

Preferential Trade Agreements, Democracy, and the Risk of Coups d'état

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ABSTRACT

An emerging research agenda investigates the political consequences of signing preferential trade agreement (PTAs) in the age of economic globalization. In particular, signing PTAs either prolongs leaders' political survival or consolidates the regime. Following this line of research, I argue that signing PTAs helps political leaders to reduce the risk of coup d'état because it acts as a credible commitment of signatory countries to pursue long-term economic benefits, which further reduce some potential challengers' incentives to initiate coups with other elites. In addition, the effects of PTAs on inhibiting coups are stronger in democracies because democracies are more capable of compensating globalization losers via democratic process than their authoritarian counterparts are. I test both arguments with the data of 154 countries during 1960 and 2012. The empirical results suggest that a higher number of PTAs reduces more risks of coup attempts, especially in countries with a higher level of democratic development. I also find that deeper PTAs have stronger effects on reducing coup attempts. This paper contributes to emerging studies on the political economy of PTAs.

Introduction

An emerging research agenda has focused on the political consequences of preferential trade agreements (PTAs). Because PTAs can generate long-term economic growth for their signatories (Hur and Park 2012), scholars argue that PTAs not only help politicians to prolong their political survival (Hollyer and Rosendorff 2012) but also consolidate political regimes (Chang and Wu 2016; Liu and Ornelas 2014). Due to this consolidating effects of PTAs, Chow and Baccini (2017) recently find that dictators facing a higher risk of coup d'état are more likely to sign PTAs. However, what is missing in Chow and Baccini (2017) is a comprehensive evaluation on how PTAs reduce the risk of coup d'état. This article aims to fulfill this gap.

In this article, I argue that signing PTAs indeed reduces the risk of coups d'état. Two mechanisms make PTAs an effective tool to inhibit coups. First, PTAs generate economic growth for their signatories and make domestic oppositions less likely to challenge the incumbent. Second, PTAs act as a credible commitment to domestic opposition that the economic growth will not disappear due to the issue of time inconsistency. Thus, the long-term economic benefits induced by PTAs help political leaders face fewer risks from their potential challengers.

In addition, I argue the effects of PTAs on inhibiting coups is stronger in democracies, because democratic regimes are more able to compensate globalization losers than their authoritarian counterparts are. In other words, economic losers created by the formation of PTAs have other ways to ask for compensation rather than initiating coups if they live in democracies.

Figure 1 offers preliminary empirical evidence to support the two arguments of this paper. In Figure 1, I plot the trends of coup attempts and the means of new PTAs as well as democracy level at the global level. As the number of coup attempts drops after the end of the cold war in the early 1990s, the average level of democracy in the world begins to increase. Meanwhile, the number of new PTAs increases with the world level of democracy. In other words, Figure 1

suggests that the formation of PTAs and democratic development may be related to the onsets of coups d'état, especially after the 1990s.

Preferential Trade Agreements and Political Stability

- Leadership survival (Hollyer and Rosendorff 2012)
- Democratic consolidation (Liu and Ornelas 2014)
- Regime breakdown (Chang and Wu 2016)
- Coup (Baccini and Dür 2012)
- The Role of Democracy (Adserà and Boix 2002; Hays, Ehrlich, and Peinhardt 2005; Ruggie 1982)

Hypothesis 1: The formation of PTAs reduces the risk of coup d'etat.

Hypothesis 2: The effects of PTAs on inhibiting coup d'etat is stronger in democracies.

Research Design

To test my hypotheses, I construct a cross-national time-series dataset that covers 154 countries between 1960 and 2012. As the main theoretical focus of this article is the political consequence of signing PTAs within their signatories, the unit of analysis is the country-year. I discuss the data and operationalization below in detail. Tables A.1 and A.2 in the Appendix report the summary statistics and the countries in the sample.

Dependent Variable

The dependent variable in my analysis, coup attempt, is taken from the dataset of Powell and Thyne (2011). In their dataset, Powell and Thyne (2011, 252) define coup d'etat as “illegal and overt attempted by the military or other elites within the state apparatus to unseat the sitting executive.” I use a binary variable to indicate whether at least one coup attempt occurred or not in the observed year.

