

The Rule of Law and Development:

An analysis on the Rule of Law and its impacts on the social and economic development of a country

Presented to The Leonard N. Stern School of Business Data Bootcamp Final Project Professor Mike Waugh

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Out[661]: The raw code for this IPython notebook is by default hidden for easier reading. To toggle on/off the raw code, click [here](#).

Question

Do a country's governance indicators (such as the rule of law index) predict its capacity for social and economic development?

The rule of law has become important in economics; it embodies and encourages a just society, and is largely considered to be an enabler of growth. It is reasoned that if the state of social and political institutions is deficient, meaning a low rule of law index, economic (and other) policy would not produce the desired results due to lack of enforcement and proper governance. Here, we will not inspect the effectiveness of specific policies against the country's measures of governance, but rather, measure various economic and social indicators—that tend to constitute desired policy outcomes—against governance.

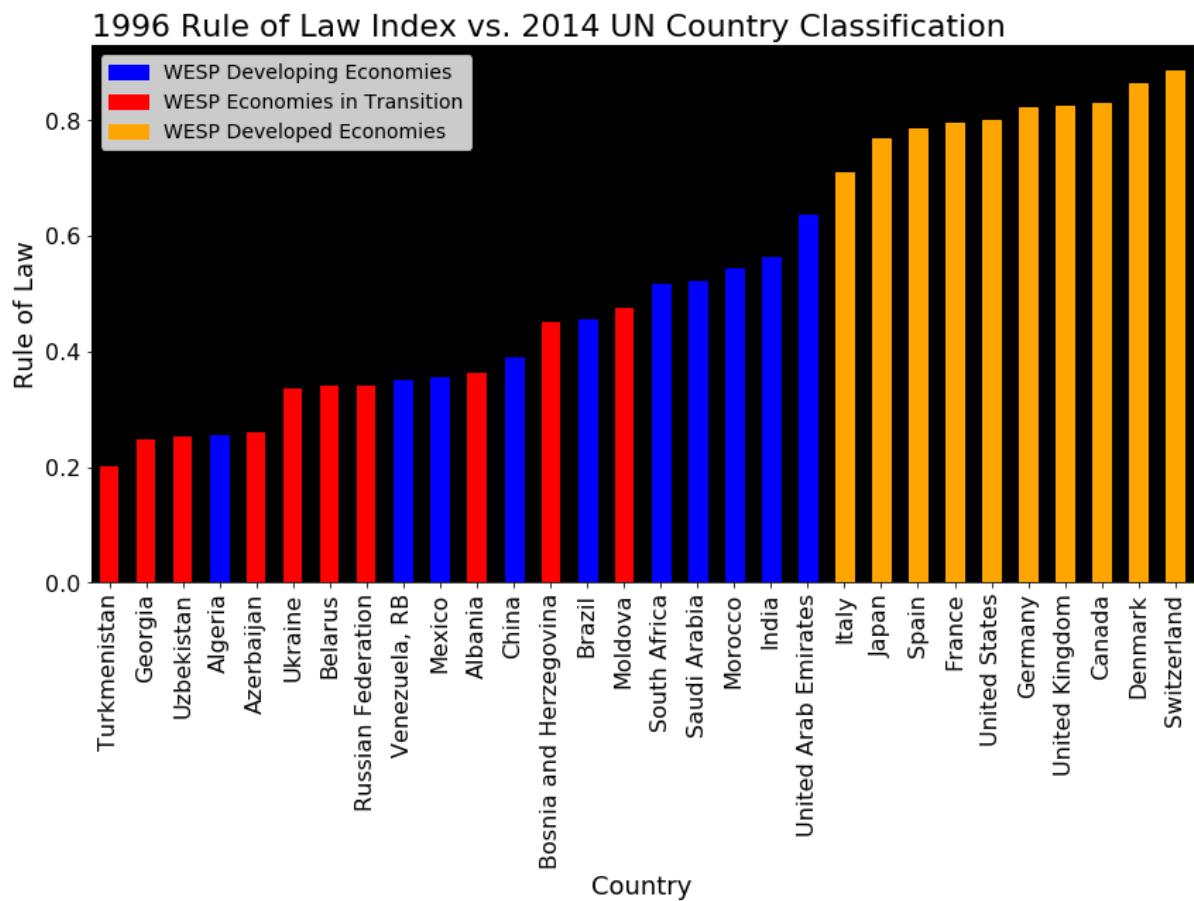
In this project, we will examine the relationship between governance and development, through three levels of analysis.

