Ethnic diversity

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Diversity: good or bad?

- Positive and negative effects of diversity in production functions, preferences for public policies, interpersonal interactions.

Production function

- Diversity of skills, variety of inputs in a Dixit Stiglitz production function
- More variety more productivity
- But: difficulty in communication in teams (Lazear)
- Optimal amount of diversity in production? Inverted U curve?

Preferences

- Preferences for homogeneity of culture, language, ethnicity religion or preferences for diversity in a group?

- Most survey and experimental evidence suggest that most people prefer homogeneity

Preferences and Public Policies

- It seem easier to enforce "good public policies" in more homogeneous places.

- Diversity hard to manage.

- U curve her as well? Two equally sized groups versus many small groups? James Madison Federalist paper

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Social capital, trust

- Lower in places with more heterogeneity.
- Evidence from experiments, surveys and observed behavior.
- Hard to think of a U curve here.

Hypothesis

- Diversity may be productivity inducing, at least to a point because of variety of inputs and skills

- This effect is larger the more developed is the economy because variety is more valuable and institutions to deal with complexity are more developed

Hypothesis

- But: how correlated is diversity in skills in production and ethnic diversity?

Hypothesis

- Provision of public goods lower with heterogeneity
- Two reasons: do not want to physically share a public good with other races (say a swimming pool) or different preferences over types or location of public goods (a public swimming pool in a white suburb or a public school in a black neighborhood)
- Trust, social activities social capital lower with more heterogeneity

Measurement

- Ethnicity= Language (Atlas Novi Mira)
- Problematic in Latin America and US Black and Whites in the same groups
- Ethnicity= Language + Skin Color (data set in Alesina et al J Ec. Growth 2004)

Index

- Probability that two randomly drawn individuals belong to the same group

- Is it the correct one?

- James Madison argument in Federalist papers

- Polarization index

Results

- Ethnic fragmentation and growth; Easterly and Levine (1997)
- Ethnic fragmentation in rich and poor countries, in democracies and non
- Remember endogenous institutions!

TABLE 1
FRACTIONALIZATION AND LONG-RUN GROWTH
(DEPENDENT VARIABLE IS GROWTH OF PER CAPITA GDP)

Variable	ETHNIC		LANGUAGE	
	1	2	3	4
Dummy for the 1960s	0.059	0.153	0.065	0.156
	(3.357)	(5.144)	(3.563)	(5.248)
Dummy for the 1970s	0.057	0.158	0.062	0.161
	(3.093)	(5.222)	(3.280)	(5.333)
Dummy for the 1980s	0.036	0.141	0.042	0.145
	(1.940)	(4.601)	(2.213)	(4.725)
Dummy for Sub-Saharian Africa	-0.008	-0.016	-0.009	-0.014
	(-1.630)	(2.853)	(-2.026)	(-2.595)
Dummy for Latin America and the Caribbean	-0.016	-0.011	-0.019	-0.018
	(-4.458)	(-2.923)	(-5.252)	(-4.201)
Log of initial income	-0.004	-0.018	-0.004	-0.018
	(-1.499)	(-3.767)	(-1.660)	(-3.724)
Log of schooling	0.012	0.005	0.011	0.008
	(2.767)	(1.092)	(2.627)	(1.669)
Assassinations		-21.342		-13.988
		(2.212)		(-1.010)
Financial Depth		0.012		0.010
		(1.798)		(1.652)
Black Market premium		-0.021		-0.022
		(4.738)		(-4.953)
Fiscal Surplus/GDP		(0.128)		0.132
		3.369		(3.474)
Log of telephones per worker				0.004
		(0.006)		(1.488)
		2.078		
Fractionalization	**-0.020**	**-0.014**	**-0.019**	**-0.021**
	(-3.005)	**(-1.795)**	**(-2.979)**	**(-2.881)**
No of Observations	82; 88; 94	40; 69; 66	82; 86; 92	39; 68; 65
R-squared	.23; .17; .35	.32; .43; 54	.21; .21; .30	.36; .47; .52

(t-statistics in parentheses)
Estimated using Seemingly Unrelated Regressions: a separate regression for each ten year period.

