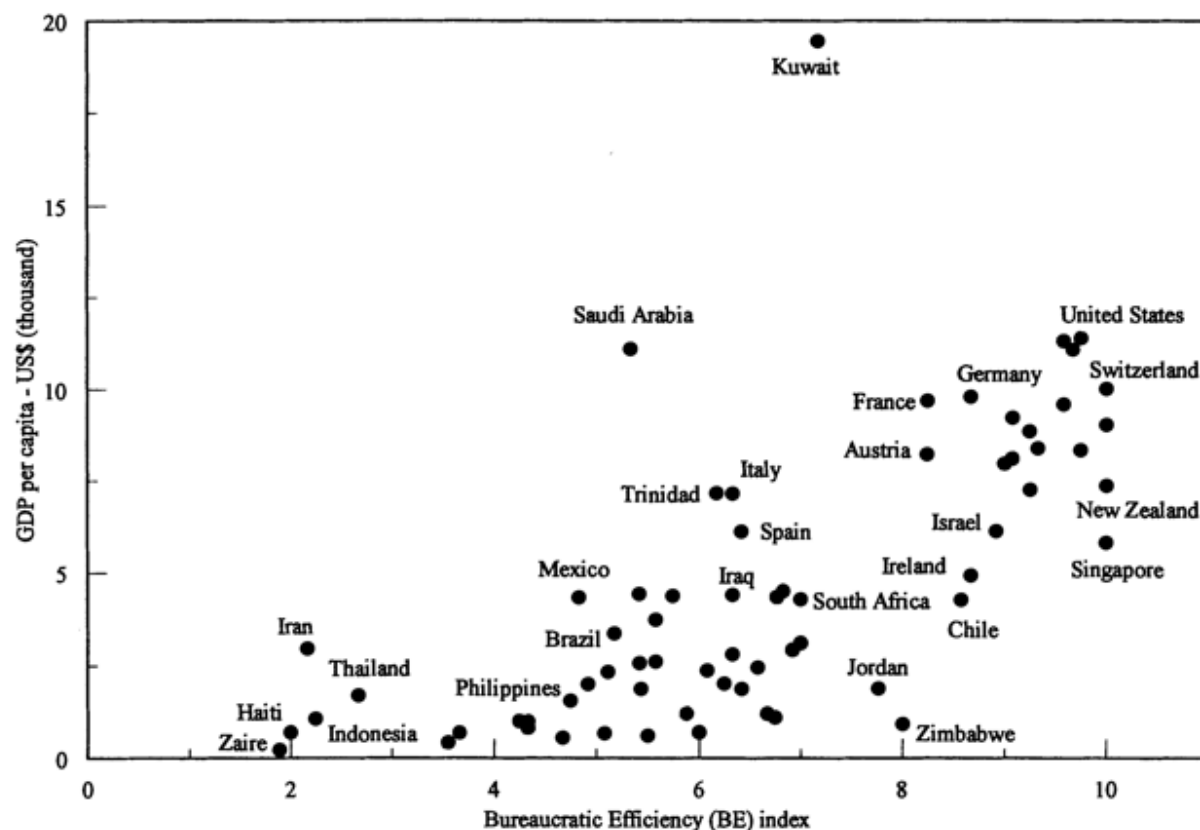


FIGURE I

Per Capita Income and Bureaucratic Efficiency

BE index is 1980–1983 average of BI indices of corruption, red tape, and judiciary.

Per capita GDP at PPP in 1980 is from Summers and Heston [1988].

67 countries, $r = 0.68$.