- 1) Governance Level on Development Level: 1996 Governance Indicators vs 1996 Development Indicators
- 2) Governance Level on Development Growth: 1996 Governance Indicators vs 1996–2014 Development Growth
- 3) Governance Growth on Development Growth: 1996–2014 Governance Growth vs 1996–2014 Development Growth

The cross-country examination will span the world geography with emphasis on the inclusion of countries in different stages of development, as determined by the United Nations WESP classifications. Categorically, we will analyze the degree of correlation, if any, between governance and development indicators in i) developed economies, ii) economies in transition, and iii) developing economies.

Key goals and project outcomes will be to provide concrete evidence of the importance of accountability, protection of fundamental rights, and the accessibility and efficiency of legislative and judicial systems, and to examine potential differences in the relationship between governance and development in countries at different stages of development.

Rule of Law



LEVEL 1: Governace Level (1996) vs. Development Level (1996)

Governance Indicators (1996)

Out[594]:

	Rule of Law	Control of Corruption	Government Effectiveness	Political Stability
country				
Albania	0.363104	0.321219	0.362282	0.433238
Algeria	0.256361	0.386652	0.282247	0.143994
Azerbaijan	0.259768	0.210876	0.316722	0.334469
Belarus	0.340203	0.422078	0.423887	0.518726
Bosnia and Herzegovina	0.451663	0.445886	0.261591	0.381595
Brazil	0.4553	0.496284	0.471373	0.456364
Canada	0.829451	0.906282	0.848473	0.746741

	Rule of Law	Control of Corruption	Government Effectiveness	Political Stat
country				
China	0.390882	0.445762	0.430269	0.480809
Denmark	0.864162	0.946262	0.85181	0.788414
France	0.796737	0.749482	0.750371	0.677646
Georgia	0.248735	0.194547	0.372613	0.186306
Germany	0.821906	0.881043	0.844935	0.757751
India	0.562691	0.423782	0.477679	0.306605
Italy	0.711285	0.58157	0.668065	0.722244
Japan	0.769566	0.738462	0.682058	0.73253
Mexico	0.354671	0.397514	0.545065	0.315399
Moldova	0.475774	0.412515	0.456907	0.502088
Morocco	0.544246	0.478615	0.479118	0.45852
Russian Federation	0.341162	0.289332	0.409555	0.265113
Saudi Arabia	0.522913	0.467339	0.463274	0.46246
South Africa	0.517586	0.646585	0.704099	0.424566
Spain	0.787017	0.725842	0.824005	0.535541
Switzerland	0.88631	0.897395	0.851416	0.791295
Turkmenistan	0.202522	0.295701	0.270064	0.589728
Ukraine	0.335291	0.277973	0.365984	0.469508
United Arab Emirates	0.637683	0.498884	0.655328	0.692625
United Kingdom	0.825747	0.896104	0.876439	0.69635
United States	0.800044	0.814208	0.804984	0.687155
Uzbekistan	0.252164	0.274236	0.259871	0.390865
Venezuela, RB	0.34996	0.327411	0.391857	0.383804

Rule of Law as a Measure of Governance (1996 levels)

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Development Indicators (1996)

Out[596]:

	GDP Per Capita	Life Expectancy	Child Mortality	Homicide Rate	
country					
Albania	1046.36	72.5515	31.5	7.96762	
Algeria	1596.03	68.491	42.3	nan	
Azerbaijan	409.217	65.4944	91.9	nan	
Belarus	1452.45	68.5122	15.5	9.46863	
Bosnia and Herzegovina	736.975	72.2069	12.2	nan	
Brazil	5156.81	68.1047	46	nan	
Canada	21183.2	78.2305	6.7	1.94373	
China	709.414	70.4814	45.5	nan	

