

# Structures of Peace

**Identifying what leads to peaceful societies**

A new conceptual framework for understanding and describing the factors that create a peaceful society. Derived from an empirical and statistical analysis of the Global Peace Index. Over 300 cross country datasets were used to define the key economic, political, and cultural determinants that foster the creation of a more peaceful society.

## The Institute for Economics & Peace

### *Quantifying Peace and its Benefits*

The Institute for Economics and Peace (IEP) is an independent, non-partisan, non-profit research organization dedicated to promoting a better understanding of the social and economic factors that develop a more peaceful society.

It achieves its goals by developing new conceptual frameworks to define peace; providing metrics for measuring peace; and, uncovering the relationship between peace, business and prosperity.

IEP has offices in Sydney, New York, and Washington, D.C. It works with a wide range of partners internationally and collaborates with intergovernmental organizations on measuring and communicating the economic value of peace. IEP's ground-breaking research includes the Global Peace Index.

For more information please visit [www.economicsandpeace.org](http://www.economicsandpeace.org)

## *Contents*

Executive summary .....	1
Introduction .....	3
Well-Functioning Government .....	6
Sound Business Environment .....	10
Equitable Distribution of Resources .....	14
Gender inequality .....	17
Acceptance of the Rights of Others .....	18
Attitudinal survey data .....	20
Good Relations with Neighbors.....	21
Free Flow of Information .....	24
High Levels of Education.....	27
Low Levels of Corruption.....	30
Conclusion .....	32
Appendix I – Country codes.....	34
Appendix II – Correlation matrix of key structures.....	35
Appendix III – Indicators weakly correlated with the GPI.....	36
Appendix IV – Indicators not correlated with the GPI.....	38
Appendix V – GPI indicators and sources table.....	39
Bibliography .....	40

## *Executive summary*

The Structures of Peace is a new conceptual framework for understanding and describing the factors that create a peaceful society. This conceptual framework has been derived from an empirical and statistical analysis of the Global Peace Index (GPI). Over 300 cross country datasets were used to define the key economic, political, and cultural determinants that foster the creation of a more peaceful society.

The Global Peace Index is comprised of 23 indicators that cover both the internal and external measures of peacefulness for 153 nations. The definition used for peace is “absence of violence” or “absence of the fear of violence”. This approach measures what can be termed “Negative Peace”.

While understanding the relative levels and types of violence that exist in and between nations is useful, this on its own does not identify the economic, political and cultural factors that shape a peaceful society. In contrast to negative peace, “Positive Peace” is about the appropriate attitudes, institutions, and structures which when strengthened, lead to a more peaceful society.

The Structures of Peace which have been developed from the analysis presented in this paper consist of the following elements:

- Well-functioning government
- Sound business environment
- Equitable distribution of resources
- Acceptance of the rights of others
- Good relations with neighbors
- Free flow of information
- High levels of education
- Low levels of corruption

These eight factors were found to be associated with peaceful environments and can be seen as both interdependent and positively reinforcing of each other.

## *Global Peace Index*

...

Produced by the Institute for Economics and Peace, the Global Peace Index is the world's leading measurement of national peacefulness. Inaugurated in 2007, today it ranks 153 nations by their presence or absence of violence, using 23 qualitative and quantitative indicators that measure both the internal and external peacefulness of the countries. The GPI provides a rich body of research for comparative studies of peacefulness.

This means the relative strength of any one 'structure' has the potential to either positively or negatively influence peace.

Due to the inter-dependence of these factors, the weakening or strengthening of any one structure will also weaken or strengthen the presence of the other structures. A peaceful environment is therefore dependent on the presence and strength of all structures. This is analogous to a brick wall: take out one brick and the strength of the entire wall is materially impacted.

The framework described in this paper does not aim at isolating causality; rather it describes the 'optimum' environment for peace to flourish. This means that peace-building efforts should aim at enhancing and building these structures as much as possible while dealing with tactical issues such as violence containment.

Within this framework, causality can flow in either direction and also between any of the structures. The flow of causality is dependent on the economic, political and cultural differences between nations and regions. To simply illustrate the point, consider the situation of a civil war, where economic growth and the business environment cannot improve until the civil war stops – in this situation economic growth and business development are dependent on the end of conflict.

Conversely, the recent economic downturn and subsequent austerity measures in Greece were the primary negative drivers of subsequent violent demonstrations. This demonstrates the potential for either virtuous cycles of peace or vicious cycles of violence to occur. Once these cycles are underway they can be self-reinforcing and very difficult to reverse.