Independent Variables

I construct the key independent variable, *No. of PTAs*, using the dataset on the content of preferential trade agreements recently constructed by the World Bank (Ruta, Hofmann, and Osnago 2017). This dataset covers the entire set of PTAs in force and notified to the World Trade Organization (WTO) as of 2015. Specifically, it includes 279 PTAs signed by 189 countries between 1958 and 2015. Based on this dataset, we calculate the cumulative number of PTAs signed by a country in the observed year. The distribution of this PTA variable is right-skewed with many zeros because many countries signed no PTAs until the 21st century. To address the skewness, I follow previous studies and take the natural logarithm of the cumulative number of PTAs plus one (Chang and Wu 2016; Hollyer and Rosendorff 2012).

Another key independent variable in my analysis is a country's level of democracy. I use a country polity score to measure its level of democracy (Marshall and Jaggers 2002).

As hypothesis 2 is concerned with the interactive effects between PTAs and democracy, I construct an interaction term between two variables. I expect that the sign of this interaction term to be negative.

I include several variables in my empirical analysis to consider their possible confounding effects on coup attempt. First, I include a country's military size and total population. The data on both variables are taken from the COW Project. Second, I control for a country's economic development by including a country's GDP per capita. The data on GDP per capita are taken from the Penn World Table (version 9.0) and log-transformed.

Third, I also consider the role of natural resources in coup attempt. I expect that more natural resources would be associated with coup attempts because the opposition have a stronger incentive to use coups to replace the incumbent if the endowment of natural resources is more abundant.

Additionally, I control for a country's history of coup attempts because some countries, like Thailand, tend to experience coups more often than others. As a result, I include the number of times a country previously experienced coup attempts.

Model Specifications

As the dependent variable in my empirical analysis is a binary one that indicates whether a country experience at least one coup attempt in a given year. I employ binary time-series-cross-sectional (BTSCS) models proposed by Beck, Katz, and Tucker (1998) to conduct our empirical analyses. I also include country and year fixed effects to deal with unobserved country and year heterogeneity. However, I would like to note that many countries have never experienced coup d'état, they are dropped from the fixed-effect models. As a result, the number of countries decreases from 154 to 79 in my main analysis using country and year fixed effects models.

Empirical Results

Table 1 reports the estimation results. First, I estimate a logit model that pools all countries without considering the country- and year- fixed effects. Model 1 indicates that the number of PTAs is negatively associated with coup attempts. However, Model 1 also suggests that a country's level of democracy may be unrelated to coup attempts. Nevertheless, the interaction term between the number of PTAs and democracy is negative and statistically significant at the $p < 0.1$ level, offering empirical evidence to support the hypothesis 2 of this paper.

[Table 1 here.]

To illustrate the interactive effects of PTAs and democracy on coup attempts, I use *Clarify* to calculate the predicted probabilities for two types of countries: those with 1 PTA versus those without any PTAs (King, Tomz, and Wittenberg 2000). Figure 1 plots the results. Specifically, a country is less likely experience coups if it signs one PTAs than those without any PTAs. In addition, the differences in predicted probabilities become larger as a country's level of democracy increases in Figure 2.

[Figure 2 here.]

Neither Model 1 nor Model 2 considers the unobserved country- and year- level heterogeneity. Thus, I estimate a country fixed effects model with year dummies. The coefficients of *No. of PTAs* and *PTA X Democracy* do not have significant changes, but their standard errors increase because the fixed-effect model drops 78 out of 154 countries that never experience coup attempt. Nevertheless, both variables are statistically significant at the $p < 0.1$ level.

In Model 4 and Model 5, I add variables of inequality because a recent study finds that inequality breeds coups. However, the inequality variable has no linear or curvilinear relations with coup attempts in Model 4 and Model 5, respectively, whereas the number of PTAs remains statistically significant.