	GDP Per Capita	Life Expectancy	Child Mortality	Homicide Rate	
country					
Denmark	35650.7	75.5915	6.2	1.31298	
France	27015.3	77.9537	6.1	2.01696	
Georgia	670.461	70.466	42.6	5.40829	
Germany	30564.2	76.6732	6.2	1.68126	
India	396.015	60.893	105.7	4.39508	
Italy	23020.1	78.522	7	1.67374	
Japan	38436.9	80.2002	5.5	0.49353	
Mexico	4153.15	73.0989	33.7	15.4541	
Moldova	462.172	66.6291	38.5	9.28573	
Morocco	1556.79	67.1182	59.9	nan	
Russian Federation	2643.9	65.8541	21.7	nan	
Saudi Arabia	8293.22	71.4419	27.9	nan	
South Africa	3496.97	60.5344	59.1	60.3902	
Spain	16069.2	78.1205	6.4	1.00457	
Switzerland	46676.9	78.8961	6.1	1.17548	
Turkmenistan	554.955	62.91	88	7.82625	
Ukraine	872.709	66.8878	20.3	9.64286	
United Arab Emirates	28615.6	73.4586	12.7	nan	
United Kingdom	24219.6	77.0878	7	1.32075	
United States	30068.2	76.0268	9.2	7.2923	
Uzbekistan	600.598	66.421	69.7	4.93844	
Venezuela, RB	3013.84	71.2157	25.5	22.0496	

Wealth and Development (1996 levels)

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Rule of Law vs. Development (1996 levels)

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Pearson Standard Correlation Coefficient, All Countries

Out[616]:

	GDP Per Capita	Life Expectancy	Child Mortality	Homicide Rate
Rule of Law	0.878372	0.736153	-0.618813	-0.326889

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Pearson Standard Correlation Coefficient, Developing Economies

Out[617]:

	GDP Per Capita	Life Expectancy	Child Mortality	Homicide Rate
Rule of Law	0.54356	-0.247288	0.195003	0.159882

Pearson Standard Correlation Coefficient, Economies in Transition

Out[618]:

	GDP Per Capita	Life Expectancy	Child Mortality	Homicide Rate
Rule of Law	0.126167	0.474673	-0.699078	0.625323

Pearson Standard Correlation Coefficient, Developed Economies

Out[620] :

	GDP Per Capita	Life Expectancy	Child Mortality	Homicide Rate	
Rule of Law	0.505362	-0.344931	-0.147472	-0.0621861	

LEVEL 2: Governance Level (1996) vs. Development Growth (1996-2014)

Development Indicators, Continously Compounded Annualized Growth (1996 - 2014)

Out [564] :

	GDP Per Capita	Life Expectancy	Child Mortality	Homicide Rate	
country					
Albania	0.0820051	0.00402176	-0.0434866	-0.0382829	
Algeria	0.0683948	0.00551204	-0.0278997	nan	
Azerbaijan	0.164404	0.00504844	-0.056564	nan	
Belarus	0.0969574	0.00350259	-0.072542	-0.053725	
Bosnia and Herzegovina	0.108593	0.00318219	-0.0385082	nan	
Brazil	0.0470447	0.00532692	-0.0572978	nan	
Canada	0.0481991	0.00258261	-0.0140805	-0.014397	
China	0.132355	0.00415674	-0.0764092	nan	
Denmark	0.0312323	0.00363307	-0.0216369	-0.000552034	
France	0.0257643	0.00326395	-0.0234441	-0.0288484	
Georgia	0.104895	0.00182602	-0.0690142	-0.0385934	
Germany	0.0251254	0.00311171	-0.025754	-0.0347168	
India	0.0766313	0.00617363	-0.0442041	-0.0176297	
Italy	0.0239028	0.00314162	-0.0369431	-0.0410114	
Japan	-0.000494654	0.00229839	-0.0375071	-0.0276557	
Mexico	0.0512779	0.00267097	-0.0435072	0.00192845	
Moldova	0.087801	0.00365628	-0.0474098	-0.0591849	
Morocco	0.0392339	0.00635719	-0.0402989	nan	

