

CHAPTER IV: RESULTS

This chapter presents the results of the 2010 IPRI. After a short overview of data and outcomes, the complete 2010 IPRI scores and rankings are presented according to various criteria. In addition, changes in scores from last year are shown. Finally, the relationship between scores on the index and countries' economic well-being is presented.

Data and Outcome Characteristics

The IPRI's 2010 outcomes are mainly based on data obtained from currently available authoritative sources. Most of these sources derive their data from opinion surveys. Generally, experts in their respective fields participated in these surveys, and the resulting rating in the form of a numeric factor is based on their judgment. Thus, it must be emphasized that, based on these sources, a country that ranks worst or best in the IPRI is not necessarily the one with the strongest or weakest property rights; instead, these rankings are based on which country is *perceived* to be the worst or best. Nevertheless, the authors view the expert surveys to be a good and reliable source of judgment related to a country's *de facto* characteristics instead of some measure of what laws and practices may exist in statute only.

Several variables in the IPRI are based on 'hard data.' For example, the numbers of procedures and days necessary to register property, while also based on surveys, are not based entirely on perceptions but on estimates of actual procedures involved. Moreover, estimates of the level of piracy are based on actual economic data. However, the index will benefit from more hard data. A future plan for the index is to obtain more data based on this kind of solid information. For example, it would be valuable to include measures of property rights enforcement or the extent of formalization of property rights based on actual data instead of expert opinions. Future Hernando de Soto fellows will concentrate on seeking and including the most comprehensive and up-to-date sources for additional information on property rights protections.

In analyzing the final outcome of the scoring process, the reader is presented with two related but ultimately different measures of property rights protection throughout the sample: ordinal and cardinal. The scores are presented in such a way that the reader can easily compare countries according to how they rank relative to each other, as well as how well they score compared to each other (and relative to the 0-10 scale). The authors hope that while the relative ranking proves useful, it is the score itself that provides the most useful measure of how well a country protects property rights.

IPRI Ranking

The 2010 *International Property Rights Index* (IPRI) contains the ranking of 125 economies, which represents 97 percent of the world Gross Domestic Product (GDP). [Figure 2](#) and [Table 1](#) present the ranking by highest to lowest scoring and scores by country, respectively.

It is important to note that because of the expansion of the country coverage this year, the rankings in the 2010 report are not directly comparable to the rankings in the 2009 report. Therefore, the authors will primarily focus on discussing the score changes instead of the ranking changes from 2009. A more detailed overview of the countries' score changes for the IPRI and their components can also be found in Appendix I.

Figure 2: Ranking by IPRI Score

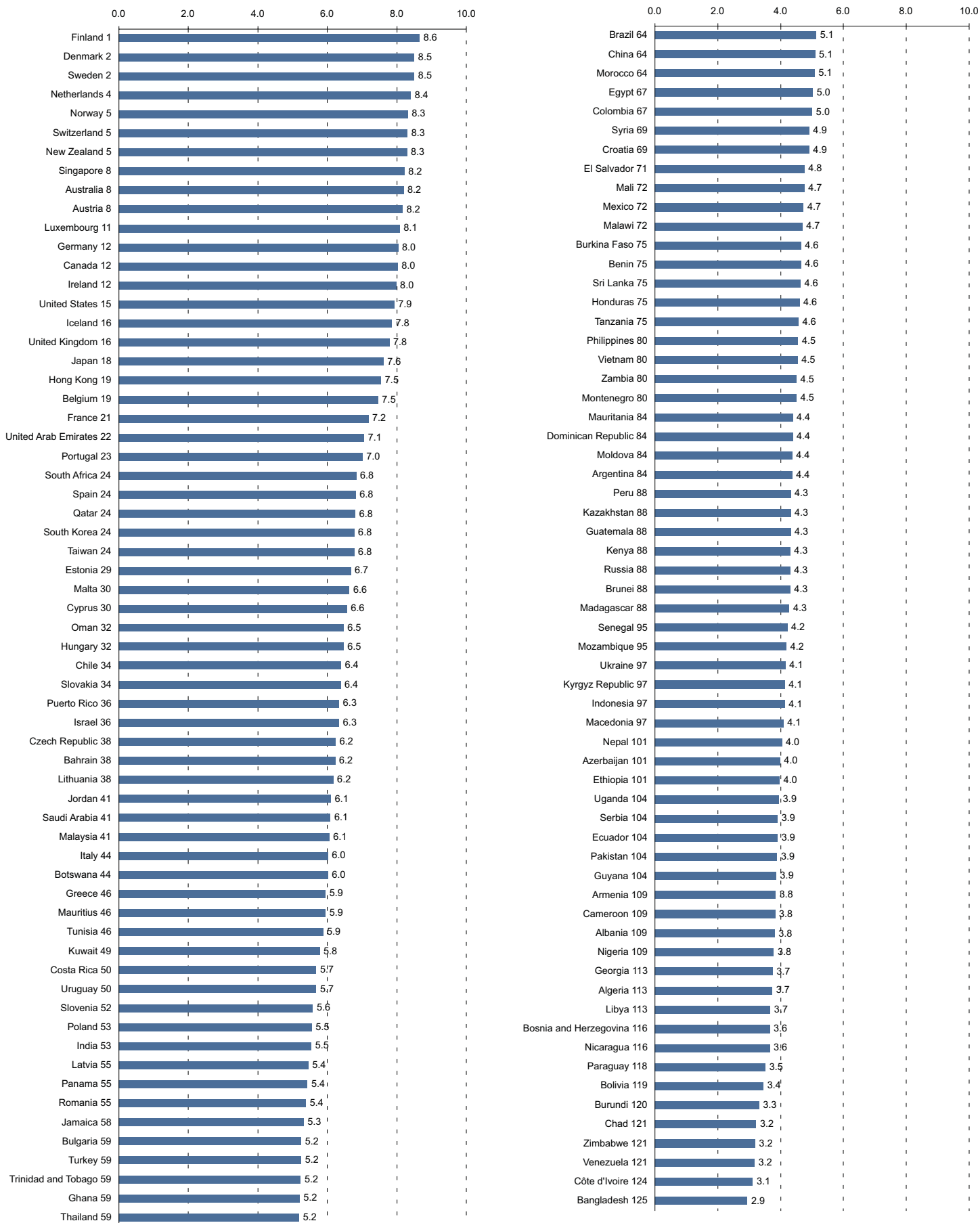


Table 1: Scores by Country

Country	IPRI	LP	PPR	IPR	Country	IPRI	LP	PPR	IPR
Albania	3.8	3.8	5.2	2.3	Libya	3.7	4.6	4.0	2.4
Algeria	3.7	3.5	4.3	3.4	Lithuania	6.2	5.7	6.9	5.9
Argentina	4.4	3.7	4.7	4.7	Luxembourg	8.1	8.5	7.8	8.0
Armenia	3.8	3.8	5.8	1.9	Macedonia	4.1	4.1	5.0	3.1
Australia	8.2	8.5	8.1	8.0	Madagascar	4.3	4.1	4.8	3.9
Austria	8.2	8.4	7.8	8.3	Malawi	4.7	5.0	5.1	3.9
Azerbaijan	4.0	3.6	5.7	2.6	Malaysia	6.1	5.7	6.7	5.8
Bahrain	6.2	5.7	7.4	5.5	Mali	4.7	4.4	5.1	4.8
Bangladesh	2.9	3.0	3.7	2.1	Malta	6.6	7.5	6.4	6.0
Belgium	7.5	7.4	6.9	8.1	Mauritania	4.4	3.3	5.2	4.7
Benin	4.6	4.6	4.7	4.7	Mauritius	5.9	6.6	6.4	4.9
Bolivia	3.4	3.0	4.0	3.4	Mexico	4.7	4.0	5.3	4.9
Bosnia and Herzegovina	3.6	3.8	4.4	2.7	Moldova	4.4	3.8	5.2	4.1
Botswana	6.0	6.9	6.9	4.3	Montenegro	4.5	4.9	6.2	2.4
Brazil	5.1	4.7	5.4	5.2	Morocco	5.1	4.5	5.9	4.8
Brunei	4.3	6.3	3.4	3.2	Mozambique	4.2	4.2	4.6	3.8
Bulgaria	5.2	4.6	6.0	5.1	Nepal	4.0	3.1	5.5	3.5
Burkina Faso	4.6	4.3	4.6	5.0	Netherlands	8.4	8.5	8.5	8.2
Burundi	3.3	2.5	4.3	3.1	New Zealand	8.3	8.8	8.2	7.9
Cameroon	3.8	3.0	4.6	3.8	Nicaragua	3.6	3.0	4.3	3.6
Canada	8.0	8.4	7.8	7.9	Nigeria	3.8	3.1	4.5	3.8
Chad	3.2	1.6	4.2	3.9	Norway	8.3	8.5	8.6	7.9
Chile	6.4	6.8	7.0	5.4	Oman	6.5	6.7	7.6	5.2
China	5.1	4.4	6.1	4.8	Pakistan	3.9	2.5	5.8	3.3
Colombia	5.0	3.8	5.9	5.3	Panama	5.4	4.3	6.9	5.0
Costa Rica	5.7	6.3	6.1	4.7	Paraguay	3.5	2.6	4.7	3.1
Croatia	4.9	5.1	5.1	4.5	Peru	4.3	3.6	5.8	3.6
Cyprus	6.6	6.9	6.8	6.0	Philippines	4.5	3.5	5.4	4.8
Czech Republic	6.2	6.1	6.0	6.6	Poland	5.5	5.7	4.8	6.1
Denmark	8.5	8.7	8.3	8.5	Portugal	7.0	7.1	6.9	7.0
Dominican Republic	4.4	4.0	5.2	3.9	Puerto Rico	6.3	6.2	6.2	6.7
Ecuador	3.9	2.7	4.5	4.4	Qatar	6.8	7.2	7.3	5.9
Egypt	5.0	4.7	5.7	4.7	Romania	5.4	4.8	5.6	5.8
El Salvador	4.8	4.3	6.0	4.0	Russia	4.3	3.3	5.0	4.6
Estonia	6.7	6.8	7.5	5.6	Saudi Arabia	6.1	5.4	7.3	5.5
Ethiopia	4.0	3.1	4.8	4.0	Senegal	4.2	4.0	4.6	4.1
Finland	8.6	8.9	8.6	8.5	Serbia	3.9	4.0	4.8	2.8
France	7.2	7.2	6.5	7.9	Singapore	8.2	8.5	8.3	7.9
Georgia	3.7	3.7	5.8	1.8	Slovakia	6.4	5.8	7.1	6.2
Germany	8.0	8.3	7.5	8.2	Slovenia	5.6	6.5	4.7	5.5
Ghana	5.2	4.9	5.5	5.2	South Africa	6.8	5.7	7.4	7.4
Greece	5.9	5.6	6.2	6.0	Spain	6.8	6.3	6.9	7.2
Guatemala	4.3	3.5	5.7	3.7	Sri Lanka	4.6	4.0	6.0	3.9
Guyana	3.9	3.7	5.2	2.7	Sweden	8.5	8.7	8.5	8.3
Honduras	4.6	3.6	5.9	4.2	Switzerland	8.3	8.7	7.9	8.3
Hong Kong	7.5	8.1	7.8	6.7	Syria	4.9	3.8	6.5	4.5
Hungary	6.5	6.1	6.6	6.7	Taiwan	6.8	6.3	7.3	6.7
Iceland	7.8	8.5	8.1	6.9	Tanzania	4.6	4.6	4.9	4.2
India	5.5	4.8	6.6	5.3	Thailand	5.2	4.4	6.9	4.3
Indonesia	4.1	3.7	5.5	3.2	Trinidad and Tobago	5.2	4.7	5.4	5.6
Ireland	8.0	8.3	7.8	7.9	Tunisia	5.9	5.7	7.0	4.9
Israel	6.3	5.9	6.2	6.9	Turkey	5.2	4.7	6.0	5.0
Italy	6.0	5.3	5.7	7.1	Uganda	3.9	3.6	3.8	4.4
Côte d'Ivoire	3.1	1.7	4.3	3.3	Ukraine	4.1	3.7	4.8	3.9
Jamaica	5.3	4.6	5.9	5.5	United Arab Emirates	7.1	6.8	7.7	6.7
Japan	7.6	7.4	7.1	8.3	United Kingdom	7.8	7.8	7.7	7.9
Jordan	6.1	5.7	6.9	5.7	United States	7.9	7.5	7.8	8.5
Kazakhstan	4.3	4.0	5.8	3.1	Uruguay	5.7	6.7	5.4	4.9
Kenya	4.3	3.0	6.0	4.0	Venezuela	3.2	1.9	4.4	3.2
South Korea	6.8	6.1	7.2	7.0	Vietnam	4.5	4.4	5.7	3.5
Kuwait	5.8	6.3	7.0	4.1	Zambia	4.5	4.4	5.8	3.3
Kyrgyz Republic	4.1	2.8	5.2	4.4	Zimbabwe	3.2	1.8	4.7	3.1
Latvia	5.4	5.6	6.3	4.4					