Variable	ETHNIC		LANGUAGE	
	1	2	3	4
Dummy for the 1960s	0.064	0.220	0.098	0.253
	(2.522)	(5.116)	(3.910)	(6.827)
Dummy for the 1970s	0.061	0.226	0.096	0.260
	(2.369)	(5.179)	(3.735)	(6.897)
Dummy for the 1980s	0.041	0.209	0.077	0.245
	(1.542)	(4.757)	(2.951)	(6.411)
Dummy for Sub-Saharian Africa	-0.007	-0.014	-0.007	-0.011
	(-1.574)	(-2.479)	(-1.478)	(-2.138)
Dummy for Latin America and the Caribbean	-0.016	-0.013	-0.021	-0.019
	(-4.386)	(-3.233)	(-5.517)	(-4.787)
Log of initial income	-0.005	-0.027	-0.008	-0.031
	(-1.297)	(-4.253)	(-2.420)	(-5.523)
Log of schooling	0.012	0.006	0.011	0.009
	(2.775)	(1.112)	(2.599)	(1.966)
Assassinations		-21.880		-16.919
		(-2.311)		(-1.303)
Financial Depth		0.011		0.008
		(1.649)		(1.385)
Black Market premium		-0.021		-0.020
		(-4.736)		(-4.729)
Fiscal Surplus/GDP		0.136		0.146
		(3.618)		(4.048)
Log of telephones per worker		0.007		0.005
		(2.532)		(1.969)
Fractionalization	**-0.031**	**-0.129**	**-0.083**	**-0.214**
	(-0.655)	(-2.319)	(-1.851)	(-4.382)
Fractionalization * log of initial income	**0.001**	**0.015**	**0.008**	**0.025**
	(0.227)	(2.084)	(1.279)	(3.977)
No of Observations	82; 88; 94	40; 69; 66	80; 86; 92	39; 68; 65
R-squared	.23; .18; .35	.27; .48; .55	.22; .25; .28	.36; .55; .56

(t-statistics in parentheses)
Estimated using Seemingly Unrelated Regressions: a separate regression for each ten year period.

TABLE 3
FRACTIONALIZATION, DEMOCRACY AND LONG-RUN GROWTH
(DEPENDENT VARIABLE IS GROWTH OF PER CAPITA GDP)

Variable	ETHNIC		LANGUAGE	
	1	2	3	4
Dummy for the 1960s	0.059	0.153	0.073	0.159
	(3.290)	(5.090)	(3.897)	(5.331)
Dummy for the 1970s	0.056	0.155	0.069	0.162
	(2.869)	(4.983)	(3.418)	(5.220)
Dummy for the 1980s	0.035	0.137	0.050	0.146
	(1.790)	(4.358)	(2.420)	(4.632)
Dummy for Sub-Saharian Africa	-0.008	-0.014	-0.006	-0.010
	(-1.628)	(-2.493)	(-1.371)	(-1.805)
Dummy for Latin America and the Caribbean	-0.016	-0.012	-0.020	-0.017
	(-4.521)	(-3.017)	(-5.324)	(-4.087)
Log of initial income	-0.004	-0.019	-0.006	-0.019
	(-1.619)	(-3.933)	(-2.274)	(-4.029)
Log of schooling	0.012	0.007	0.013	0.010
	(2.842)	(1.351)	(3.108)	(1.959)
Assassinations		-23.495		-14.057
		(-2.423)		(-1.045)
Financial Depth		0.012		0.012
		(1.951)		(1.897)
Black Market premium		-0.021		-0.023
		(-4.828)		(-5.169)
Fiscal Surplus/GDP		0.117		0.131
		(3.060)		(3.520)
Log of telephones per worker		0.006		0.004
		(2.185)		(1.610)
Fractionalization	-0.014	-0.002	-0.017	-0.008
	(-1.856)	(-0.233)	(-2.187)	(-0.877)
Democracy	0.001	0.003	0.002	0.002
	(0.867)	(1.833)	(1.390)	(2.064)
Fractionalization * Democracy	-0.002	-0.005	-0.003	-0.005
	(-1.230)	(-1.871)	(-1.885)	(-2.489)
No of Observations	82; 87; 93	40; 69; 66	80; 85; 90	39; 68; 65
R-squared	.23; .19; .34	.33; .46; .53	.21; .26; .27	.35; .52; .52