Bivariate Correlations

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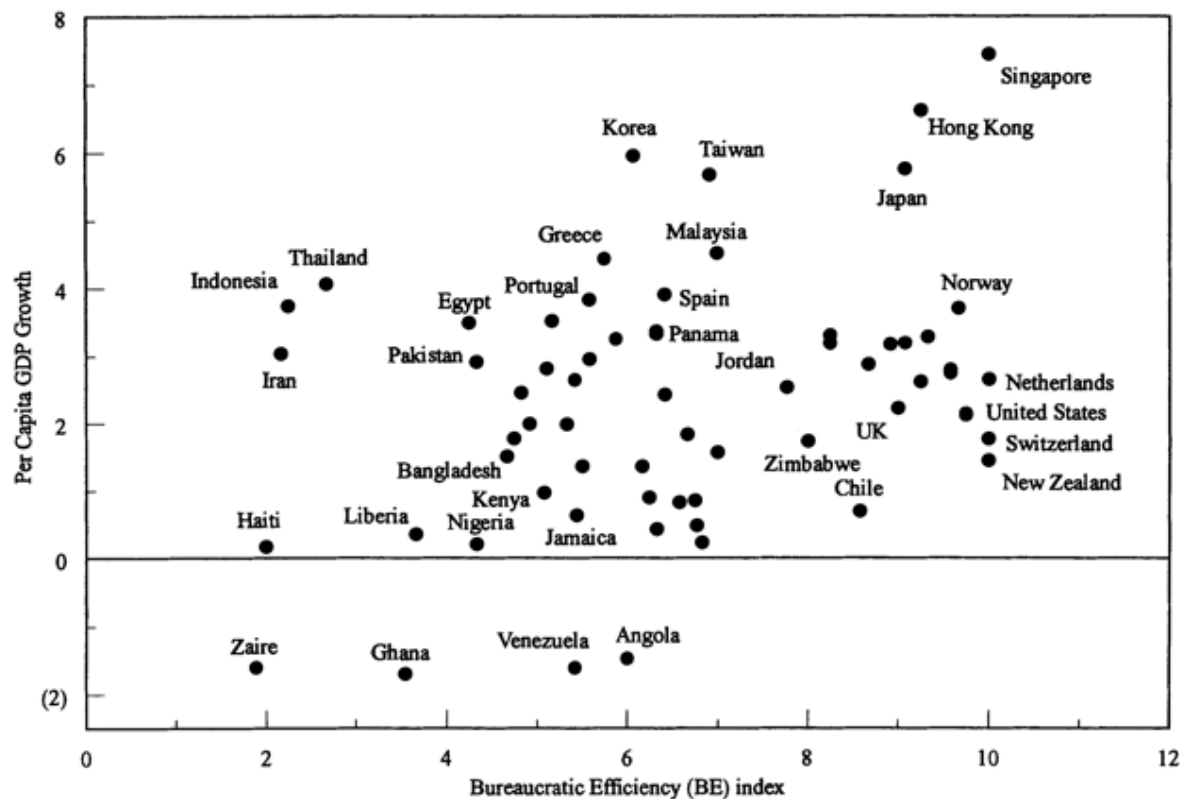


FIGURE III
Growth and Bureaucratic Efficiency

BE index is 1980–1983 average of BI indices of corruption, red tape, and judiciary.

Average GDP per capita growth 1960–1985 from Summers and Heston [1988].
67 countries, $r = 0.32$.

Notes:

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- **Ignoring the bivariate correlation tables Mauro spends a lot of time on**
- **Mauro's approach to mechanism analysis:**
 - ▣ Wants to know if effect of corruption on growth is through its effect on investment
 - ▣ Very old fashioned by 2020 standards
 - Claims to run tests to show appropriate conditions hold to allow for this
 - These tests are not considered valid evidence for this claim today
 - Identifying causal effects through chains of related interactions between variable is an active area of research and very much on the frontier

Identification Strategy

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- **Multivariate regression**
 - ▣ Control for as much as possible
- **Instrumental Variable:**
 - ▣ Ethnolinguistic fractionalization (Definition on p. 692)

Let's talk about the first one above in detail and then tackle the IV approach

Regression Framework

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- **My own notation (no specification provided in the paper)**

$$\begin{aligned}
 y_i = & \beta_0 + \underbrace{\beta_1 GDP60_i}_{\text{Initial size}} + \underbrace{\beta_2 SECED60_i + \beta_4 PRIMED60_i}_{\text{Human Capital Measures}} + \underbrace{\beta_3 POPGROWTH_i}_{\text{Labor Growth}} + \\
 & \underbrace{\beta_5 GOVEXP_i}_{\text{Gov. Capacity}} + \underbrace{\beta_6 REVCOUPS_i + \beta_7 ASSASSIN_i}_{\text{Political Stability Measures}} + \underbrace{\beta_8 PPI60_i + \beta_9 PPI60DEV_i}_{\text{Controls for Market Distortions}} + \\
 & \underbrace{\beta_9 BUREFF_i}_{\text{Variable of Interest}} + \gamma_r + \varepsilon_i
 \end{aligned}$$

See Barro (1991)

Series of binaries for Africa, or Latin America

TABLE VI
INVESTMENT ON CORRUPTION, BUREAUCRATIC EFFICIENCY
Dependent variable: investment/GDP (1960–1985 Average)