Table 2: Top 10 by Component (Number Indicates Rank)

IPRI	LP	PPR	IPR
Finland (1)	Finland (1)	Norway (1)	Denmark (1)
Denmark (2)	New Zealand (2)	Finland (1)	Finland (1)
Sweden (2)	Sweden (3)	Sweden (3)	United States (1)
Netherlands (4)	Denmark (3)	Netherlands (3)	Japan (4)
Norway (5)	Switzerland (5)	Denmark (5)	Switzerland (4)
Switzerland (5)	Iceland (6)	Singapore (5)	Austria (4)
New Zealand (5)	Netherlands (6)	New Zealand (7)	Sweden (4)
Singapore (8)	Singapore (6)	Australia (8)	Netherlands (8)
Australia (8)	Luxembourg (6)	Iceland (8)	Germany (8)
Austria (8)	Norway (6)	Switzerland (10)	Belgium (10)
		Australia (6)	

Table 3: Bottom 10 by Component (Number Indicates Rank)

IPRI	LP	PPR	IPR
Bosnia and Herzegovina (116)	Nicaragua (112)	Burundi (116)	Serbia (116)
Nicaragua (116)	Cameroon (112)	Côte d'Ivoire (116)	Bosnia and Herzegovina (117)
Paraguay (118)	Bangladesh (112)	Algeria (116)	Guyana (117)
Bolivia (119)	Kenya (112)	Nicaragua (116)	Azerbaijan (119)
Burundi (120)	Bolivia (112)	Chad (120)	Montenegro (120)
Chad (121)	Kyrgyz Republic (117)	Libya (121)	Libya (120)
Zimbabwe (121)	Ecuador (118)	Bolivia (121)	Albania (122)
Venezuela (121)	Paraguay (119)	Uganda (123)	Bangladesh (123)
Côte d'Ivoire (124)	Pakistan (120)	Bangladesh (124)	Armenia (124)
Bangladesh (125)	Burundi (120)	Brunei (125)	Georgia (125)
	Venezuela (122)		
	Zimbabwe (123)		
	Côte d'Ivoire (124)		
	Chad (125)		

Finland leads the country list a fourth year in a row with a score of 8.6 out of a possible 10. This is despite the fact that it scored 8.7 last year. In 2010, its score returned to the level found in the 2008 and 2007 reports. Overall, the Scandinavian countries continue to dominate the top of the rankings with Denmark and Sweden occupying the second position with a score of 8.5. Norway takes fifth place with a score of 8.3. Other countries in the top 10 (see [Table 2](#)) are Western European countries, including the Netherlands (8.4), Switzerland (8.3), and Austria (8.2). New Zealand (8.3) outranks its counterparts from the Asia and Oceania region; both Australia and Singapore have a score of 8.2.

At the bottom of the ladder are Bosnia and Herzegovina (3.6), Nicaragua (3.6), Paraguay (3.5), Bolivia (3.4), Burundi (3.3), Chad (3.2), Zimbabwe (3.2), Venezuela (3.2), and Côte d'Ivoire (3.1). Bangladesh scored the lowest among all countries again with a score of 2.9 (see [Table 3](#)). It does, however, present an improvement from last year's score of 2.6.

Figure 3: IPRI Ranking by Quintile

	Top 20 percent	2nd Quintile	3rd Quintile	4th Quintile	Bottom 20 percent
strongest ↓ weakest	Finland	Qatar	Uruguay	Benin	Nepal
	Denmark	South Korea	Slovenia	Sri Lanka	Azerbaijan
	Sweden	Taiwan	Poland	Honduras	Ethiopia
	Netherlands	Estonia	India	Tanzania	Uganda
	Norway	Malta	Latvia	Philippines	Serbia
	Switzerland	Cyprus	Panama	Vietnam	Ecuador
	New Zealand	Oman	Romania	Zambia	Pakistan
	Singapore	Hungary	Jamaica	Montenegro	Guyana
	Australia	Chile	Bulgaria	Mauritania	Armenia
	Austria	Slovakia	Turkey	Dominican Republic	Cameroon
	Luxembourg	Puerto Rico	Trinidad and Tobago	Moldova	Albania
	Germany	Israel	Ghana	Argentina	Nigeria
	Canada	Czech Republic	Thailand	Peru	Georgia
	Ireland	Bahrain	Brazil	Kazakhstan	Algeria
	United States	Lithuania	China	Guatemala	Libya
	Iceland	Jordan	Morocco	Kenya	Bosnia and Herzegovina
	United Kingdom	Saudi Arabia	Egypt	Russia	Nicaragua
	Japan	Malaysia	Colombia	Brunei	Paraguay
	Hong Kong	Italy	Syria	Madagascar	Bolivia
	Belgium	Botswana	Croatia	Senegal	Burundi
	France	Greece	El Salvador	Mozambique	Chad
	United Arab Emirates	Mauritius	Mali	Ukraine	Zimbabwe
	Portugal	Tunisia	Mexico	Kyrgyz Republic	Venezuela
	South Africa	Kuwait	Malawi	Indonesia	Côte d'Ivoire
	Spain	Costa Rica	Burkina Faso	Macedonia	Bangladesh

[Figure 3](#) presents the IPRI rankings by quintile. The color prism relates the quintiles to a specified color: purple for the top quintile, blue for the second quintile, green for the third, yellow for the fourth, and red for the bottom quintile. This year, countries are evenly distributed among quintiles with 25 countries in each. Additionally, the map on IPRI's distribution, displayed in the inside cover of this report, indicates which country belongs to which quintile. Again, because of the increased country coverage this year, it is difficult to compare directly any changes in quintile position from last year to this year.

Table 4: Summary Statistics

Indicator	Mean	Median	Deviation	Minimum	Maximum
IPRI	5.5	5.2	1.5	2.9	8.6
LP	5.2	4.7	1.9	1.6	8.9
PPR	6.0	5.9	1.3	3.4	8.6
IPR	5.1	4.8	1.8	1.8	8.5

Table 4 presents summary statistics for the 2010 IPRI and its component scores. Despite an improvement in some of the scores at the bottom of the IPRI ranking, there remains a large disparity between the highest and worst performing countries.

This year's highest score in any one of the core components is Finland's score of 8.9 in Legal and Political Environment (LP). The lowest score in any of the core components is 1.6 in Chad's LP score. The highest mean score component is Physical Property Rights (PPR) at 6.0.

Ranking by Index Core Components

This index is comprised of three core components that can be used independently to assess a country's performance. This section presents and discusses countries' performance in each core component of the index.

Tables 2 and 3 also show the top 10 and bottom 10 countries for each of the IPRI's components. The top 10 lists, generally, are more homogenous than the bottom 10 with Finland ranking first in all three components. Denmark, the Netherlands, Sweden, and Switzerland also place in the top 10 in all three components. Importantly, the only country that places in the top 10 in one of the components while not being in the top 10 of the IPRI ranking is the United States. Its score of 8.5 places it in the top of the IPR component ranking, while its overall IPRI score of 7.9 places it at only 15th place in the overall IPRI ranking.

The bottom 10 lists are much more heterogeneous. Chad ranks the lowest in the LP component, Brunei in the PPR, and Georgia in the IPR component. Both Brunei and Georgia are new countries to the IPRI report.

Figures 4, 5, and 6 give a complete rank ordering of the entire 125 country set according to the three core components of the IPRI.

Changes in Scores (2009-2010)

As was mentioned previously, a direct comparison of the rankings between 2009 and 2010 is hindered by the fact that 10 countries were added to the ranking in 2010. As a result, some changes in ranks could reflect changes in the population of countries instead of the countries' performance compared with last year. To facilitate comparison of the results between 2009 and 2010, the authors compiled Tables 5-8, which present the changes in scores for the IPRI as well as their components.

The countries that have improved their IPRI score the most since 2009 are a diverse group of countries. These include Montenegro, Azerbaijan, Zambia, Romania, Bangladesh, China, Egypt, Bosnia and Herzegovina, Albania, and Macedonia. Unfortunately, the following countries experienced a retreat in property rights: Chile, South Korea, Italy, Germany, Israel, Thailand, Iceland, Malaysia, Algeria, and Mauritania