(t-statistics in parentheses)
Estimated using Seemingly Unrelated Regressions: a separate regression for each ten year period.

TABLE 4
FRACTIONALIZATION, DEMOCRACY AND LONG-RUN GROWTH
(DEPENDENT VARIABLE IS GROWTH OF PER CAPITA GDP)

Variable	ETHNIC 1	LANGUAGE 3
Dummy for the 1960s	0.118	0.138
	(4.689)	(5.593)
Dummy for the 1970s	0.115	0.135
	(4.356)	(5.197)
Dummy for the 1980s	0.096	0.117
	(3.562)	(4.426)
Dummy for Sub-Saharian Africa	-0.005	-0.003
	(-1.053)	(-0.668)
Dummy for Latin America and the Caribbean	-0.017	-0.020
	(-4.793)	(-5.267)
Log of initial income	-0.012	-0.014
	(-3.398)	(-4.247)
Log of schooling	0.012	0.012
	(2.878)	(2.979)
Fractionalization	**-0.149**	**-0.170**
	(-3.510)	(-4.135)
Fractionalization * log of initial income	**0.017**	**0.020**
	(3.233)	(3.769)
Democracy	**0.001**	**0.001**
	(0.665)	(1.228)
Fractionalization * Democracy	**-0.002**	**-0.003**
	(-1.067)	(-1.944)
No of Observations	82; 87; 93	80; 85; 90
R-squared	.21; .33; .30	.20; .39; .25

(t-statistics in parentheses)
Estimated using Seemingly Unrelated Regressions: a separate regression for each ten year period.

Results: quality of government

- On measures of quality of government Shleifer's gang: "quality of government" paper: broadly speaking lower quality of government with more ethnic fragmentation, especially if one does not control for income levels

Segregation

- Alesina Zhuravaskaya (2009) data collection of measures of segregation
- Data soon available
- Correlation with quality of government
- Migration, endogeneity, instrumental variable

Table 1: The most and the least segregated countries

	Most segregated:			Least segregated:		
Ethnicity						
	$\widehat{S}$	F			$\widehat{S}$	F
Zimbabwe	0.39	0.32	Germany		0.001	0.12
Guatemala	0.38	0.42	Sweden		0.001	0.12
Afghanistan	0.37	0.63	Netherlands		0.001	0.20
Uganda	0.37	0.88	Cambodia		0.001	0.06
Turkey	0.36	0.22	Korea		0.002	0.02
Language						
	$\widehat{S}$	F			$\widehat{S}$	F
Guatemala	0.49	0.36	Haiti		0.001	0.00
Zimbabwe	0.39	0.32	Sweden		0.001	0.12
Afghanistan	0.37	0.63	Burkina Faso		0.001	0.51
Uganda	0.37	0.88	Cambodia		0.001	0.06
Turkey	0.36	0.22	Korea		0.002	0.02
Religion						
	$\widehat{S}$	F			$\widehat{S}$	F
Indonesia	0.27	0.21	Turkey		0.0000	0.16
Bulgaria	0.23	0.22	Chile		0.0002	0.44
Tanzania	0.22	0.73	Paraguay		0.0003	0.16
Nigeria	0.20	0.66	Portugal		0.0005	0.12
India	0.19	0.31	Iran		0.0007	0.00

Note: $\widehat{S}$ − segregation index; F − fractionalization index.