I conduct a series of robustness checks. First, not all PTAs are the same. Some PTAs may have more political and economic impacts than others. I use two approaches to deal with the issue of PTA varieties. First, I weight a PTA with the (logged) trade volume and GDP of its members, respectively. I use both weighted variables and their interactions term with *Democracy* in Model 6 and Model 7. The results suggest that the weighted PTA variables and their interaction terms have a negative relationship with coups attempt. In other words, a larger economic size of PTAs may make coups attempt less likely to occur, and this effect is becomes larger as a PTA signatory' level of democracy increases.

[Table 2 here.]

In addition, I consider the role of PTA depth in inhibiting coups. I classify PTAs into three categories: low, middle, and high. I calculate each country's number of PTAs based on this typology. The results in Model 8 suggest that both low and high levels PTAs inhibit coups, but PTAs in the middle level do not.

Readers may be concerned about the issue of endogeneity. According to previous studies (Liu and Ornelas 2014), political leaders may have an incentive to sign PTAS to reduce the risk of coups. Thus, I conduct two-stage instrumental variable probit models to address the

endogeneity issue. Specifically, I adopted an instrument in the first stage regression: the mean number of PTAs in the geographical region where a country locates in year $t-1$. Previous studies have shown that the formation of PTAs of a country create the pressure for other countries to “join the club” (Baccini and Dür 2012; Mansfield 1998). Meanwhile, the PTAs signed by other neighboring countries will not directly relate to the domestic political stability in a country. As a result, the mean number of PTAs signed by other neighboring countries in year $t-1$ would be an appropriate instrument to investigate the relationship between coup attempt and PTA formation.

[Table 3 here.]

Table 3 reports the estimation results of instrumental variable probit models. Because the PTA variable may be endogenous, it may be problematic to include its interaction term with level of democracy in the model. Accordingly, I split the sample into two sub-samples with a polity score of six as the cutting point of dictatorships vs. democracies. As indicated in Models 9 and 10, the mean numbers of PTAs for a country’s neighboring countries in the same region is positively associated with a country’s number of PTAs. Meanwhile, a higher number of PTA makes coups attempts less likely occur in both democracy and dictatorships. In other words, the results of both instrumental-variable probit models suggest that PTAs do reduce the risk of coups after considering the effects of endogeneity.

Conclusion

In this paper, I argue that signing PTAs helps political leaders to reduce the risk of coup d’état because it acts as a credible commitment of signatory countries to pursue long-term economic benefits, which further reduce some potential challengers’ incentives to initiate coups with other elites. In addition, the effects of PTAs on inhibiting coups are stronger in democracies because democracies are more capable of compensating globalization losers via democratic process than their authoritarian counterparts are. I test both arguments with the data of 154

countries during 1960 and 2012. The empirical results suggests that a higher number of PTAs reduces more risks of coup attempts, especially in countries with a higher level of democratic development. I also find that deeper PTAs have stronger effects on reducing coup attempts. This paper contributes to emerging studies on the political economy of PTAs.

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Figure and Tables

Figure 1: Coups Attempts, New PTAs, and Level of Democracy in the World, 1950-2015