Figure 4: Ranking by LP Score

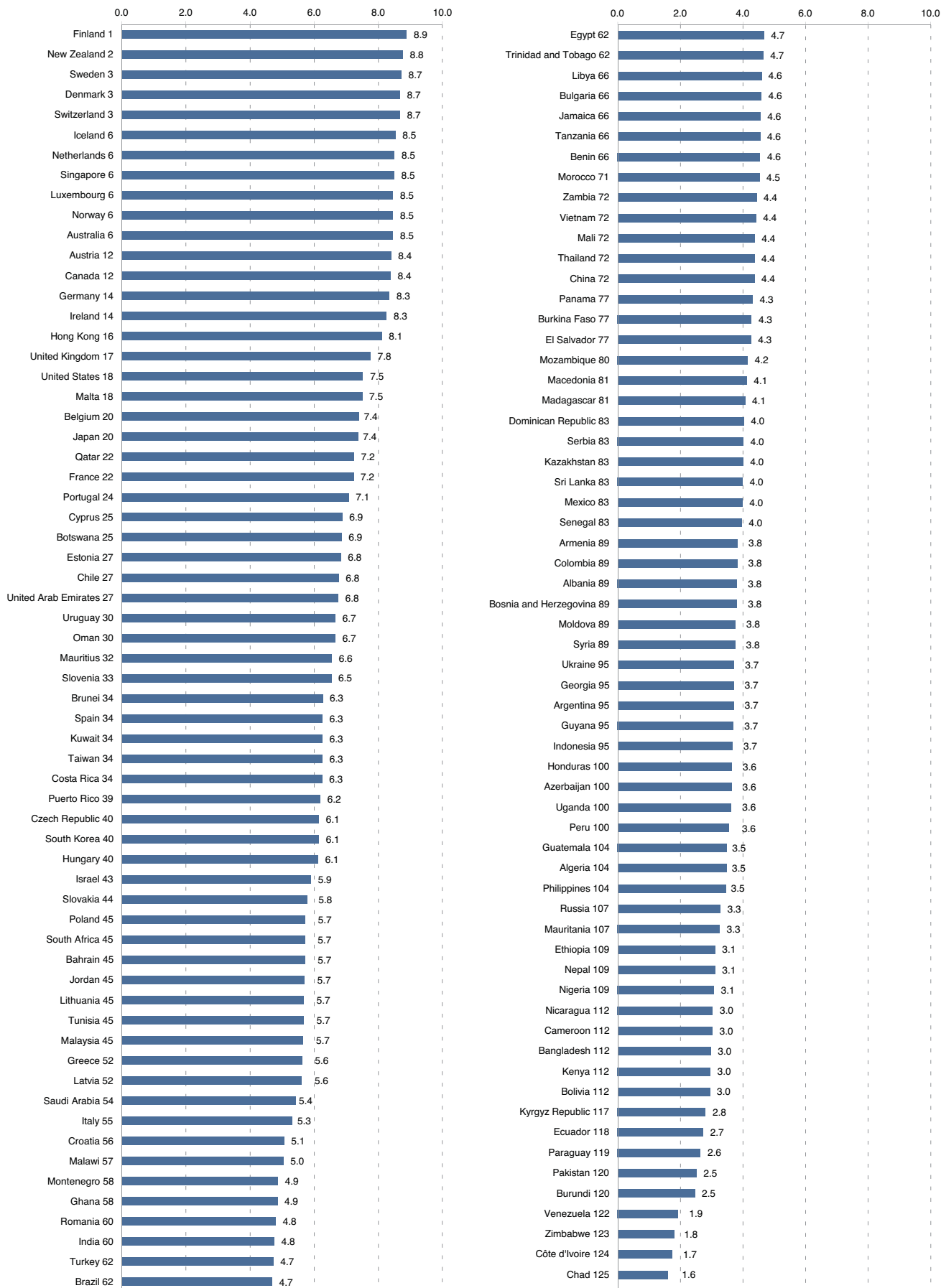


Figure 5: Ranking by PPR Score

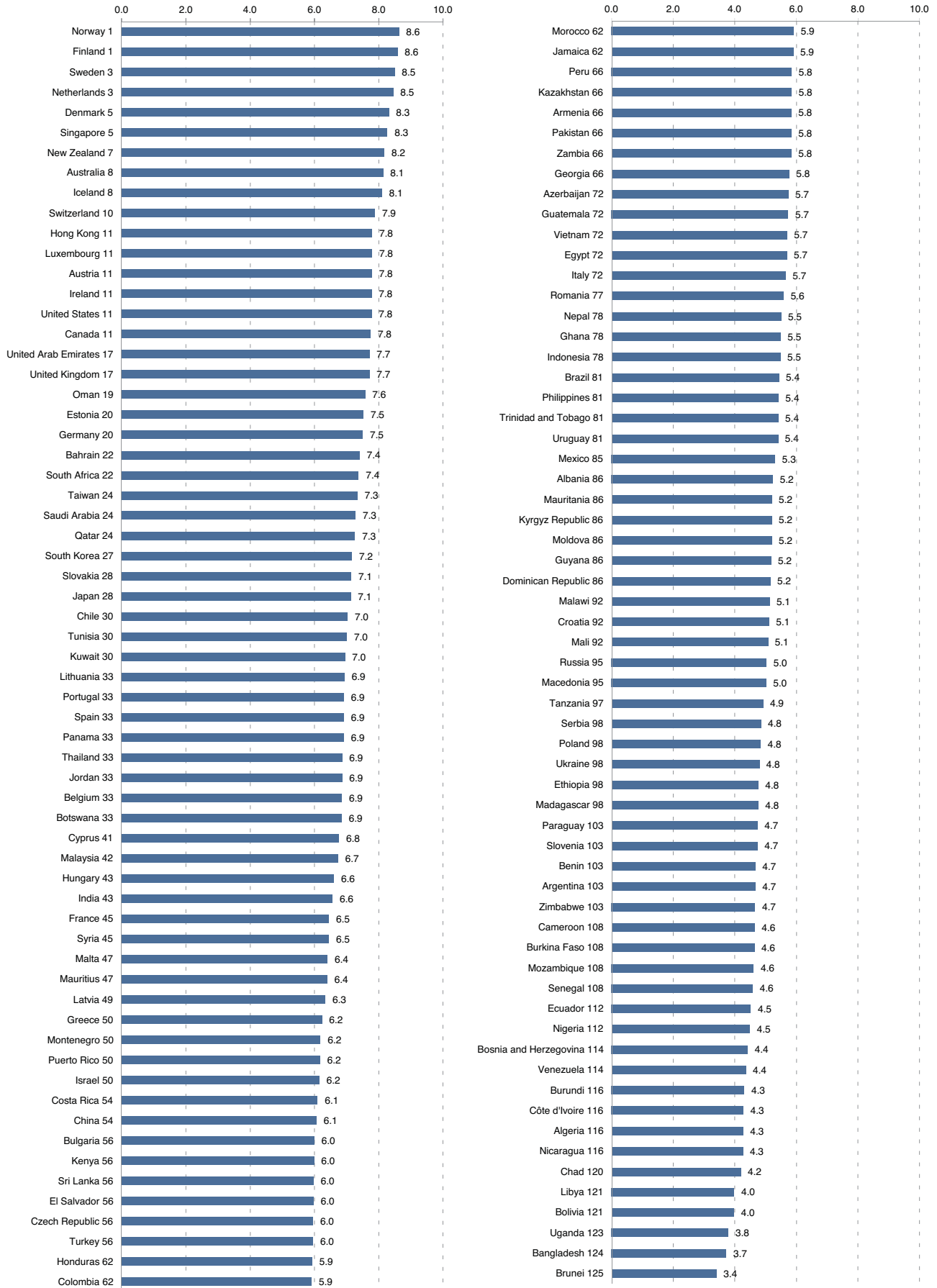


Figure 6: Ranking by IPR Score

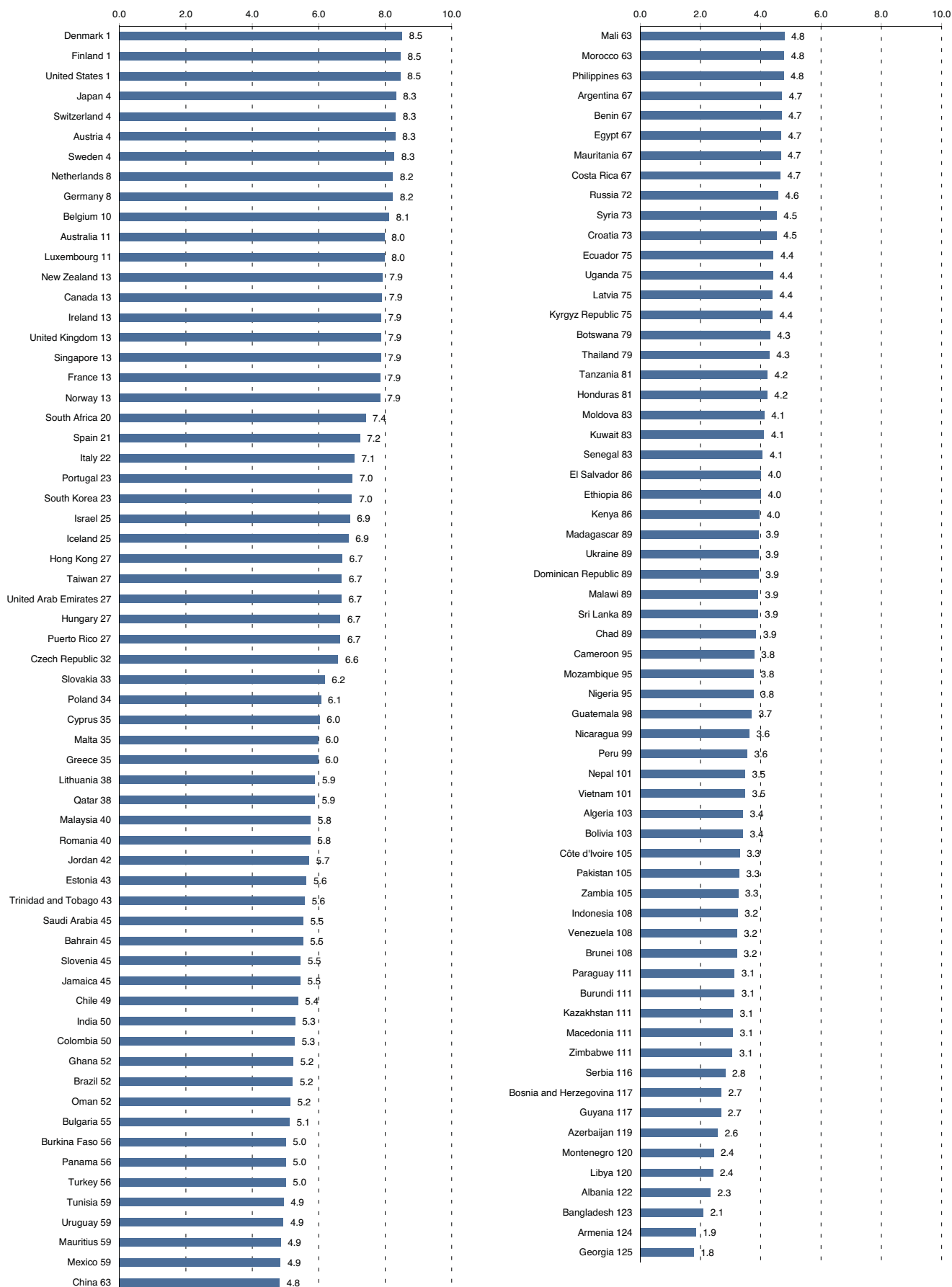


Table 5: Changes in the IPRI Score (2009-2010)