Table 2: Correlation table: Segregation and the quality of government

	Segregation indices					
	Ethnicity $\hat{S}$	Language $\hat{S}$	Religion $\hat{S}$	Ethnicity $\tilde{S}$	Language $\tilde{S}$	Religion $\tilde{S}$
Voice	-0.36	-0.30	-0.25	-0.37	-0.36	-0.19
Political stability	-0.55	-0.45	-0.33	-0.56	-0.54	-0.30
Government effectiveness	-0.35	-0.24	-0.27	-0.35	-0.32	-0.23
Regulatory quality	-0.34	-0.24	-0.26	-0.35	-0.32	-0.23
Rule of law	-0.40	-0.30	-0.29	-0.40	-0.38	-0.25
Control of corruption	-0.36	-0.27	-0.31	-0.37	-0.36	-0.27

Table 3: Segregation and the rule of law, OLS regressions

	Rule of law					
	(1)	(2)	(3)	(4)	(5)	(6)
Segregation (ethnicity)	-2.50***	-1.20**				
	[0.72]	[0.52]				
Fractionalization (ethnicity)	-1.20***	0.01				
	[0.28]	[0.22]				
Segregation (language)			-1.84**	-1.15**		
			[0.71]	[0.46]		
Fractionalization (language)			-1.00***	0.22		
			[0.33]	[0.22]		
Segregation (religion)					-4.53***	0.03
					[1.33]	[0.93]
Fractionalization (religion)					0.76*	0.36
					[0.42]	[0.25]
ln (population)		-0.12		-0.11		-0.12
		[0.07]		[0.07]		[0.09]
ln (GDP per capita)		0.51***		0.50***		0.41***
		[0.07]		[0.08]		[0.07]
ln (average size of region)		0.11		0.1		0.08
		[0.08]		[0.08]		[0.11]
Protestants share		0.007**		0.005		0.003
		[0.003]		[0.004]		[0.003]
Muslims share		0.002		0.001		0
		[0.002]		[0.002]		[0.003]
Catholics share		-0.002		-0.003		-0.003
		[0.002]		[0.002]		[0.002]
Latitude		0.2		0.49		0.78
		[0.44]		[0.48]		[0.58]
English legal origin		0.2		0.12		0.08
		[0.13]		[0.17]		[0.15]
German legal origin		0.38**		0.29		0.36**
		[0.16]		[0.19]		[0.18]
Socialist legal origin		-0.35*		-0.43*		-0.34
		[0.18]		[0.22]		[0.22]
Scandinavian legal origin		-0.06		-0.07		0.00
		[0.28]		[0.38]		[0.00]
Democratic tradition		0.06***		0.07***		0.09***
		[0.02]		[0.02]		[0.03]
Mountains		0.09		0.22		0.03
		[0.16]		[0.17]		[0.20]
Constant	0.79***	-4.25***	0.53***	-4.32***	-0.2	-3.38***
	[0.17]	[0.80]	[0.20]	[0.77]	[0.18]	[0.75]
Observations	97	97	92	92	78	78
R-squared	0.24	0.88	0.15	0.87	0.12	0.84