One of the more interesting factors to flow from IEP's research is the relationship between resilience and peace. Resilience is defined as the capacity of social systems to absorb stress and repair themselves<sup>1</sup> as well as a capacity for renewal and adaptation. Countries with higher levels of peacefulness tend to be more resilient to external shocks, whether economic, geopolitical or natural disasters. This can be demonstrated by the respective recoveries in Iceland and Japan, one after the financial crisis and the other following the March 2011 earthquake and tsunami. As sustainability challenges increase, the resilience of society will become more critical and will determine the ability of the societies to pull together in times of crisis.

Peace is also associated with many other desirable characteristics, such as economic development, environmental health, and social cohesion. Therefore the Structures of Peace not

---

<sup>1</sup> Quinlan, A. (2010), *Building Resilience in Ontario: More than Metaphor or Arcane Concept?* Resilience Science  
<<http://rs.resalliance.org/2010/03/11/building-resilience-in-ontario-%E2%80%93-more-than-metaphor-or-arcane-concept/>>.

only describe the optimal environment for peace to flourish but also the optimal environment for many other forms of human activity to flourish. Peace is statistically related to better business environments, higher per capita income, higher educational attainment and stronger social cohesion. Therefore, by establishing the appropriate environment to support peace many other benefits will flow. *In this light peace can be seen as a proxy for creating the optimal environment for human potential to flourish.*

## Introduction

The Global Peace Index, produced by the Institute for Economics and Peace, is the first ever study to rank the nations of the world by their peacefulness. Inaugurated in 2007, it now ranks 153 nations by their peacefulness, using the definition of peace as the “absence of violence” or “fear of violence”, a concept often referred to as “Negative Peace”.<sup>2</sup> This definition is both intuitive and empirically measurable. The GPI uses 23 qualitative and quantitative indicators to measure both the internal peacefulness of nations as well as their external peacefulness.<sup>3</sup>

While understanding the different types of violence and the relative levels of violence between nations is very useful, this on its own it does not help deepen our understanding of the institutions, attitudes and structures that create or maintain a peaceful society. In contrast to negative peace, this conceptual framework is known as “Positive Peace” and is focused on understanding the appropriate attitudes, institutions and structures which build a more peaceful society.

To understand positive peace, the GPI can be used as the research base for cross country comparisons with other data sets, indexes, and attitudinal surveys. With the GPI now in its fifth year, IEP is able to utilize its detailed and extensive datasets to deepen the statistical analysis of peace. With a richer set of data now available, it is possible to define and identify particular mechanisms that nurture and sustain peace and show that peaceful environments are associated with particular cultural, political, and economic characteristics.

Whereas previous studies of positive peace have tended to focus on constructing a comprehensive idealized definition of what positive peace should mean, the Structures of Peace is the first such study to use statistical analysis to comprehensively identify the factors associated with peace. These factors have then been grouped together to form the eight-part taxonomy of the Structures of Peace. As a result, this study provides a unique conceptual basis for thinking about positive peace and the key factors that help determine peaceful environments.

---

<sup>2</sup> Galtung, J. (1996), *Peace by Peaceful Means: Peace and Conflict, Development and Civilization*, Sage, London, p. 31.

<sup>3</sup> See Appendix V for list of GPI indicators. Also note that all websites included in the references or bibliography were viewed in the period from 15 January to 17 August 2011.

This research shows that peace does not exist in its own right. The relative peace of a society is underpinned by the material and cultural circumstances of that society, whether it is the efficiency of the formal institutions of government, the strength of the economic conditions, or the strength of the cultural and informal norms that relate to corruption.