County	Change	IPRI 2010	IPRI 2009	County	Change	IPRI 2010	IPRI 2009
Montenegro	0.6	4.5	3.9	Argentina	0.0	4.4	4.4
Azerbaijan	0.5	4.0	3.4	Tanzania	0.0	4.6	4.6
Zambia	0.5	4.5	4.0	Burkina Faso	0.0	4.6	4.7
Romania	0.5	5.4	4.9	Sweden	0.0	8.5	8.5
Bangladesh	0.4	2.9	2.6	Nicaragua	0.0	3.6	3.7
China	0.4	5.1	4.7	Ireland	0.0	8.0	8.0
Egypt	0.3	5.0	4.7	Philippines	0.0	4.5	4.6
Bosnia and Herzegovina	0.3	3.6	3.3	Cameroon	0.0	3.8	3.8
Albania	0.3	3.8	3.5	Denmark	0.0	8.5	8.5
Macedonia	0.3	4.1	3.8	Zimbabwe	0.0	3.2	3.2
Brazil	0.3	5.1	4.9	Belgium	0.0	7.5	7.5
Cyprus	0.3	6.6	6.3	Finland	0.0	8.6	8.7
Nigeria	0.2	3.8	3.5	Netherlands	0.0	8.4	8.4
Lithuania	0.2	6.2	5.9	Spain	0.0	6.8	6.8
Serbia	0.2	3.9	3.7	Morocco	0.0	5.1	5.1
Botswana	0.2	6.0	5.8	Guatemala	0.0	4.3	4.3
Moldova	0.2	4.4	4.1	Sri Lanka	0.0	4.6	4.7
Ethiopia	0.2	4.0	3.8	Japan	0.0	7.6	7.6
Qatar	0.2	6.8	6.6	Slovenia	0.0	5.6	5.6
Mauritius	0.2	5.9	5.7	Chad	0.0	3.2	3.3
Bahrain	0.2	6.2	6.0	Mozambique	-0.1	4.2	4.2
Kazakhstan	0.2	4.3	4.1	Croatia	-0.1	4.9	5.0
Poland	0.2	5.5	5.4	Mali	-0.1	4.7	4.8
United States	0.2	7.9	7.8	Greece	-0.1	5.9	6.0
Jordan	0.2	6.1	5.9	Turkey	-0.1	5.2	5.3
Czech Republic	0.1	6.2	6.1	Tunisia	-0.1	5.9	6.0
Kyrgyz Republic	0.1	4.1	4.0	New Zealand	-0.1	8.3	8.4
Armenia	0.1	3.8	3.7	Switzerland	-0.1	8.3	8.4
Bulgaria	0.1	5.2	5.1	El Salvador	-0.1	4.8	4.8
Honduras	0.1	4.6	4.5	Benin	-0.1	4.6	4.7
Singapore	0.1	8.2	8.1	Venezuela	-0.1	3.2	3.3
United Arab Emirates	0.1	7.1	6.9	Ecuador	-0.1	3.9	4.0
Vietnam	0.1	4.5	4.4	Hungary	-0.1	6.5	6.6
Russia	0.1	4.3	4.2	Ukraine	-0.1	4.1	4.3
Peru	0.1	4.3	4.2	Pakistan	-0.1	3.9	4.0
Kuwait	0.1	5.8	5.7	Dominican Republic	-0.1	4.4	4.5
Uruguay	0.1	5.7	5.6	Portugal	-0.1	7.0	7.1
Hong Kong	0.1	7.5	7.4	Mexico	-0.2	4.7	4.9
Colombia	0.1	5.0	4.9	Bolivia	-0.2	3.4	3.6
Trinidad and Tobago	0.1	5.2	5.1	India	-0.2	5.5	5.7
Kenya	0.1	4.3	4.2	Chile	-0.2	6.4	6.6
Canada	0.1	8.0	7.9	South Korea	-0.2	6.8	6.9
Guyana	0.1	3.9	3.8	Italy	-0.2	6.0	6.2
Panama	0.1	5.4	5.3	Germany	-0.2	8.0	8.2
Luxembourg	0.1	8.1	8.0	Israel	-0.2	6.3	6.6
Australia	0.1	8.2	8.1	Thailand	-0.2	5.2	5.4
Burundi	0.1	3.3	3.2	Iceland	-0.3	7.8	8.1
Nepal	0.1	4.0	4.0	Malaysia	-0.3	6.1	6.3
Estonia	0.1	6.7	6.6	Algeria	-0.3	3.7	4.0
France	0.1	7.2	7.1	Mauritania	-0.4	4.4	4.8
Latvia	0.1	5.4	5.4	Brunei	-	4.3	-
Slovakia	0.0	6.4	6.3	Georgia	-	3.7	-
Taiwan	0.0	6.8	6.7	Ghana	-	5.2	-
Malta	0.0	6.6	6.6	Côte d'Ivoire	-	3.1	-
Jamaica	0.0	5.3	5.3	Libya	-	3.7	-
Paraguay	0.0	3.5	3.5	Malawi	-	4.7	-
Austria	0.0	8.2	8.1	Oman	-	6.5	-
Madagascar	0.0	4.3	4.2	Puerto Rico	-	6.3	-
South Africa	0.0	6.8	6.8	Saudi Arabia	-	6.1	-
Costa Rica	0.0	5.7	5.7	Senegal	-	4.2	-
Norway	0.0	8.3	8.3	Syria	-	4.9	-
Indonesia	0.0	4.1	4.1	Uganda	-	3.9	-
United Kingdom	0.0	7.8	7.8				

Table 6: Changes in the LP Score (2009-2010)

County	Change	LP 2010	LP 2009	County	Change	LP 2010	LP 2009
Montenegro	0.8	4.9	4.1	Cameroon	0.0	3.0	3.0
Brazil	0.5	4.7	4.2	Ukraine	0.0	3.7	3.7
Azerbaijan	0.5	3.6	3.2	Estonia	0.0	6.8	6.9
Nigeria	0.4	3.1	2.7	Nicaragua	0.0	3.0	3.1
Poland	0.4	5.7	5.3	Ecuador	0.0	2.7	2.8
Serbia	0.4	4.0	3.6	Luxembourg	0.0	8.5	8.5
United States	0.4	7.5	7.1	Benin	0.0	4.6	4.6
Indonesia	0.4	3.7	3.3	Mali	0.0	4.4	4.4
Taiwan	0.4	6.3	5.9	Kuwait	0.0	6.3	6.3
China	0.3	4.4	4.0	Venezuela	0.0	1.9	2.0
Kyrgyz Republic	0.3	2.8	2.5	New Zealand	0.0	8.8	8.8
Macedonia	0.3	4.1	3.8	Guyana	0.0	3.7	3.7
Zambia	0.3	4.4	4.1	Austria	0.0	8.4	8.4
Hong Kong	0.3	8.1	7.8	Costa Rica	0.0	6.3	6.3
Mauritius	0.3	6.6	6.3	Slovenia	0.0	6.5	6.6
Qatar	0.3	7.2	7.0	Nepal	0.0	3.1	3.2
Cyprus	0.3	6.9	6.6	Belgium	0.0	7.4	7.4
Romania	0.3	4.8	4.5	Bosnia and Herzegovina	-0.1	3.8	3.9
Peru	0.3	3.6	3.3	Portugal	-0.1	7.1	7.1
Albania	0.3	3.8	3.6	Finland	-0.1	8.9	8.9
Singapore	0.3	8.5	8.2	Japan	-0.1	7.4	7.4
Bangladesh	0.2	3.0	2.8	Turkey	-0.1	4.7	4.8
Moldova	0.2	3.8	3.6	Trinidad and Tobago	-0.1	4.7	4.7
Kazakhstan	0.2	4.0	3.8	Malta	-0.1	7.5	7.6
Spain	0.2	6.3	6.1	Norway	-0.1	8.5	8.5
Bahrain	0.2	5.7	5.5	Tunisia	-0.1	5.7	5.8
Czech Republic	0.2	6.1	6.0	Mexico	-0.1	4.0	4.1
Slovakia	0.2	5.8	5.6	Paraguay	-0.1	2.6	2.8
Colombia	0.2	3.8	3.7	Kenya	-0.1	3.0	3.1
Uruguay	0.2	6.7	6.5	Latvia	-0.1	5.6	5.7
Chile	0.2	6.8	6.6	Israel	-0.1	5.9	6.0
Russia	0.1	3.3	3.1	Argentina	-0.1	3.7	3.8
Ethiopia	0.1	3.1	3.0	Thailand	-0.1	4.4	4.5
Armenia	0.1	3.8	3.7	South Korea	-0.1	6.1	6.3
Panama	0.1	4.3	4.2	Dominican Republic	-0.1	4.0	4.2
United Arab Emirates	0.1	6.8	6.6	India	-0.1	4.8	4.9
Philippines	0.1	3.5	3.3	Switzerland	-0.1	8.7	8.8
Burundi	0.1	2.5	2.3	Bolivia	-0.2	3.0	3.1
France	0.1	7.2	7.1	Zimbabwe	-0.2	1.8	2.0
Mozambique	0.1	4.2	4.1	Pakistan	-0.2	2.5	2.7
Botswana	0.1	6.9	6.7	United Kingdom	-0.2	7.8	7.9
Australia	0.1	8.5	8.4	Algeria	-0.2	3.5	3.7
Lithuania	0.1	5.7	5.6	Madagascar	-0.2	4.1	4.3
Guatemala	0.1	3.5	3.4	Chad	-0.2	1.6	1.8
Burkina Faso	0.1	4.3	4.2	South Africa	-0.2	5.7	6.0
Netherlands	0.1	8.5	8.4	Greece	-0.2	5.6	5.9
Ireland	0.1	8.3	8.2	Italy	-0.3	5.3	5.6
Morocco	0.1	4.5	4.5	Malaysia	-0.3	5.7	6.0
Croatia	0.1	5.1	5.0	Iceland	-0.5	8.5	9.0
Bulgaria	0.1	4.6	4.5	Mauritania	-0.8	3.3	4.0
Canada	0.1	8.4	8.3	Brunei	-	6.3	-
Vietnam	0.0	4.4	4.4	Georgia	-	3.7	-
Egypt	0.0	4.7	4.6	Ghana	-	4.9	-
Tanzania	0.0	4.6	4.5	Côte d'Ivoire	-	1.7	-
Jamaica	0.0	4.6	4.5	Libya	-	4.6	-
Jordan	0.0	5.7	5.6	Malawi	-	5.0	-
Sweden	0.0	8.7	8.7	Oman	-	6.7	-
Hungary	0.0	6.1	6.1	Puerto Rico	-	6.2	-
El Salvador	0.0	4.3	4.2	Saudi Arabia	-	5.4	-
Germany	0.0	8.3	8.3	Senegal	-	4.0	-
Honduras	0.0	3.6	3.6	Syria	-	3.8	-
Denmark	0.0	8.7	8.7	Uganda	-	3.6	-
Sri Lanka	0.0	4.0	4.0				

Table 7: Changes in the PPR Score (2009-2010)