Table 4: Ethnic and linguistic segregation and the quality of government, OLS

	Ethnicity						Language					
	Voice	Political stability	Govern-t effectiv.	Regul. quality	Rule of law	Control of corr.	Voice	Political stability	Govern-t effectiv.	Regul. quality	Rule of law	Control of corr.
Panel A. Baseline: All controls and full sample												
Segregation	-1.18**	-1.98***	-0.45	-0.88	-1.20**	-0.57	-1.38***	-1.53***	-0.57	-0.69	-1.15**	-0.8
	[0.51]	[0.64]	[0.57]	[0.78]	[0.52]	[0.55]	[0.47]	[0.58]	[0.50]	[0.69]	[0.46]	[0.49]
Fractionalization	0.16	0.1	0.05	0.17	0.01	-0.14	0.26	0.05	0.31	0.3	0.22	0.06
	[0.21]	[0.27]	[0.21]	[0.25]	[0.22]	[0.23]	[0.19]	[0.27]	[0.23]	[0.26]	[0.22]	[0.25]
R-squared	0.84	0.74	0.86	0.78	0.88	0.87	0.84	0.75	0.86	0.77	0.87	0.86
Controls	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes
Sample	full	full	full	full	full	full	full	full	full	full	full	full
Obs.	97	97	97	97	97	97	92	92	92	92	92	92
Panel B. No controls and full sample												
Segregation	-2.36***	-3.77***	-1.86**	-1.72**	-2.50***	-2.15***	-1.83***	-2.91***	-1.22*	-1.03	-1.84**	-1.53**
	[0.69]	[0.67]	[0.72]	[0.85]	[0.72]	[0.72]	[0.66]	[0.67]	[0.72]	[0.79]	[0.71]	[0.74]
Fractionalization	-0.80***	-0.72***	-1.33***	-0.96***	-1.20***	-1.39***	-0.75**	-0.72**	-1.08***	-0.91***	-1.00***	-1.18***
	[0.29]	[0.26]	[0.28]	[0.24]	[0.28]	[0.30]	[0.30]	[0.30]	[0.33]	[0.27]	[0.33]	[0.35]
R-squared	0.18	0.34	0.22	0.19	0.24	0.23	0.13	0.24	0.13	0.13	0.15	0.15
Controls	no	no	no	no	no	no	no	no	no	no	no	no
Sample	full	full	full	full	full	full	full	full	full	full	full	full
Obs.	97	97	97	97	97	97	92	92	92	92	92	92
Panel C: All controls; sample excludes dictatorships												
Segregation	-2.12***	-2.49***	-1.18**	-1.56**	-1.74***	-1.37***	-1.71***	-1.81***	-0.96**	-1.06	-1.42***	-1.18***
	[0.46]	[0.63]	[0.50]	[0.75]	[0.49]	[0.50]	[0.48]	[0.59]	[0.45]	[0.69]	[0.41]	[0.44]
Fractionalization	0.47***	0.15	0.27	0.24	0.19	0.04	0.39*	0	0.36	0.21	0.2	0.09
	[0.17]	[0.29]	[0.19]	[0.23]	[0.20]	[0.21]	[0.22]	[0.31]	[0.25]	[0.25]	[0.24]	[0.25]
R-squared	0.85	0.78	0.89	0.80	0.89	0.90	0.83	0.80	0.89	0.78	0.90	0.89
Controls	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes
Sample	democ	democ	democ	democ	democ	democ	democ	democ	democ	democ	democ	democ
Obs.	77	77	77	77	77	77	75	75	75	75	75	75

Note: Robust standard errors adjusted for heteroscedasticity in brackets. * significant at 10%; ** significant at 5%; *** significant at 1%.