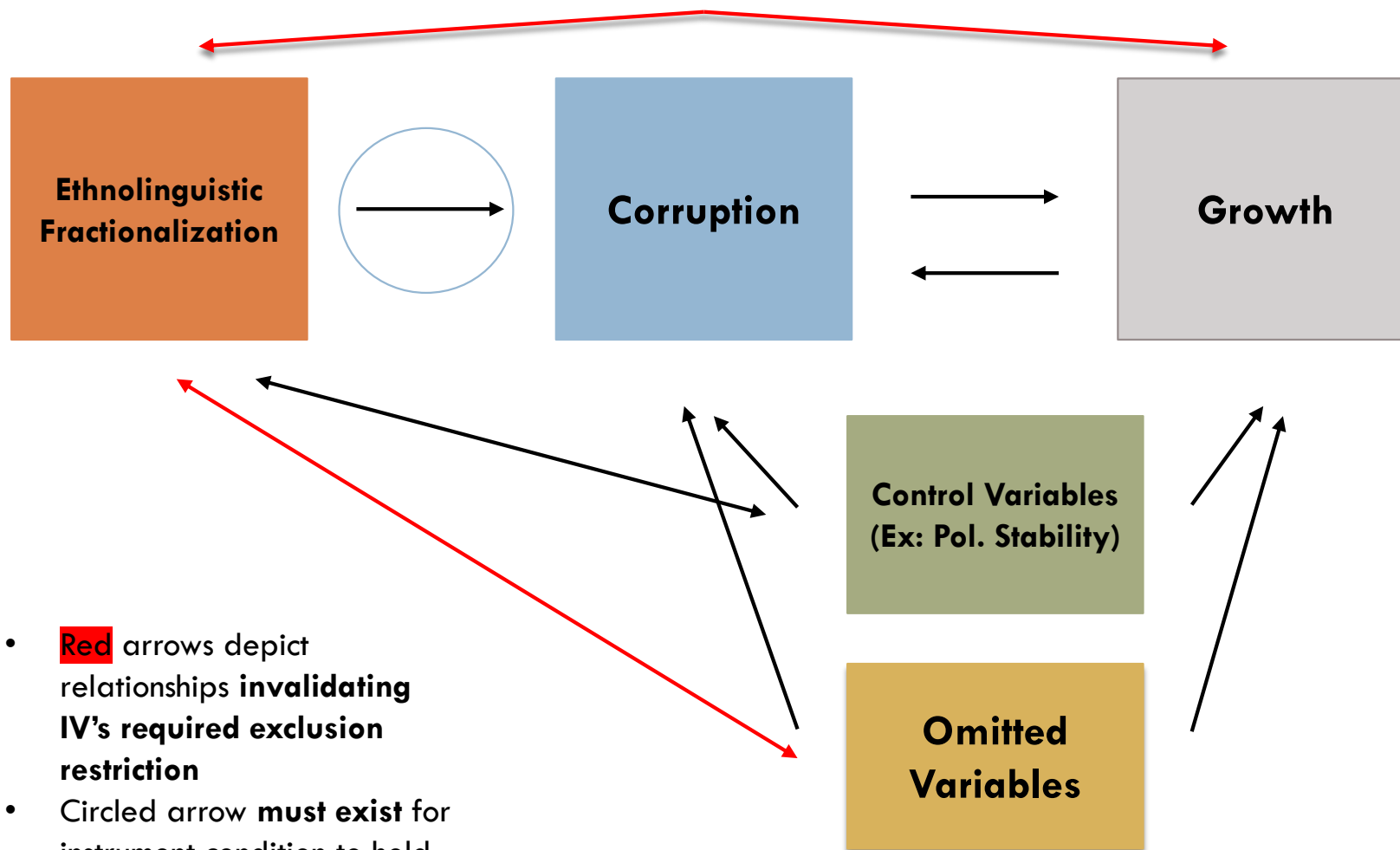
Independent variable	(1)	(2)	(3)	(4)	(5)	(6)	(7)
Constant	0.104 (3.03)	0.114 (3.18)	0.196 (4.65)	0.036 (0.42)	0.039 (0.40)	0.186 (0.31)	0.001 (0.01)
GDP in 1960	-0.008 (-1.31)	-0.006 (-0.81)	-0.004 (-0.60)	-0.026 (-1.57)	-0.021 (-1.41)	-0.015 (-2.50)	-0.017 (-2.73)
Secondary education in 1960	0.060 (0.97)	0.111 (1.68)	0.096 (1.40)	-0.078 (-0.56)	0.017 (0.16)	0.082 (1.60)	0.115 (2.04)
Population growth	-1.373 (-1.38)	-0.620 (-0.61)	-0.913 (-0.82)	-2.754 (-1.84)	-1.144 (-1.12)		
Primary education in 1960						0.105 (2.89)	0.111 (3.36)
Government expenditure						-0.166 (-1.06)	-0.206 (-1.39)
Revolutions and coups						-0.009 (-0.22)	-0.005 (-0.139)
Assassinations						-0.164 (-0.69)	-0.276 (-1.03)
PPI60						-0.058 (-2.81)	-0.061 (-2.79)
PPI60DEV						0.043 (1.24)	0.035 (1.04)
Africa							0.036 (1.92)
Latin America							0.017 (0.88)
High Bureaucratic efficiency dummy			0.051 (2.26)				
Low Bureaucratic efficiency dummy			-0.014 (-0.77)				
Political stability index						0.013 (1.64)	0.014 (1.79)
Bureaucratic efficiency index	0.019 (4.04)			0.004 (1.76)		0.010 (2.19)	0.009 (1.76)
Corruption index		0.013 (2.94)			0.034 (1.56)		
Estimation method	OLS	OLS	OLS	2SLS	2SLS	OLS	OLS
R ²	0.51	0.47	0.44	(*)	(*)	0.65	0.66