County	Change	PPR 2010	PPR 2009	County	Change	PPR 2010	PPR 2009
Bosnia and Herzegovina	1.1	4.4	3.4	Nicaragua	0.0	4.3	4.3
Bangladesh	0.9	3.7	2.8	Greece	0.0	6.2	6.2
Zambia	0.7	5.8	5.1	United Arab Emirates	0.0	7.7	7.7
Azerbaijan	0.7	5.7	5.1	United States	0.0	7.8	7.8
Egypt	0.6	5.7	5.1	Denmark	0.0	8.3	8.3
Romania	0.6	5.6	5.0	Slovenia	0.0	4.7	4.8
United Kingdom	0.6	7.7	7.1	Slovakia	0.0	7.1	7.2
Madagascar	0.5	4.8	4.3	Kuwait	0.0	7.0	7.0
Montenegro	0.5	6.2	5.7	Lithuania	0.0	6.9	7.0
China	0.4	6.1	5.6	France	0.0	6.5	6.5
Botswana	0.4	6.9	6.5	Chile	0.0	7.0	7.1
Cyprus	0.4	6.8	6.4	Poland	0.0	4.8	4.9
Bulgaria	0.3	6.0	5.7	Hong Kong	0.0	7.8	7.8
Macedonia	0.3	5.0	4.7	Sweden	0.0	8.5	8.5
Albania	0.3	5.2	4.9	Mauritania	-0.1	5.2	5.3
Mauritius	0.3	6.4	6.1	Norway	-0.1	8.6	8.7
Kenya	0.3	6.0	5.7	Sri Lanka	-0.1	6.0	6.0
Brazil	0.3	5.4	5.2	Austria	-0.1	7.8	7.9
Honduras	0.3	5.9	5.7	Hungary	-0.1	6.6	6.7
South Africa	0.3	7.4	7.1	Dominican Republic	-0.1	5.2	5.2
Trinidad and Tobago	0.3	5.4	5.2	El Salvador	-0.1	6.0	6.1
Peru	0.2	5.8	5.6	Benin	-0.1	4.7	4.8
Czech Republic	0.2	6.0	5.7	Switzerland	-0.1	7.9	8.0
Canada	0.2	7.8	7.5	Malaysia	-0.1	6.7	6.8
Luxembourg	0.2	7.8	7.6	Netherlands	-0.1	8.5	8.6
Armenia	0.2	5.8	5.6	Mali	-0.1	5.1	5.2
Ethiopia	0.2	4.8	4.6	Philippines	-0.1	5.4	5.5
Jordan	0.2	6.9	6.7	Tunisia	-0.1	7.0	7.1
Vietnam	0.2	5.7	5.5	Japan	-0.1	7.1	7.3
Tanzania	0.2	4.9	4.7	Mexico	-0.1	5.3	5.4
Guyana	0.2	5.2	5.0	Ecuador	-0.1	4.5	4.7
Kyrgyz Republic	0.2	5.2	5.0	South Korea	-0.2	7.2	7.3
Kazakhstan	0.2	5.8	5.7	Thailand	-0.2	6.9	7.0
Argentina	0.2	4.7	4.5	Croatia	-0.2	5.1	5.3
Moldova	0.2	5.2	5.0	New Zealand	-0.2	8.2	8.4
Malta	0.2	6.4	6.3	Pakistan	-0.2	5.8	6.0
Costa Rica	0.1	6.1	6.0	Indonesia	-0.2	5.5	5.7
Burkina Faso	0.1	4.6	4.5	Ireland	-0.2	7.8	8.0
Cameroon	0.1	4.6	4.5	Mozambique	-0.2	4.6	4.8
Russia	0.1	5.0	4.9	Venezuela	-0.2	4.4	4.6
Zimbabwe	0.1	4.7	4.5	India	-0.2	6.6	6.8
Serbia	0.1	4.8	4.7	Spain	-0.2	6.9	7.2
Estonia	0.1	7.5	7.4	Turkey	-0.2	6.0	6.2
Colombia	0.1	5.9	5.8	Bolivia	-0.3	4.0	4.3
Uruguay	0.1	5.4	5.3	Italy	-0.3	5.7	6.0
Ukraine	0.1	4.8	4.7	Portugal	-0.4	6.9	7.3
Panama	0.1	6.9	6.8	Iceland	-0.4	8.1	8.5
Chad	0.1	4.2	4.1	Algeria	-0.4	4.3	4.7
Nigeria	0.1	4.5	4.4	Germany	-0.4	7.5	7.9
Qatar	0.1	7.3	7.2	Israel	-0.5	6.2	6.7
Latvia	0.1	6.3	6.3	Brunei	-	3.4	-
Finland	0.1	8.6	8.5	Georgia	-	5.8	-
Belgium	0.1	6.9	6.8	Ghana	-	5.5	-
Singapore	0.1	8.3	8.2	Côte d'Ivoire	-	4.3	-
Jamaica	0.1	5.9	5.8	Libya	-	4.0	-
Taiwan	0.1	7.3	7.3	Malawi	-	5.1	-
Morocco	0.1	5.9	5.9	Oman	-	7.6	-
Nepal	0.0	5.5	5.5	Puerto Rico	-	6.2	-
Guatemala	0.0	5.7	5.7	Saudi Arabia	-	7.3	-
Bahrain	0.0	7.4	7.4	Senegal	-	4.6	-
Australia	0.0	8.1	8.1	Syria	-	6.5	-
Paraguay	0.0	4.7	4.7	Uganda	-	3.8	-
Burundi	0.0	4.3	4.3				

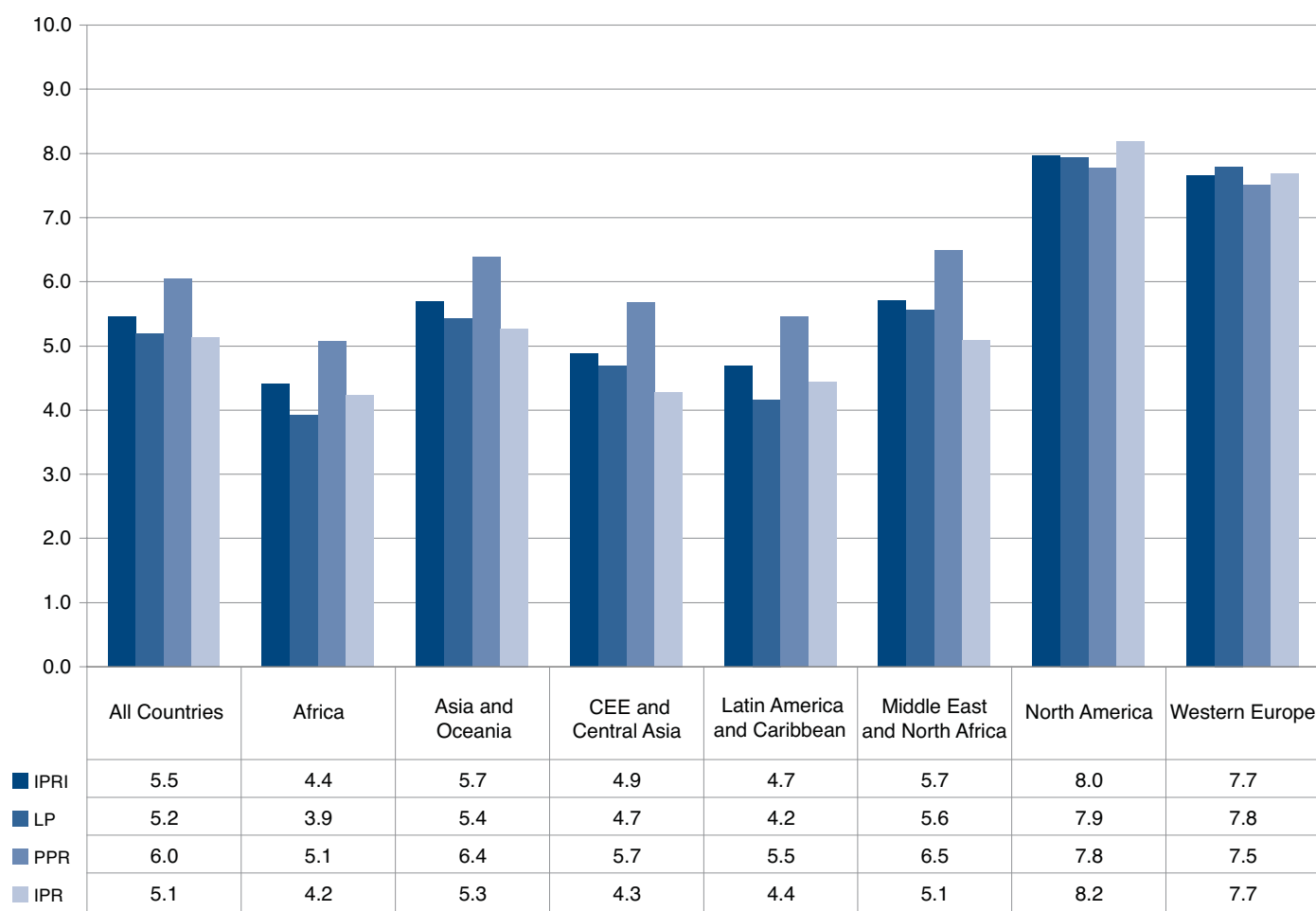
Table 8: Changes in the IPR Score (2009-2010)

County	Change	IPR 2010	IPR 2009	County	Change	IPR 2010	IPR 2009
Lithuania	0.7	5.9	5.2	Slovakia	0.0	6.2	6.2
Romania	0.6	5.8	5.2	Nicaragua	0.0	3.6	3.6
Montenegro	0.5	2.4	1.9	Tunisia	0.0	4.9	5.0
Azerbaijan	0.5	2.6	2.1	New Zealand	0.0	7.9	7.9
Zambia	0.4	3.3	2.8	Bolivia	0.0	3.4	3.4
Kuwait	0.4	4.1	3.7	Sweden	0.0	8.3	8.3
Egypt	0.4	4.7	4.3	Zimbabwe	0.0	3.1	3.1
China	0.3	4.8	4.5	Spain	0.0	7.2	7.3
Bahrain	0.3	5.5	5.2	Philippines	0.0	4.8	4.8
Ethiopia	0.3	4.0	3.7	Denmark	0.0	8.5	8.6
Moldova	0.3	4.1	3.9	Venezuela	0.0	3.2	3.3
United Arab Emirates	0.3	6.7	6.4	Canada	-0.1	7.9	8.0
Qatar	0.3	5.9	5.6	Argentina	-0.1	4.7	4.8
Albania	0.2	2.3	2.1	Sri Lanka	-0.1	3.9	4.0
Nepal	0.2	3.5	3.3	Netherlands	-0.1	8.2	8.3
Serbia	0.2	2.8	2.6	Slovenia	-0.1	5.5	5.5
Nigeria	0.2	3.8	3.6	Israel	-0.1	6.9	7.0
Jordan	0.2	5.7	5.5	Mali	-0.1	4.8	4.8
Botswana	0.2	4.3	4.1	Kyrgyz Republic	-0.1	4.4	4.5
Austria	0.2	8.3	8.1	Bosnia and Herzegovina	-0.1	2.7	2.8
Latvia	0.2	4.4	4.2	Mozambique	-0.1	3.8	3.9
Paraguay	0.2	3.1	3.0	Costa Rica	-0.1	4.7	4.7
Cyprus	0.2	6.0	5.9	Finland	-0.1	8.5	8.6
Macedonia	0.1	3.1	2.9	Belgium	-0.1	8.1	8.2
Norway	0.1	7.9	7.7	Croatia	-0.1	4.5	4.6
Vietnam	0.1	3.5	3.4	Peru	-0.1	3.6	3.7
Kazakhstan	0.1	3.1	3.0	Ecuador	-0.1	4.4	4.6
Estonia	0.1	5.6	5.5	India	-0.2	5.3	5.4
Iceland	0.1	6.9	6.8	Benin	-0.2	4.7	4.8
United States	0.1	8.5	8.4	Dominican Republic	-0.2	3.9	4.1
Poland	0.1	6.1	6.0	Cameroon	-0.2	3.8	4.0
Japan	0.1	8.3	8.2	Indonesia	-0.2	3.2	3.4
France	0.1	7.9	7.8	Madagascar	-0.2	3.9	4.1
Russia	0.1	4.6	4.5	El Salvador	-0.2	4.0	4.2
Turkey	0.1	5.0	4.9	Morocco	-0.2	4.8	5.0
Honduras	0.1	4.2	4.1	South Korea	-0.2	7.0	7.2
Armenia	0.1	1.9	1.8	Guatemala	-0.2	3.7	3.9
Trinidad and Tobago	0.1	5.6	5.5	Burkina Faso	-0.2	5.0	5.3
Singapore	0.1	7.9	7.8	Tanzania	-0.2	4.2	4.5
Kenya	0.1	4.0	3.9	Germany	-0.3	8.2	8.5
Australia	0.1	8.0	7.9	Mexico	-0.3	4.9	5.1
Ireland	0.1	7.9	7.8	Algeria	-0.3	3.4	3.7
Guyana	0.1	2.7	2.6	Taiwan	-0.3	6.7	7.0
Burundi	0.1	3.1	3.1	Hungary	-0.3	6.7	6.9
Czech Republic	0.1	6.6	6.5	Mauritania	-0.4	4.7	5.0
South Africa	0.0	7.4	7.4	United Kingdom	-0.4	7.9	8.3
Malta	0.0	6.0	6.0	Thailand	-0.4	4.3	4.7
Hong Kong	0.0	6.7	6.7	Ukraine	-0.4	3.9	4.3
Bulgaria	0.0	5.1	5.1	Malaysia	-0.4	5.8	6.2
Portugal	0.0	7.0	7.0	Chile	-0.6	5.4	6.0
Luxembourg	0.0	8.0	7.9	Brunei	-	3.2	-
Uruguay	0.0	4.9	4.9	Georgia	-	1.8	-
Greece	0.0	6.0	6.0	Ghana	-	5.2	-
Bangladesh	0.0	2.1	2.1	Côte d'Ivoire	-	3.3	-
Colombia	0.0	5.3	5.3	Libya	-	2.4	-
Jamaica	0.0	5.5	5.4	Malawi	-	3.9	-
Chad	0.0	3.9	3.8	Oman	-	5.2	-
Brazil	0.0	5.2	5.2	Puerto Rico	-	6.7	-
Pakistan	0.0	3.3	3.3	Saudi Arabia	-	5.5	-
Italy	0.0	7.1	7.1	Senegal	-	4.1	-
Panama	0.0	5.0	5.0	Syria	-	4.5	-
Mauritius	0.0	4.9	4.9	Uganda	-	4.4	-
Switzerland	0.0	8.3	8.3				