Table 5: Religious segregation and the quality of government, OLS

	Religion					
	Voice	Political stability	Govern-t effectiv.	Regul. quality	Rule of law	Control of corr.
Panel A. Baseline: All controls and full sample						
Segregation	0.51	-0.97	0.28	0.9	0.03	0.11
	[0.91]	[1.20]	[0.88]	[0.85]	[0.93]	[0.84]
Fractionalization	0.13	0.59*	0.43	0.15	0.36	0.52*
	[0.25]	[0.35]	[0.27]	[0.23]	[0.25]	[0.28]
R-squared	0.814	0.679	0.838	0.762	0.839	0.831
Controls	yes	yes	yes	yes	yes	yes
Sample	full	full	full	full	full	full
Obs.	78	78	78	78	78	78
Panel B. No controls and full sample						
Segregation	-3.71***	-4.72***	-4.29***	-3.53***	-4.53***	-5.07***
	[1.40]	[1.39]	[1.29]	[1.25]	[1.33]	[1.32]
Fractionalization	0.78*	0.72**	0.75*	0.63*	0.76*	0.94**
	[0.40]	[0.35]	[0.43]	[0.37]	[0.42]	[0.44]
R-squared	0.109	0.153	0.11	0.103	0.118	0.146
Controls	no	no	no	no	no	no
Sample	full	full	full	full	full	full
Obs.	78	78	78	78	78	78
Panel C: All controls; sample excludes dictatorships						
Segregation	-0.23	-1.3	0.53	0.38	0.06	0.39
	[0.92]	[1.11]	[0.78]	[0.85]	[0.81]	[0.72]
Fractionalization	0.49**	0.68*	0.45	0.06	0.36	0.45
	[0.24]	[0.37]	[0.28]	[0.25]	[0.26]	[0.30]
R-squared	0.809	0.722	0.862	0.789	0.861	0.854
Controls	yes	yes	yes	yes	yes	yes
Sample	democ	democ	democ	democ	democ	democ
Obs.	64	64	64	64	64	64

Results: US localities

- Growth;
- Quality of government: Alesina Baqir and Easterly Qje 1997: composition of government spending
- Poterba JPub Ec 1995 education spending in ethnically fragmented cities and interaction with age

TABLE 5
FRACTIONALIZATION AND POPULATION GROWTH IN U.S. COUNTIES
(DEPENDENT VARIABLE IS GROWTH IN LOG OF POPULATION 1970–2000)

Variable	1	2	3	4
Intercept	-0.088	0.902	-0.088	0.906
	(-1.600)	-18.66	(-1.600)	(18.690)
Log of population 1970	0.034	-0.034	0.033	-0.036
	(5.610)	(-6.860)	(5.170)	(-6.910) -
Income per capita 1970(a)	.095	-0.071	0.100	-0.068
	(6.300)	(-5.630)	(6.360)	(-5.290)
Growth in log of population 1960–1970		1.619		1.620
		(44.730)		(44.740)
Northeast	-0.396	-0.273	-0.396	-0.271
	(-12.480)	(-10.960)	(-12.410)	(-10.800)
Central	-0.413	-0.318	-0.413	-0.316
	(-19.740)	(-19.330)	(-19.610)	(-19.080)
South	-0.115	-0.137	-0.116	-0.143
	(-5.220)	(-7.930)	(-5.010)	(-7.890)
Fractionalization 1960			**0.019**	**0.042**
			(0.370)	**(1.080)**
No of Observations	3133	3120	3120	3120
Adj. R-squared	.17	.50	.18	.50

(t-statistics in parentheses)
(a) Coefficient multiplied by 10^3.

TABLE 6
FRACTIONALIZATION, INCOME AND POPULATION GROWTH IN COUNTIES
(DEPENDENT VARIABLE IS GROWTH IN LOG OF POPULATION 1970–2000)