**Figure 1: The Structures of Peace - An intuitive eight-part taxonomy to visualize the key determinants of peace**

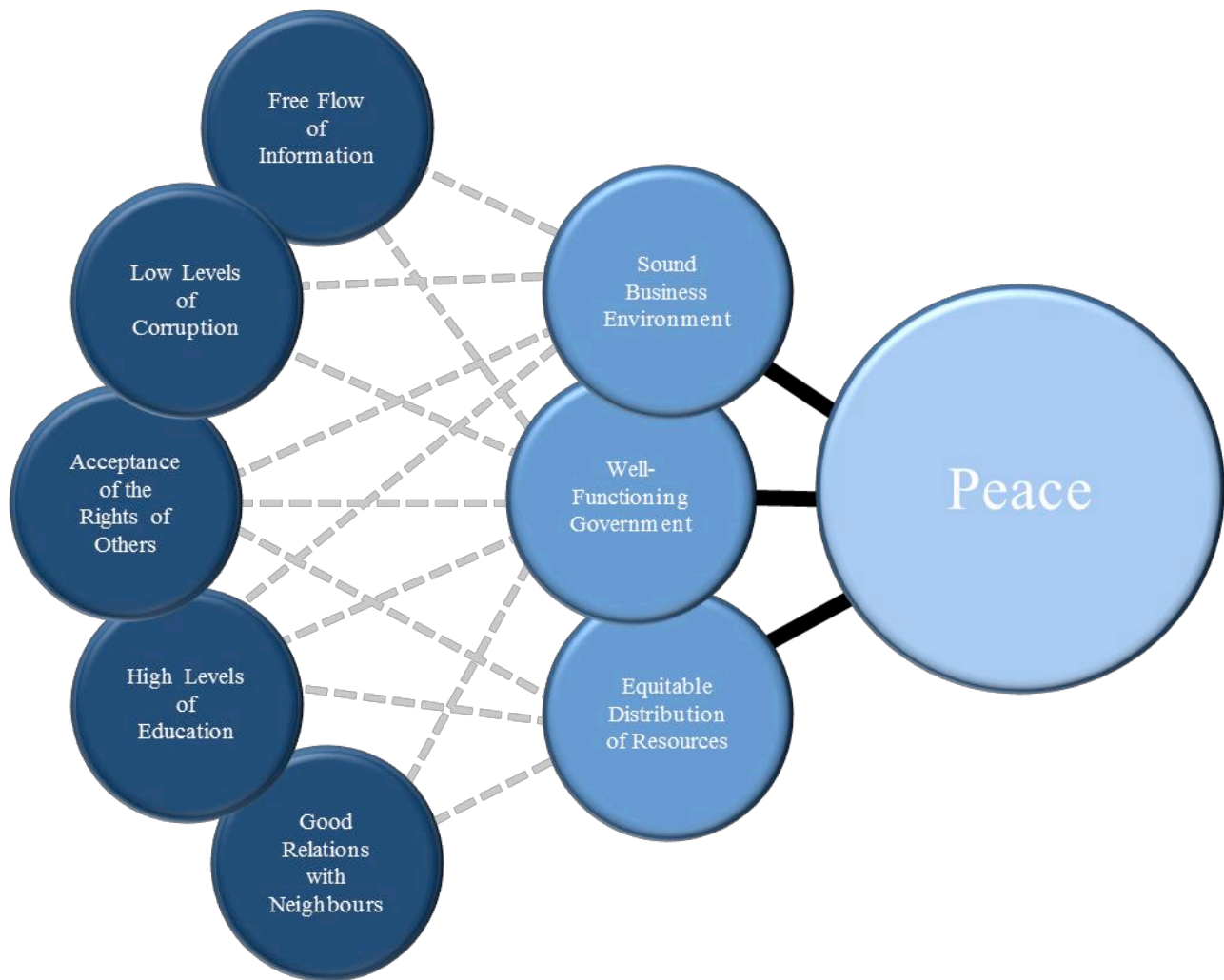


Figure 1 is a visual representation of the Structures of Peace. All of the eight elements can be seen as highly interconnected and interacting in varied and complex ways to form either virtuous or vicious cycles with causality running both ways. The animated relationships between the structures are purely indicative and are not literal interpretations of the various statistical associations discovered. The strength of the various interactions will depend on the historical, political, economic and cultural circumstances of particular societies.

Many studies in peace and conflict research aim at understanding why conflict occurs, and the chain of causality driving economic, political and cultural patterns and events. However,



complex patterns of causation are unlikely to be able to be explained in generic terms. Causality can flow in either direction, depending on the circumstances of a particular situation. This can best be exemplified by the relationship between business activity and peace. In a conflict zone, other than a few exceptions such as private security companies, business activity will struggle or not develop until the conflict ceases; therefore business development is conditional on peace.

While improving business conditions may provide a disincentive to returning to violence, it also is seen that once a robust business environment has been established, major economic downturns can lead to violence as evidenced by the violent riots against austerity measures in Greece. In this example causality flows in the opposite direction.

The framework described in this paper does not aim at isolating causality; rather it describes the 'optimum' environment for peace to flourish. This means that peace-building efforts should aim at enhancing and building these structures as much as possible while dealing with tactical issues as well as violence containment. As the structures improve fewer tactical issues will emerge. Peace also creates resilience, thereby allowing societies to absorb shocks and disturbances more easily. In this context, resilience is seen as the capacity of social systems to absorb stress and repair themselves<sup>4</sup>, as well as a capacity for renewal and adaptation. The resilient nature of peaceful societies is one of the most profound observations to result from the analysis of the GPI. As can be demonstrated by practical country level case studies, peaceful nations are better equipped through their institutions and attitudes to respond to external shocks. This can be seen with internal peace correlating strongly to measures of intergroup cohesion and civic activism, which are key proxies to indicate the ability of particular societies to resolve internal political, economic, and cultural conflicts as well as external shocks.

In practical terms there are many benefits for societies which enable the Structures of Peace to flourish; collectively all of these structures improve human wellbeing. This can mean:

- Lower levels of business risk
- Higher per capita incomes
- More equitable distribution of resources
- Improved trust between citizens
- Greater social cohesion.