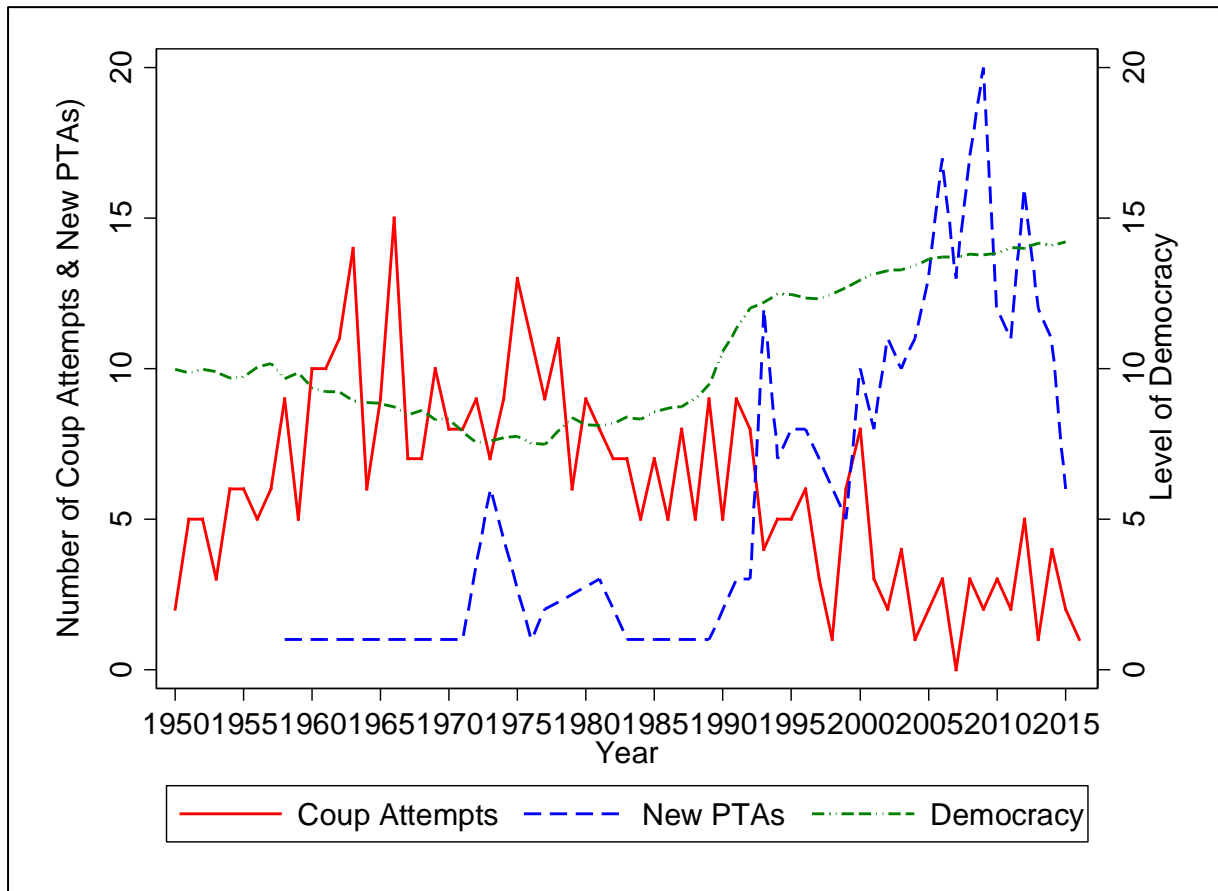


Figure 2: Democracy, PTA Formation, the Rise of Coup Attempt

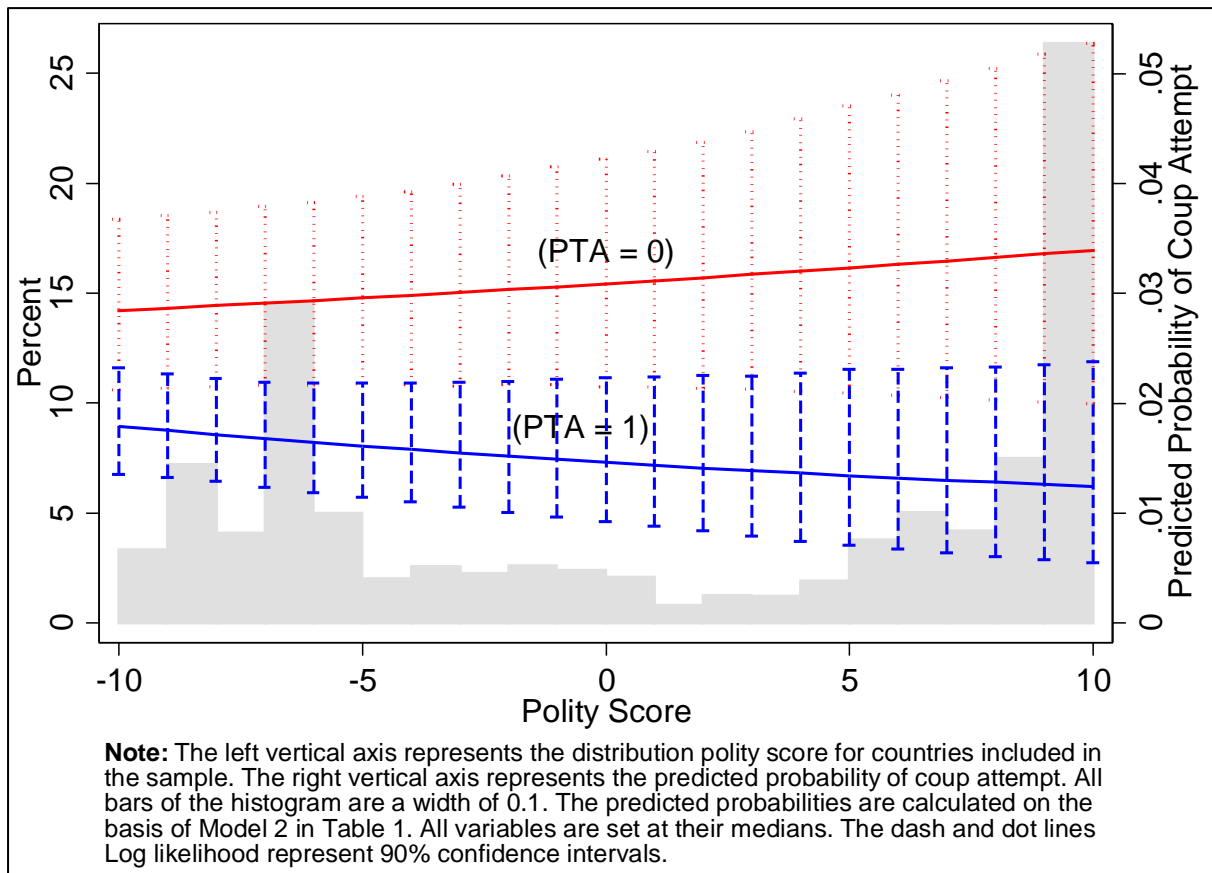


Table 1: PTAs, Democracy, and Coups Attempts

	Model 1	Model 2	Model 3	Model 4	Model 5
<i>No. of PTAs (Logged)</i>	-0.682***	-0.632***	-0.621*	-0.739*	-0.768*
	[0.210]	[0.220]	[0.344]	[0.393]	[0.395]
<i>Democracy</i>	-0.001	0.007	0.057***	0.060***	0.062***
	[0.013]	[0.012]	[0.017]	[0.019]	[0.019]
<i>PTA X Democracy</i>		-0.046*	-0.050*	-0.042	-0.043
		[0.026]	[0.030]	[0.035]	[0.035]
<i>Military Size</i>	0.066*	0.067*	0.201***	0.237***	0.243***
	[0.040]	[0.039]	[0.076]	[0.081]	[0.082]
<i>Population</i>	-0.158**	-0.157**	-1.575**	-1.741**	-1.677**
	[0.074]	[0.074]	[0.734]	[0.820]	[0.823]
<i>GDPpc</i>	-0.440***	-0.434***	-1.098***	-1.148***	-1.108***
	[0.105]	[0.104]	[0.234]	[0.255]	[0.254]
<i>Natural Resources</i>	0.004	0.003	0.037*	0.041*	0.041*
	[0.009]	[0.009]	[0.019]	[0.022]	[0.022]
<i>No. of Previous Coups</i>	0.089***	0.091***	-0.756***	-0.800***	-0.821***
	[0.019]	[0.019]	[0.089]	[0.097]	[0.098]
<i>Inequality (Capital Share)</i>				0.007	-0.136
				[0.016]	[0.120]
<i>Inequality ^2 (Capital Share)</i>					0.001
					[0.001]
Country Fixed-Effects	No	No	Yes	Yes	Yes
Year Fixed-Effects	No	No	Yes	Yes	Yes
No. of Observations	6703	6703	3679	3191	3191
No. of Countries	154	154	76	75	75
No. of Coup Attempts	285	285	285	270	270
Log likelihood	-1028.89	-1027.23	-707.87	-645.70	-644.99

Note: Robust standard errors clustered at the country level are reported in brackets. Three time polynomials are not shown in the table. All independent variables are lagged for one year. * p<0.1, ** p<0.05, *** p<0.01.