Variable	growth 1960–2000		growth 1970–2000		growth 1970–2000		growth 1980–2000	
	1	2	3	4	5	6	7	8
Intercept	-0.221 (-2.500)	0.679 (7.170)	0.043 (0.660)	1.026 (18.360)	-0.096 (-1.450)	0.974 (16.930)	-0.397 (-9.550)	-0.229 (-7.160)
Log of population 1960	0.019 (2.250)	-0.038 (-4.510)						
Log of population 1970			0.029 (4.560)	-0.039 (-7.470)	0.038 (6.020)	-0.036 (-6.710)		
Log of population 1980							0.051 (13.630)	0.019 (6.900)
Income per capita 1970(a)	0.216 (8.810)	0.049 (1.940)	0.059 (3.060)	-0.105 (-6.790)	0.086 (4.440)	-0.094 (-6.000)		
Income per capita 1980(a)							0.028 (5.100)	0.003 (0.740)
Growth in log of population 1950–1960		0.965 (20.880)						
Growth in log of population 1960–1970				1.618 (44.830)		1.622 (44.720)		
Growth in log of population 1970–1980								1.060 (52.880)
Northeast	-0.378 (-9.110)	-0.236 (-5.990)	-0.385 (-12.030)	-0.261 (-10.390)	-0.405 (-12.63)	-0.269 (-10.660)	-0.253 (-12.460)	-0.017 (-1.080)
Central	-0.446 (-16.360)	-0.369 (-14.260)	-0.410 (-19.530)	-0.314 (-18.990)	-0.420 (-19.87)	-0.317 (-19.010)	-0.252 (-18.680)	-0.040 (-3.800)
South	-0.085 (-2.500)	-0.048 (-1.670)	-0.130 (-5.530)	-0.155 (-8.490)	-0.101 (-4.410)	-0.138 (-7.720)	-0.067 (-4.990)	-0.028 (-2.890)
Fractionalization 1960	-0.727 (-3.270)	-0.906 (-4.280)	-0.581 (-3.380)	-0.505 (-3.770)				
Fractionalization 1960 * Income per capita 1970(a)	0.415 (3.950)	0.471 (4.690)	0.297 (3.650)	0.271 (4.270)				
Fractionalization 1970					-0.130 (-0.770)	-0.335 (-2.520)		
Fractionalization 1970 * Income per capita 1970(a)					0.001 (0.020)	0.151 (2.410)		
Fractionalization 1980							0.068 (0.670)	0.015 (0.190)
Fractionalization 1980 * Income per capita 1980(a)							-0.033 (-1.970)	0.025 (1.740)
No of Observations	3120	3102	3120	3120	3133	3120	3137	3133
Adj. R-squared	.19	.29	.18	.50	.18	.50	.20	.58

(t-statistics in parentheses)
(a) Coefficient multiplied by 10^3.

TABLE I
VARIABLE DEFINITIONS
OBSERVATIONS ARE FOR 1990 UNLESS OTHERWISE NOTED

Ethnicity

Ethnic fractional-ization	Measures the probability that two persons drawn randomly from the population belong to different self-identified ethnic groups (white, black, American Indian, Asian, and other), hence ranges from 0 (complete homogeneity) to 1 (complete heterogeneity)
Ethnic fractionaliz. 1980	Ethnic Fractionalization Index in 1980
Black	Black, fraction of total population
American Indian	American Indian, Eskimo, or Aleut (fraction of total population)
Asian	Asian or Pacific Islander, Total (fraction of total population)
Other race	Not Black, American Indian, Asian, or White (fraction of total population); proxy for Hispanic
White	White, fraction of total population

TABLE I
(CONTINUED)

Government

Intergovt revenue per capita	Revenue from transfers from higher levels of government, per capita, 1990–1991
Taxes per capita	Total local government taxes per capita, 1990–1991
Surplus per capita	Per capita local government surplus
Surplus per capita before transfers	Per capita local government surplus excluding intergovernmental transfers from revenue
Debt per capita	Per capita local government debt outstanding
Expenditure per capita	General local government expenditure per capita, 1990–1991
Share of spending on health	Fraction of general local government expenditure for health and hospitals
Share of spending on education	Fraction of general local government expenditure for education (metro and county only)
Share of spending on police	Percent of general local government expenditure for police protection
Share of spending on fire protection	Fraction of general local government expenditure for fire protection (available for cities only)
Share of spending on roads	Fraction of general local government expenditure for highways
Share of spending on welfare	Fraction of local government direct general expenditures for public welfare (metro and county only)
Share of spending on sewerage and trash pickup	Fraction of general local government expenditure for sewerage and trash pickup (available for cities only)
Spending on roads per capita	Per capita expenditure on highways