Regional Distribution of IPRI

Figure 7 presents the average scores by region and component in the 2010 IPRI report. Since 2009, some changes have been made to regional assignments of countries to reflect economic and cultural ties better. The most noted change is Mexico's reassignment from North America to Latin America and Caribbean. Mexico is not only culturally closer to Latin America and Caribbean, but removing it from North America allows us to see clearly North America's strongest position in all three components. Similarly, Malta was reassigned to Western Europe from its former position in the Middle East and North Africa. Appendix III presents the updated regional assignments.

Figure 7: Average Scores by Region and Component



IPRI and Economic Outcomes

The underlining assumption of this study is the correlation between an effective property rights regime and its significant impact on the economic performance of a country. In fact, we find that according to the distribution of average income among countries in the IPRI quintiles, the countries with stronger property rights scores tend to be the nations with higher per capita incomes. The countries with weaker property rights scores have lower per capita incomes. Additionally, countries with stronger property rights regimes attract more foreign direct investment (FDI). Finally, developing countries with stronger property rights have higher per capita GDP growth than those that fail to respect property rights. This observation is especially important considering the role that property rights can play to alleviate poverty.

Figure 8: Average Per Capita Income by IPRI Quintile

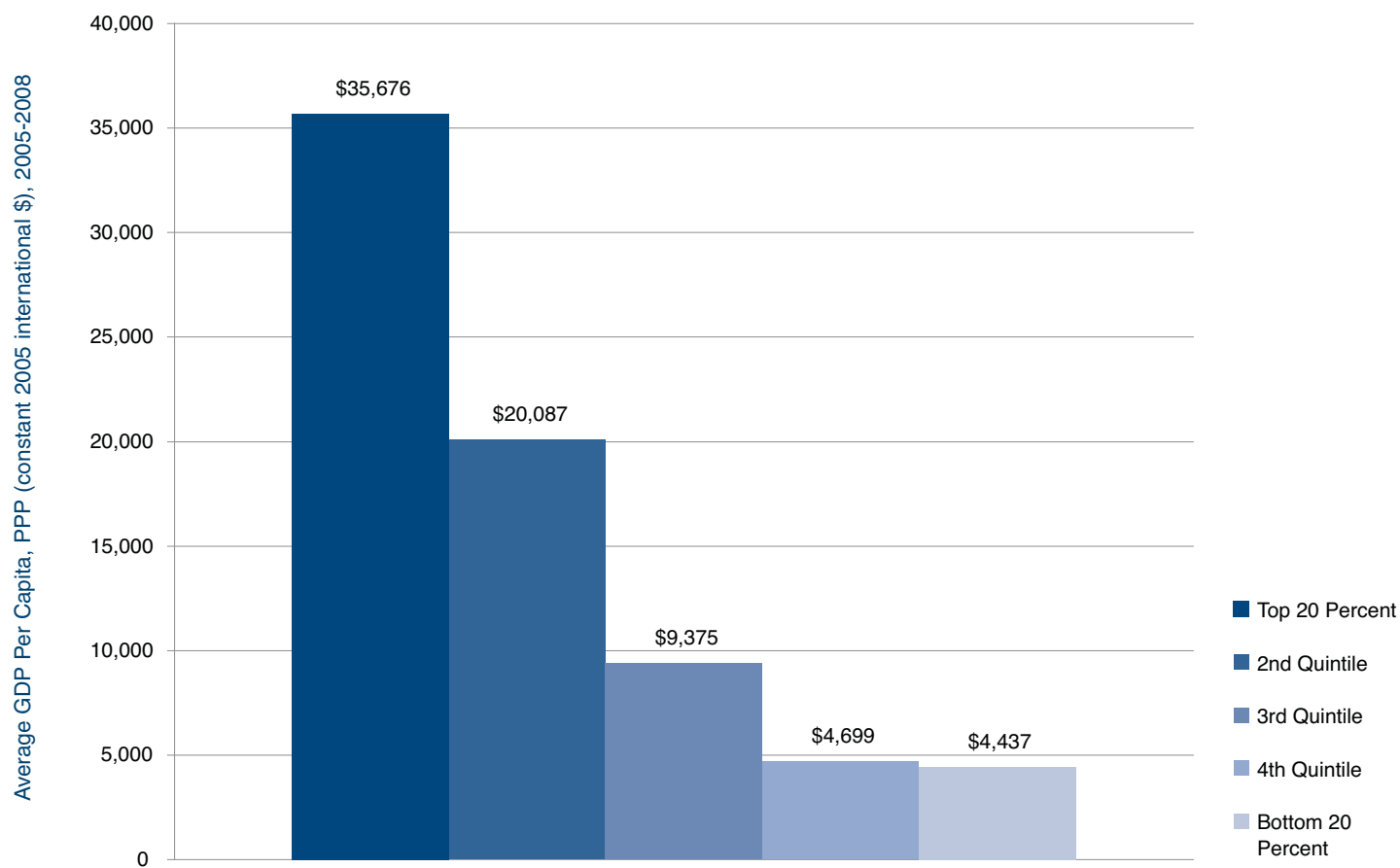


Figure 8 illustrates that, on average, countries in the top quintile of IPRI scores enjoy a per capita income of eight times that of their counterparts in the bottom quintile.⁸ Calculations for Figure 8 are based on the averages of the IPRI scores for 2007-2010 and corresponding data on average GDP per capita in PPP terms for years 2005-2008. Using averages allow us to establish a more robust relationship between property rights and income, which might fluctuate because of economic cycles and other exogenous impacts. The same pattern is observed when using only the last year of the IPRI scores and GDP per capita data.

Figure 9 presents the relationship between the IPRI scores and GDP per capita. The IPRI score is overwhelmingly positively related to GDP per capita. We observe that the countries with stronger property rights protection are among the countries with higher GDP per capita income as compared to the countries at the bottom of the IPRI ranking. A similar relationship is observed for the IPRI's core components (Figures 10-12).