Table 2: Alternative Operationalizations of PTAs

	Model 6	Model 7	Model 8
Trade-Weighted PTAs	-0.030*		
	[0.016]		
Democracy	0.058***	0.059***	0.045**
	[0.018]	[0.018]	[0.020]
Trade-Weighted PTAs X Democracy	-0.003*		
	[0.001]		
GDP-Weighted PTAs		-0.020*	
		[0.012]	
GDP-Weighted PTAs X Democracy		-0.002*	
		[0.001]	
No. of Low-level PTAs			-1.265**
			[0.523]
No. of Middle-level PTAs			0.153
			[0.398]
No. of High-level PTAs			-4.284***
			[1.633]
Military Size	0.202***	0.204***	0.090
	[0.076]	[0.076]	[0.097]
Population	-1.224*	-1.190*	-1.388
	[0.713]	[0.708]	[0.860]
GDPpc	-1.091***	-1.095***	-0.988***
	[0.235]	[0.235]	[0.276]
Natural Resources	0.034*	0.033*	0.070***
	[0.019]	[0.019]	[0.026]
No. of Previous Coups	-0.747***	-0.743***	-0.943***
	[0.089]	[0.089]	[0.120]
Country Fixed-Effects	Yes	Yes	Yes
Year Fixed-Effects	Yes	Yes	Yes
No. of Observations	3679	3679	2830
No. of Countries	76	76	69
No. of Coup Attempts	285	285	213
Log likelihood	-709.30	-709.58	-516.98

Note: Robust standard errors clustered at the country level are reported in brackets. Three time polynomials are not shown in the table. All independent variables are lagged for one year. * p<0.1, ** p<0.05, *** p<0.01.

Table 3: Addressing the Endogeneity Issue (IV-Probit)

	Model 9		Model 10	
	2 nd stage	1 st stage	2 nd stage	1 st stage
No. of PTAs (Logged)	-0.446*** [0.141]		-0.451*** [0.140]	
Democracy	0.025*** [0.008]	0.001 [0.005]	-0.193*** [0.062]	-0.003 [0.034]
Military Size	0.007 [0.024]	-0.016 [0.014]	0.092 [0.058]	-0.046** [0.020]
Population	-0.062 [0.039]	0.022 [0.022]	-0.107 [0.096]	0.101** [0.048]
GDPpc	-0.108** [0.053]	0.014 [0.030]	-0.201 [0.131]	0.295*** [0.063]
Natural Resources	-0.000 [0.005]	-0.002 [0.003]	0.009 [0.010]	-0.007 [0.006]
No. of Previous Coups	0.056*** [0.016]	-0.005 [0.014]	0.031* [0.017]	-0.016 [0.015]
Mean Number of PTAs in the Region		0.196*** [0.021]		0.345*** [0.028]
Constant	0.599 [0.761]	-0.356 [0.443]	2.432 [1.876]	-4.079*** [0.983]
No. of Observations	3818		2885	
No. of Countries	119		103	
No. of Coup Attempts	235		50	
Log likelihood	-2404.920		-3142.399	
Wald test of exogeneity (Prob > Chi2)	0.08		0.16	

Note: Robust standard errors clustered at the country level are reported in brackets. Three time polynomials are not shown in the table. All independent variables are lagged for one year. * p<0.1, ** p<0.05, *** p<0.01.