TABLE I
(CONTINUED)

Income, education, and population

Number of households	Number of households
Fraction of population >65	Fraction of population that is 65 years or older
Log of population	Log of population
Median household income	Median household money income, 1989
Income per capita	Per capita money income, 1989
Income per capita, 1979	Per capita money income, 1979
Percentage BA graduates	Persons 25 years and over, fraction with Bachelor's degree or higher
Mean to median income ratio	Ratio of mean to median household income, constructed from above variables

TABLE III
DEPENDENT VARIABLE IS EXPENDITURE SHARE ON ROADS, CITY SAMPLE

RHS var.	1	2	3	4	5	6
Constant	0.14	0.12	0.18	0.18	0.29	0.28
	(31.44)	(14.07)	(7.35)	(7.40)	(9.33)	(9.22)
Ethnic fractionalization	−0.098	−0.090	−0.080	−0.079	−0.060	−0.083
	(−8.69)	(−7.68)	(−6.39)	(−6.34)	(−4.72)	(−6.38)
Income per capita			1.11E-06	1.14E-06	7.00E-07	−1.47E-07	9.34E-07
			(2.52)	(2.56)	(1.30)	(−0.26)	(1.70)
Log of population				−0.006	−0.006	−0.006	−0.006
				(−2.66)	(−2.72)	(−2.62)	(−2.86)
Percentage BA graduates					0.028	0.085	0.007
					(1.25)	(3.42)	(0.26)
Mean to median income ratio						−0.096	−0.047
						(−6.03)	(−2.86)
Fraction of population >65							−0.253
							(−6.25)
No. of obs.	1020	1020	1020	1020	1020	1020
Adj R^2	0.07	0.07	0.07	0.07	0.11	0.13

Heteroskedasticity-corrected t-statistics are in parentheses.

TABLE IV
COEFFICIENTS ON ETHNIC IN TWO REGRESSIONS FOR EXPENDITURE SHARES

	Regressions			
Dependent variable:	1 (no controls)	6 (all controls)	#obs	Adj. R^2
City				
Share of spending on roads	−0.098 (−8.69)	−0.083 (−6.38)	1020	0.13
Share of spending on sewerage and trash pickup	−0.047 (−2.97)	−0.079 (−4.34)	1020	0.09
Share of spending on police	0.057 (4.58)	0.099 (7.37)	1020	0.10
Share of spending on fire protection	−0.002 (−0.18)	−0.004 (−0.40)	1020	0.05
Spending on roads per capita	−36.4 (−4.30)	−37.0 (−3.59)	1020	0.08
Metro				
Share of spending on roads	−0.076 (−9.14)	−0.058 (−4.84)	304	0.22
Share of spending on police	0.024 (4.26)	0.020 (2.39)	304	0.18
Share of spending on education	−0.145 (−4.21)	−0.174 (−3.62)	304	0.17
Share of spending on health	0.219 (5.46)	0.269 (4.03)	304	0.10
Share of spending on welfare	−0.030 (−1.73)	−0.047 (−2.62)	304	0.01
Spending on roads per capita	−137 (−7.19)	−111 (−4.44)	304	0.15
County				
Share of spending on roads	−0.076 (−15.72)	−0.055 (−9.26)	1386	0.21
Share of spending on police	0.031 (10.96)	0.038 (10.44)	1386	0.20
Share of spending on education	−0.109 (−5.27)	−0.103 (−4.18)	1386	0.13
Share of spending on health	0.138 (6.78)	0.125 (5.02)	1386	0.07
Share of spending on welfare	−0.043 (−6.41)	−0.051 (−7.03)	1386	0.05
Spending on roads per capita	−139 (−13.29)	−96 (−7.20)	1386	0.11

Regressions 1 and 6 include the set of control variables that are in regressions 1 and 6 in Table III. Heteroskedasticity-corrected *t*-statistics are in parentheses.