Figure 9: Relationship between IPRI and GDP Per Capita

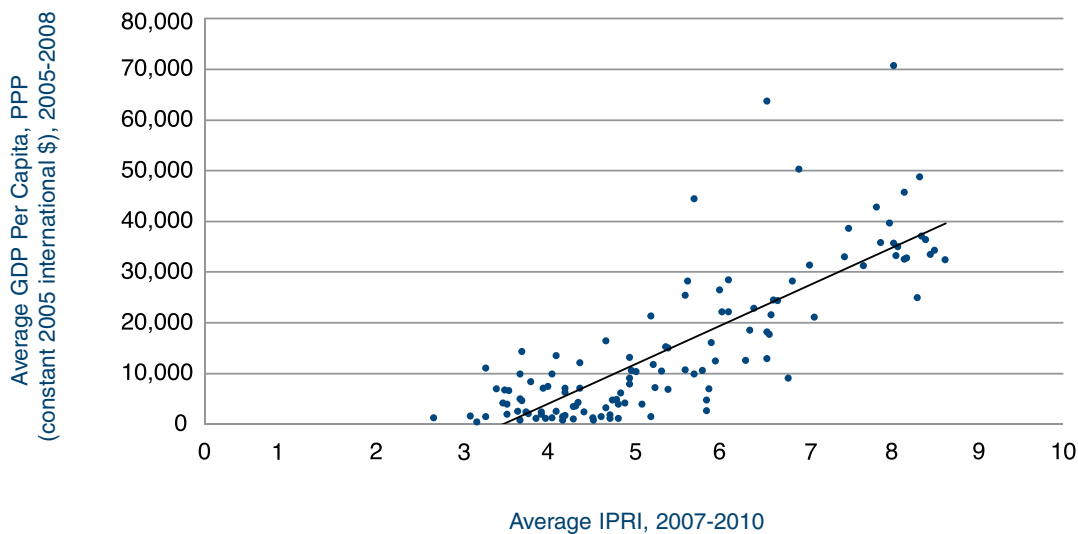


Figure 10: Relationship between LP and GDP Per Capita

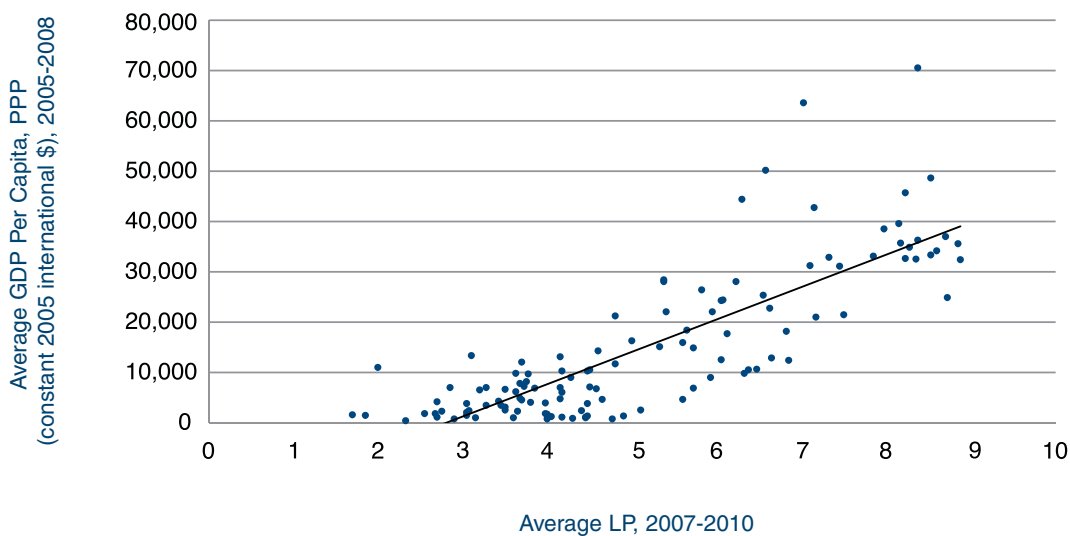


Figure 11: Relationship between PPR and GDP Per Capita

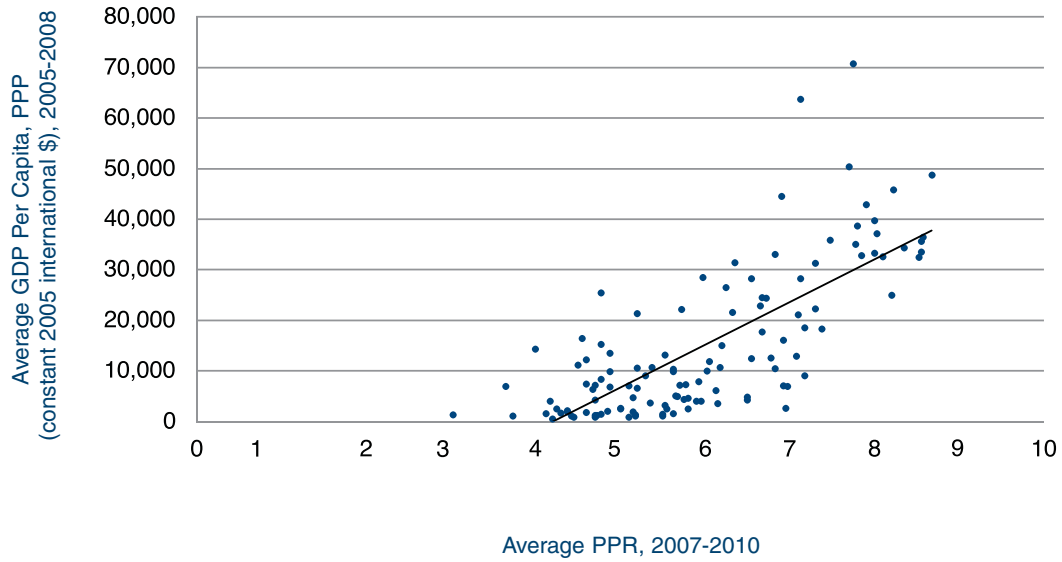


Figure 12: Relationship between IPR and GDP Per Capita

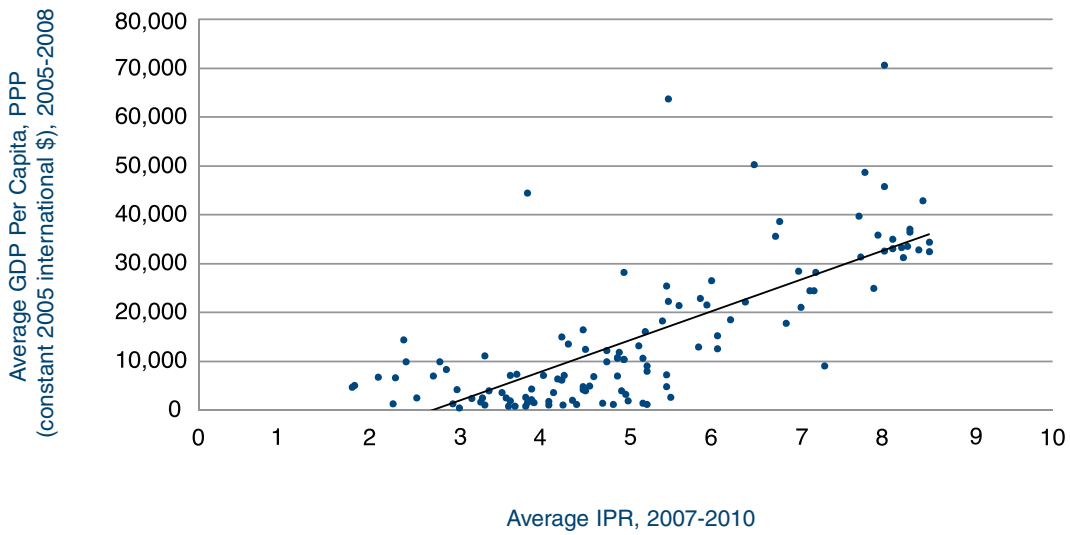


Figure 13: Relationship between IPRI and FDI Inflows as a Percent of GDP

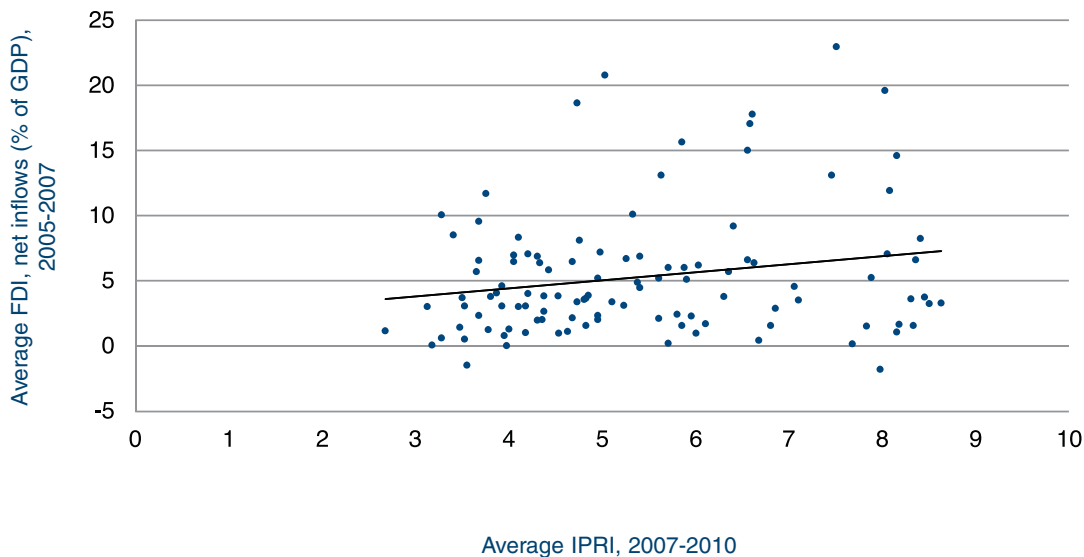
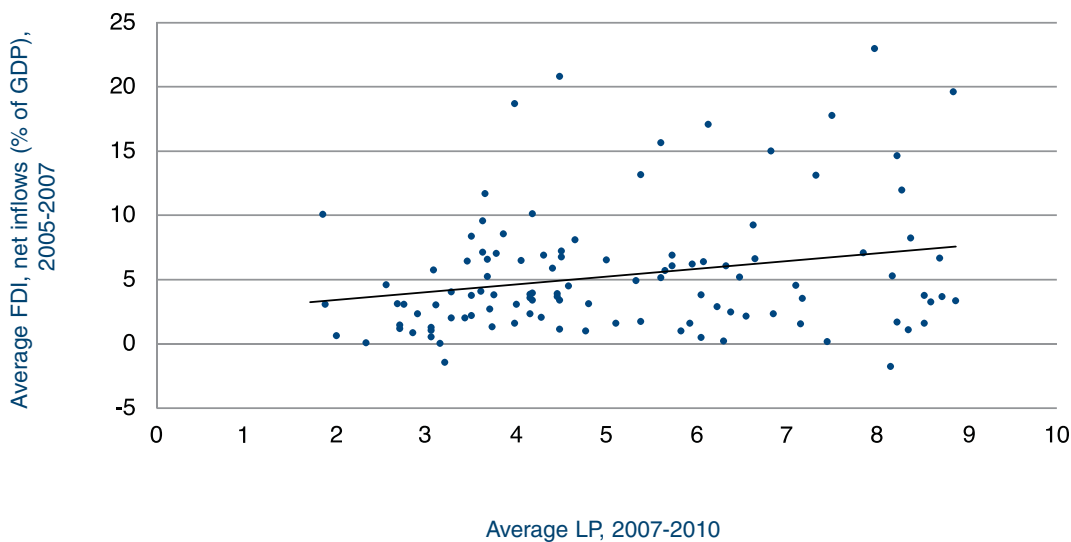


Figure 14: Relationship between LP and FDI Inflows as a Percent of GDP



To further investigate the role that protection of property rights plays in economic development, the authors have considered the relationship between the IPRI and its components and FDI. [Figure 13](#) demonstrates that there is a positive relationship between the average IPRI score and average FDI inflows measured as a percent of GDP.⁹ Similarly, [Figures 14-16](#) demonstrate that countries with better legal and political environments and stronger protection of physical property rights attract more FDI. This relationship appears to be weaker for the IPR component, but it is important to keep in mind that the data on IPR is less complete than for other components. Therefore, our results might be more prone to inconsistencies because of the lack of more comprehensive data. Additionally, the relationship appears to be somewhat hindered by the presence of outliers, such as Ireland, which is in the top quintile of the IPRI rank but experienced a significant reversal in the direction of FDI in 2005.¹⁰ Again, averages are used to be able to establish long-term trends.