Appendices

Table A.1: Summary Statistics

Variable	N	Mean	Std. Dev.	Min	Max
<i>Coup Attempt (DV)</i>	6,703	0.043	0.202	0	1
<i>Number of PTAs (Logged)</i>	6,703	0.657	0.923	0	3.689
<i>Democracy</i>	6,703	1.130	7.476	-10	10
<i>Number of PTAs X Democracy</i>	6,703	3.904	9.291	-17.513	36.889
<i>Number of Low-Level PTAs (Logged)</i>	6,703	0.381	0.746	0	2.996
<i>Number of Middle-Level PTAs (Logged)</i>	6,703	0.413	0.686	0	2.944
<i>Number of High-Level PTAs (Logged)</i>	6,703	0.128	0.355	0	1.609
<i>Military Size</i>	6,703	10.216	2.272	0	15.374
<i>Population</i>	6,703	15.945	1.559	11.689	21.027
<i>GDD per capita</i>	6,703	8.525	1.224	5.322	12.409
<i>Natural Resources</i>	6,703	11.591	10.686	0	26.947
<i>Number of Previous Coup Attempts</i>	6,703	1.812	2.792	0	17
<i>Inequality</i>	5,872	65.139	11.770	22.898	98.482
<i>Inequality Squared</i>	5,872	4381.566	1511.694	524.331	9698.658
<i>Spline 1</i>	6,703	16.503	14.076	0	52
<i>Spline 2</i>	6,703	470.452	653.645	0	2704
<i>Spline 3</i>	6,703	16546.550	30072.590	0	140608
<i>Mean Number of PTAs in the Region</i>	6,703	2.540	2.080	0	6.906

Table A.2: Analyzed Countries

Country	n	Country	n	Country	n	Country	n
Albania	43	Djibouti	36	Lebanon	28	Senegal	53
Algeria	51	Dominican Republic	53	Lesotho	47	Sierra Leone	52
Angola	38	Ecuador	53	Liberia	44	Singapore	48
Argentina	53	Egypt	53	Lithuania	21	Slovak Republic	20
Armenia	21	El Salvador	53	Luxembourg	53	Slovenia	21
Australia	53	Equatorial Guinea	45	Macedonia	20	South Africa	53
Austria	53	Estonia	21	Madagascar	51	South Korea	53
Azerbaijan	21	Ethiopia	1	Malawi	49	Spain	53
Bahrain	42	Fiji	43	Malaysia	53	Sri Lanka	53
Bangladesh	41	Finland	53	Mali	53	Sudan	42
Belarus	19	France	53	Mauritania	53	Suriname	38
Belgium	53	Gabon	53	Mauritius	40	Swaziland	30
Benin	53	Gambia	48	Mexico	53	Sweden	53
Bhutan	30	Georgia	21	Moldova	21	Switzerland	53
Bolivia	53	Germany	23	Mongolia	43	Syria	52
Bosnia and Herzegovina	3	Ghana	53	Montenegro	5	Taiwan	53
Botswana	47	Greece	53	Morocco	53	Tajikistan	21
Brazil	53	Guatemala	53	Mozambique	38	Tanzania	52
Bulgaria	43	Guinea	53	Myanmar	51	Thailand	53
Burkina Faso	53	Guinea-Bissau	39	Namibia	23	Togo	53
Burundi	51	Haiti	48	Nepal	53	Trinidad and Tobago	51
Cambodia	34	Honduras	53	Netherlands	53	Tunisia	53
Cameroon	53	Hungary	43	New Zealand	53	Turkey	53
Canada	53	India	53	Nicaragua	53	Turkmenistan	21
Cape Verde	38	Indonesia	53	Niger	53	Uganda	50
Central African Republic	53	Iran	53	Nigeria	53	Ukraine	21
Chad	53	Iraq	36	Norway	53	United Arab Emirates	42
Chile	53	Ireland	53	Oman	42	United Kingdom	53
China	53	Israel	53	Pakistan	41	United States	53
Colombia	53	Italy	53	Panama	51	Uruguay	53
Comoros	16	Jamaica	51	Paraguay	53	Uzbekistan	21
Congo	53	Japan	53	Peru	53	Venezuela	53
Costa Rica	51	Jordan	52	Philippines	53	Vietnam	7
Cote d'Ivoire	52	Kazakhstan	21	Poland	43	Yemen	23
Croatia	21	Kenya	50	Portugal	53	Yugoslavia	2
Cyprus	53	Kuwait	42	Qatar	42	Zambia	49
Czech Republic	20	Kyrgyz Republic	21	Romania	53	Zimbabwe	43
Democratic Republic of Congo	53	Laos	43	Rwanda	51		
Denmark	53	Latvia	21	Saudi Arabia	43		