TABLE VII
GROWTH ON CORRUPTION, BUREAUCRATIC EFFICIENCY
Dependent variable: Per Capita GDP growth (1960–1985 Average)

Independent variable	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)
Constant	0.05 (0.63)	0.012 (1.63)	-0.049 (-1.53)	-0.034 (-1.33)	0.012 (1.26)	0.019 (1.86)	-0.011 (-0.45)	-0.010 (-0.32)	0.002 (0.23)	0.004 (0.47)	-0.006 (-0.52)	0.006 (0.48)	0.013 (1.12)	0.001 (0.11)	0.007 (0.67)
GDP in 1960					-0.008 (-4.87)	-0.007 (-3.88)	-0.013 (-2.91)	-0.012 (-2.53)	-0.008 (-4.55)	-0.006 (-4.25)	-0.006 (-3.97)	-0.008 (-9.38)	-0.007 (-8.02)	-0.008 (-8.23)	-0.007 (-5.95)
Secondary education in 1960					0.011 (0.81)	0.031 (2.40)	-0.031 (-0.71)	-0.001 (-0.03)	0.005 (0.37)	0.017 (1.42)	0.007 (0.351)	0.020 (2.62)	0.006 (0.95)	0.015 (1.78)	-0.005 (-0.51)
Population growth					-0.654 (-2.85)	-0.395 (-1.88)	-1.077 (-2.04)	-0.564 (-1.66)	-0.519 (-2.35)	-0.318 (-1.81)	-0.246 (-1.24)				
Primary education in 1960												0.018 (2.58)	0.015 (2.42)	0.014 (1.99)	0.007 (1.27)
Government expenditure												-0.114 (-3.66)	-0.095 (-3.22)	-0.108 (-3.76)	-0.082 (-3.36)
Revolutions and coups												-0.008 (-1.25)	-0.010 (-1.45)	-0.008 (-1.24)	-0.009 (-1.66)
Assassinations												-0.218 (-4.11)	-0.190 (-3.57)	-0.210 (-4.29)	-0.173 (-3.98)
PPI60												0.001 (0.06)	0.003 (0.64)	0.003 (0.73)	0.009 (1.86)
PPI60DEV												-0.018 (-2.88)	-0.156 (-2.23)	-0.019 (-3.14)	-0.017 (-3.00)
Africa													-0.017 (-4.26)		-0.021 (-5.21)
Latin America													-0.005 (-1.19)		-0.006 (-1.70)
Political instability index												0.003 (2.35)	0.002 (1.95)	0.003 (2.34)	0.002 (1.82)
Investment 1960–1985									0.098 (2.82)	0.125 (3.64)	0.230 (3.14)			0.051 (2.16)	0.083 (3.60)
Bureaucratic efficiency index	0.003 (2.58)		0.011 (2.33)		0.006 (3.08)		0.014 (1.88)		0.004 (2.03)				0.001 (1.24)	0.002 (1.89)	0.001 (0.74)
Corruption index		0.002 (1.97)		0.008 (2.34)		0.003 (1.91)		0.011 (1.49)		0.002 (1.13)					
Estimation methods	OLS	OLS	2SLS	2SLS	OLS	OLS	2SLS	2SLS	OLS	OLS	2SLS (OI)	OLS	OLS	OLS	OLS
R*	0.13	0.07	(*)	(*)	0.38	0.27	(*)	(*)	0.46	0.40	(*)	0.74	0.79	0.76	0.83

Instrumental Variable Approach

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- **Red** arrows depict relationships **invalidating IV's required exclusion restriction**
- Circled arrow **must exist** for instrument condition to hold

Does this work?

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- **Could ethnolinguistic fractionalization affect growth directly?**
 - ▣ Not sure... My guess is as good as yours. What do you think?
- **Could it affect growth through some variable that is not controlled?**
 - ▣ Think about what is not controlled for in the regression
 - ▣ Here is an obvious one to get your mind going:
 - Social cohesion and trust of others probably relates to growth and is probably strongly related to ethnolinguistic fractionalization. It's not controlled for by Mauro. If this is the case, his IV approach would be invalid
 - ▣ Again. My ideas are as good as yours here

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