Figure 15: Relationship between PPR and FDI Inflows as a Percent of GDP

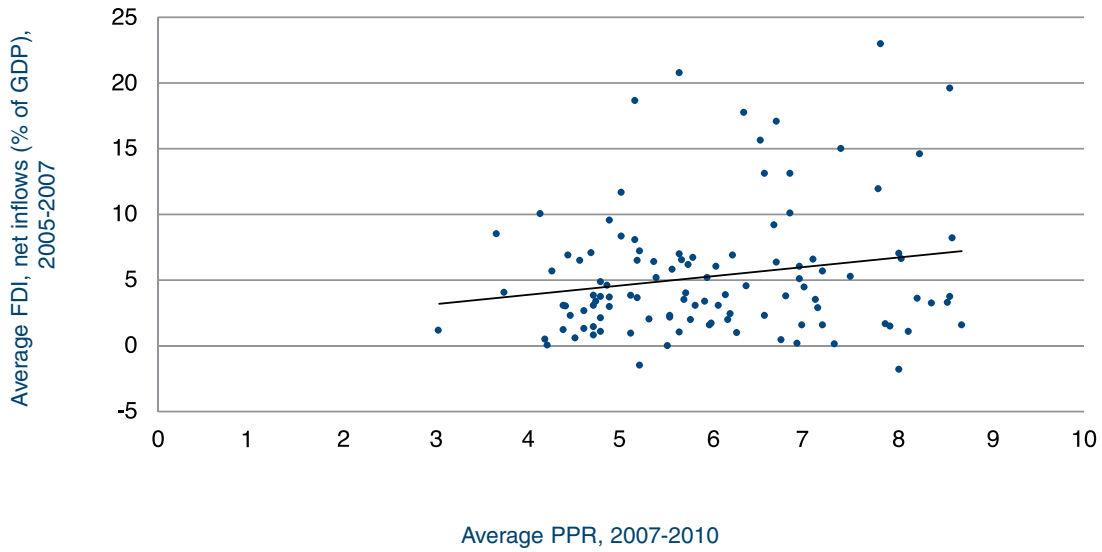


Figure 16: Relationship between IPR and FDI Inflows as a Percent of GDP

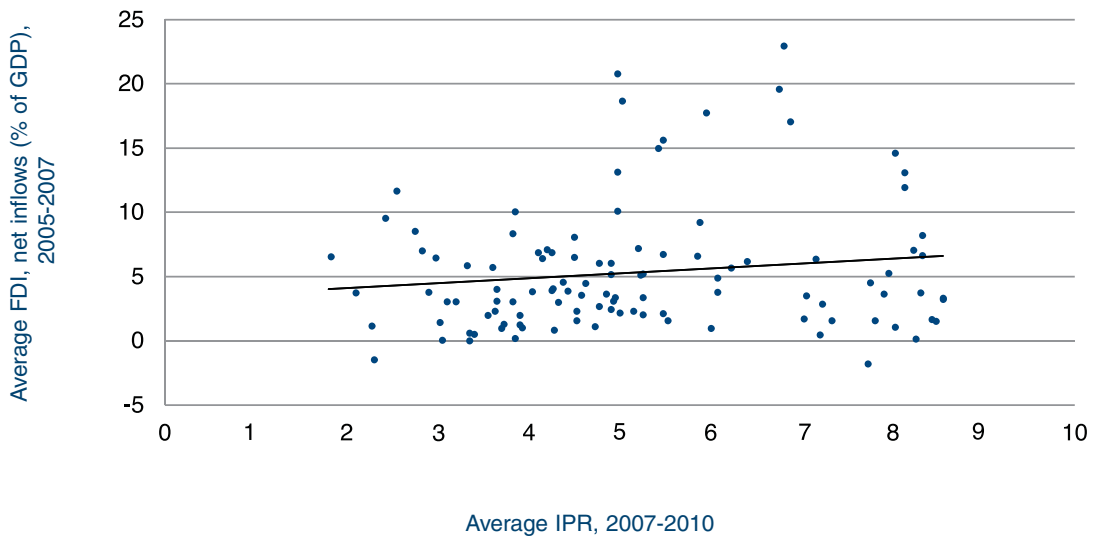


Figure 17: Relationship between IPRI and GDP Growth in Developing Countries

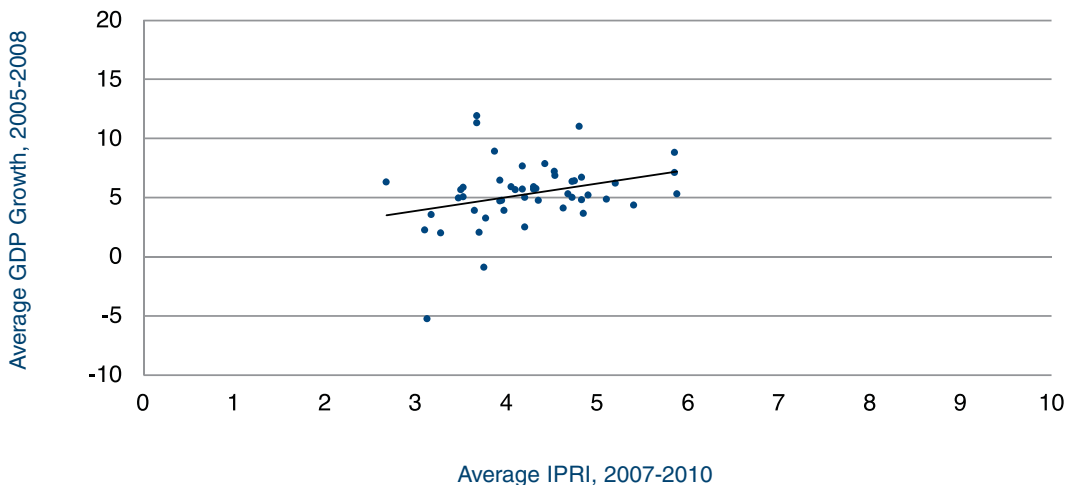
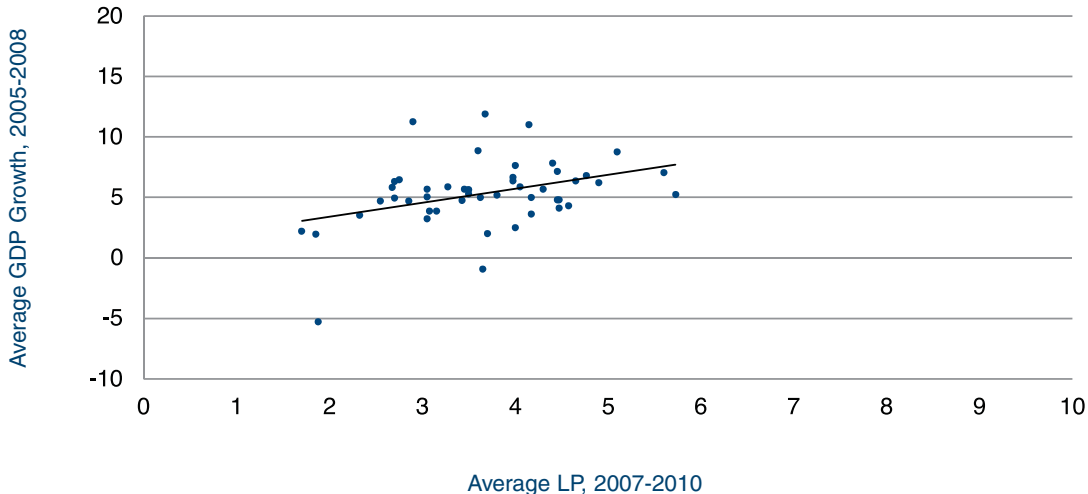


Figure 18: Relationship between LP and GDP Growth in Developing Countries



Countries in the top quintile of the IPRI ranking tend to be developed nations with lower GDP growth. The question then becomes whether stronger property rights are associated with higher economic growth in the developing countries.¹¹ Figures 17-20 demonstrate that those developing countries that respect property rights grow on average faster than those that fail to provide sound legal and political environment and protection of physical property rights. As with FDI inflows, the relationship is less clear with IPR but similar caveats apply about the nature of the IPR data.

Figure 19: Relationship between PPR and GDP Growth in Developing Countries

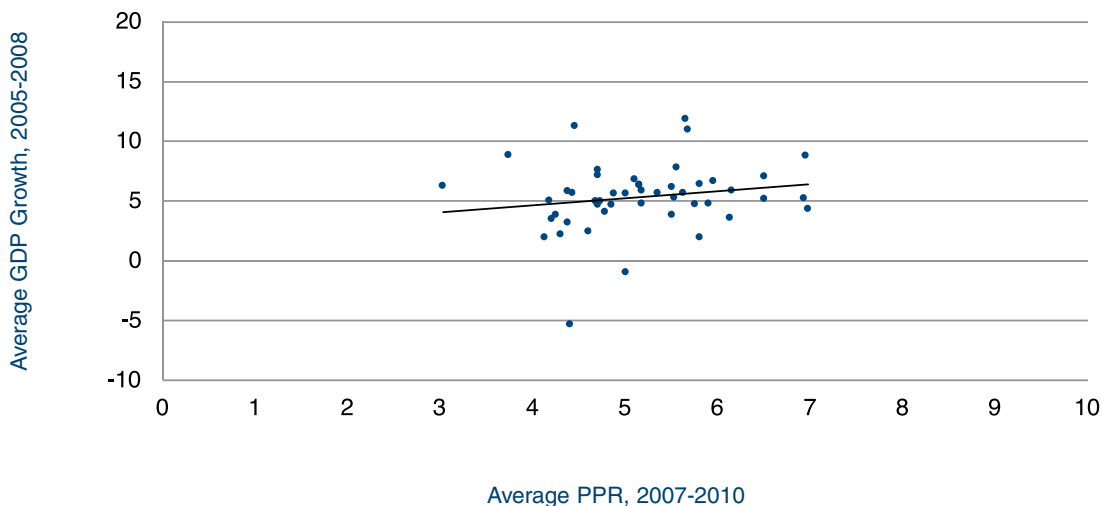
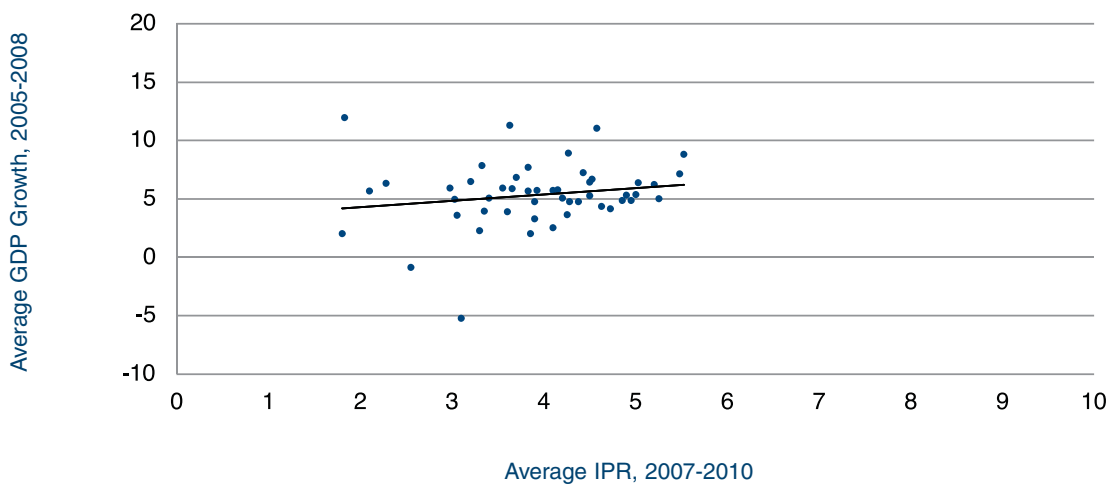


Figure 20: Relationship between IPR and GDP Growth in Developing Countries



Regression Analysis

Because GDP per capita is one of the primary measures used to assess economic well-being, we additionally look at how it relates to IPRI via a regression analysis.

By estimating the relationship between IPRI and GDP per capita via this analysis, we find a statistically significant positive relationship. Specifically, a one point increase in the IPRI score predicts a \$7,694 increase in GDP per capita (R-squared=0.67). In other words, the IPRI score is highly correlated with the level of economic development measured as GDP per capita. In fact, the correlation coefficient between these two variables is 0.82, which suggests a very strong association. Similarly, the IPRI components are highly correlated with GDP per capita. Results show that for LP, the correlation coefficient is also 0.82, while the correlation coefficient for both PPR and IPR components is 0.75.

It is important to note that these estimates show a correlation and do not necessarily prove causality. One way to address the problem of simultaneity to some extent is to lag a property rights measure when estimating its impact on the economic outcome variable. However, with only four years of data available at the moment, this strategy is not as effective. This is especially the case considering that changes in institutions usually do not produce large changes in outcomes in such a short term.

Additionally, the nature of the data collected allows us to control for unobserved time-invariant country characteristics (i.e., systematic differences that do not change or change very slowly). The positive relationship between IPRI scores and GDP per capita holds, controlling for such country-specific differences.

Conclusion

The global financial crisis and the recession that ensued provide us with an invaluable lesson. Clearly delineated property rights are a *sine qua non* for a flourishing economy. They are also likely to hold the key to a quick recovery. At a time when the financial markets are still in disarray and economies are struggling to recover, the world economy needs an infusion of economically viable assets that currently lack legal representation or are poorly enforced.

The 2010 IPRI finds that among the 125 countries included in the 2010 IPRI those countries in the top of the IPRI ranking continue to enjoy an overwhelmingly higher GDP per capita than those at the bottom. This relationship holds for components of the IPRI as well, thus reaffirming that countries with robust legal and political systems are better positioned to reap the benefits of both physical and intellectual property rights.

The 2010 IPRI demonstrates that despite the troubled economic times, countries continue to improve their property rights regimes, thus setting themselves on a path to economic development. However, because a few countries experienced setbacks, their prospects for recovery will most likely be inhibited.

While the evidence presented here is quite compelling, the authors invite readers to study further the relationship between property rights and economic outcomes using the IPRI data. Hopefully, further study will more fully unravel the link between secure property rights and economic well-being.