	GDP Per Capita	Life Expectancy	Child Mortality	Homicide Rate	
country					
Russian Federation	0.0930976	0.00397892	-0.053392	nan	
Saudi Arabia	0.0603504	0.002252	-0.0391088	nan	
South Africa	0.0343072	0.000384436	-0.0157634	-0.0335733	
Spain	0.0339807	0.00351926	-0.0351401	-0.0200684	
Switzerland	0.0343398	0.00294924	-0.0207336	-0.0474901	
Turkmenistan	0.147977	0.00390469	-0.0266187	nan	
Ukraine	0.0705031	0.00346043	-0.0404577	nan	
United Arab Emirates	0.0244671	0.00285285	-0.0263744	nan	
United Kingdom	0.0365759	0.00295894	-0.0245463	-0.0213091	
United States	0.033141	0.00194909	-0.0167934	-0.0280675	
Uzbekistan	0.068216	0.00369851	-0.0514658	nan	
Venezuela, RB	0.0916645	0.00230017	-0.0231833	0.0574355	

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Pearson Standard Correlation Coefficient, All Countries

Out[645]:

	GDP Per Capita	Life Expectancy	Child Mortality	Homicide Rate
Rule of Law	0.878372	0.736153	-0.618813	-0.326889

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Pearson Standard Correlation Coefficient, Developing Economies

Out[658]:

	GDP Per Capita	Life Expectancy	Child Mortality	Homicide Rate
Rule of Law	-0.501916	-0.0467936	0.109335	-0.775404

Pearson Standard Correlation Coefficient, Economies in Transition

Out[659]:

	GDP Per Capita	Life Expectancy	Child Mortality	Homicide Rate
Rule of Law	-0.400727	-0.0455163	0.0821224	-0.735405

Pearson Standard Correlation Coefficient, Developed Economies

Out[660]:

	GDP Per Capita	Life Expectancy	Child Mortality	Homicide Rate	
Rule of Law	0.460629	0.136763	0.691093	0.236711	

LEVEL 3: Governance Growth (1996-2014) vs. Development Growth (1996-2014)

Governance Indicators, Continuously Compounded Annualized Growth (1996 - 2014)

Out[624] :

	Rule of Law	Control of Corruption	Government Effectiveness	Political Stat
country				
Albania	0.00970703	0.0108303	0.0159645	0.0178312
Algeria	0.0165566	-0.000964922	0.0199913	0.0332314
Azerbaijan	0.018979	0.0188853	0.0166286	0.00825036
Belarus	-0.00136622	0.00218568	-0.00283953	0.00181538
Bosnia and Herzegovina	0.00136249	-0.000941434	0.0249343	0.0145859
Brazil	0.00408377	-0.0076671	8.89881e-05	0.00348883
Canada	0.00316878	-0.00244345	0.000237301	-0.000872808
China	0.00360728	-0.00174399	0.0150926	-0.0108534
Denmark	0.00343451	0.000186999	0.000776664	-0.00737863
France	-0.000126271	0.000988695	0.00219656	-0.0105825
Georgia	0.0428787	0.0676269	0.0262655	0.0471978
Germany	0.00324651	-0.000849363	8.82315e-05	-0.0056045
India	-0.00798592	-0.00124438	-0.00223167	-0.00113266
Italy	-0.0117706	-0.00905833	-0.00835074	-0.011082
Japan	0.00354744	0.00708577	0.0130398	-0.00302422
Mexico	0.00878535	-0.00744505	-0.000596231	0.00238209
Moldova	-0.0030408	-0.0124196	-0.0051682	-0.00388187
Morocco	-0.00617762	-0.00381345	0.000688579	-0.00611262