#### Note on use of terms

• • •

**Significance** (or significance threshold): The qualitative level at which IEP considers that a relationship between two variables is meaningful.

**Statistical significance (significance level)** indicates something that passes the appropriate statistical test (for correlation, the t-test which distinguishes the correlation from zero)

All correlations presented, other than societal attitudes, have a determined level of significance  $> 0.5$  or  $< -0.5$ . The threshold for a meaningful correlation from global surveys was considered more appropriate at  $> 0.4$  or  $< -0.4$ .

<sup>4</sup> Quinlan, A. (2010), *Building Resilience in Ontario: More than Metaphor or Arcane Concept?* Resilience Science, <<http://rs.resalliance.org/2010/03/11/building-resilience-in-ontario-%E2%80%93-more-than-metaphor-or-arcane-concept/>>.



## Well-Functioning Government

Well-Functioning Government is dependent upon levels of political participation, political culture, the separation of powers, the quality of democracy and public service delivery. Several indicators of government effectiveness correlate with the GPI and include: the World Bank's *World Governance Indicators*, the Freedom House *Freedom in the World* survey, the Economist Intelligence Unit's (EIU) *Political Democracy Index*, Bertelsmann Stiftung's *Sustainable Governance Indicators* and the *Index of State Weakness in the Developing World* from the Brookings Institution. These are summarized in table one below.

**Table 1: Functioning of government correlations with the GPI**

Source	Index	Indicator	Year	Correlation Coefficient
Economist Intelligence Unit	Political Democracy Index	Overall Score	2011	-0.619
		Functioning of government	2011	-0.633
		Political culture	2011	-0.662
		Civil liberties	2011	-0.562
Bertelsmann Stiftung	Sustainable Governance Indicators (OECD countries only)	Status Score	2011	-0.689
		Quality of Democracy	2011	-0.677
		Social Affairs	2011	-0.633
		Security	2011	-0.815
		Resources	2011	-0.609
		Intermediary Organizations	2011	-0.582
Freedom House	Freedom in the World Survey	Overall Score	2011	0.618
		Political Rights	2011	0.572
		Civil Liberties	2011	0.653
World Bank	World Governance Indicators	Voice and Accountability	2010	-0.645
		Political Stability	2010	-0.843
		Government Effectiveness	2010	-0.727
		Regulatory Quality	2010	-0.681
		Rule of Law	2010	-0.766
Legatum Foundation	Legatum Prosperity Index	Political Constraints	2010	-0.548
		Separation of Powers	2010	-0.631
		Confidence in the Honesty of Elections	2010	-0.499
		Governance Sub-Index Scores	2010	-0.736
		Civil War	2010	0.547
United Nations	Human Development Index	Overall Score	2010	-0.573
Brookings Institute	Index of State Weakness in the Developing World	Overall Score	2008	-0.683
		Economic	2008	-0.552
		Political	2008	-0.636
		Security	2008	-0.775

Each of the indices mentioned, second column from left, have sub-indices (middle column) which further measure different aspects of government process, operation, capacity and stability. This shows Well-Functioning Government is dependent upon a multitude of aspects, from the political culture engendered, to the quality of the public services delivered. This further demonstrates the interdependent nature of these measures and the importance of each factor in determining the overall 'functioning' of government, particularly in relation to political stability.

The World Bank's *World Governance Indicators* (WGI) has all six of its measures correlating with the GPI and provided the highest correlating cluster alongside the Bertelsmann Stiftung measures.<sup>5</sup> Out of all of these measures, the WGI is arguably the most authoritative measure on governance and has a relatively long-running time series dating back to 1996. The comprehensive relation between these factors is also affirmed by other holistic measures such as the Brookings Institute's *Index of State Weakness in the Developing World* which ranks 141 developing nations according to their relative performance across the economic, political, security and social welfare spheres.<sup>6</sup> This index correlates strongly with the overall GPI ( $r = -0.68$ ), again showing the interdependent nature of effective governance.

This finding is comprehensively reinforced by the other listed governance measures which utilize slightly different methodologies, data sources, and forms of measurement to arrive at similar statistical relationships. The interdependent nature of good governance has important relevance to the approach many developed nations take to building competencies in fragile states or in their approach to Official Development Assistance (ODA). This underlines the challenge for governments and intergovernmental organizations working in post-conflict regions to focus not just on acute problems but on all the interrelated aspects of overall nation-building. Well-Functioning Government, as with other structures is inter-dependent.

Many positive outcomes can arise where there is effective governance, such as capable implementation, sound policy processes and separation of powers along with high levels of political participation. Generally speaking, political instability and corruption are lower when rule of law and legal processes are more robust and equitable. The provision of education and health services are generally of a higher standard and reach a larger proportion of the population when governments are effective.

The primary importance of well-functioning government has been reinforced by recent research from the World Bank which has suggested that improved governance strengthens development

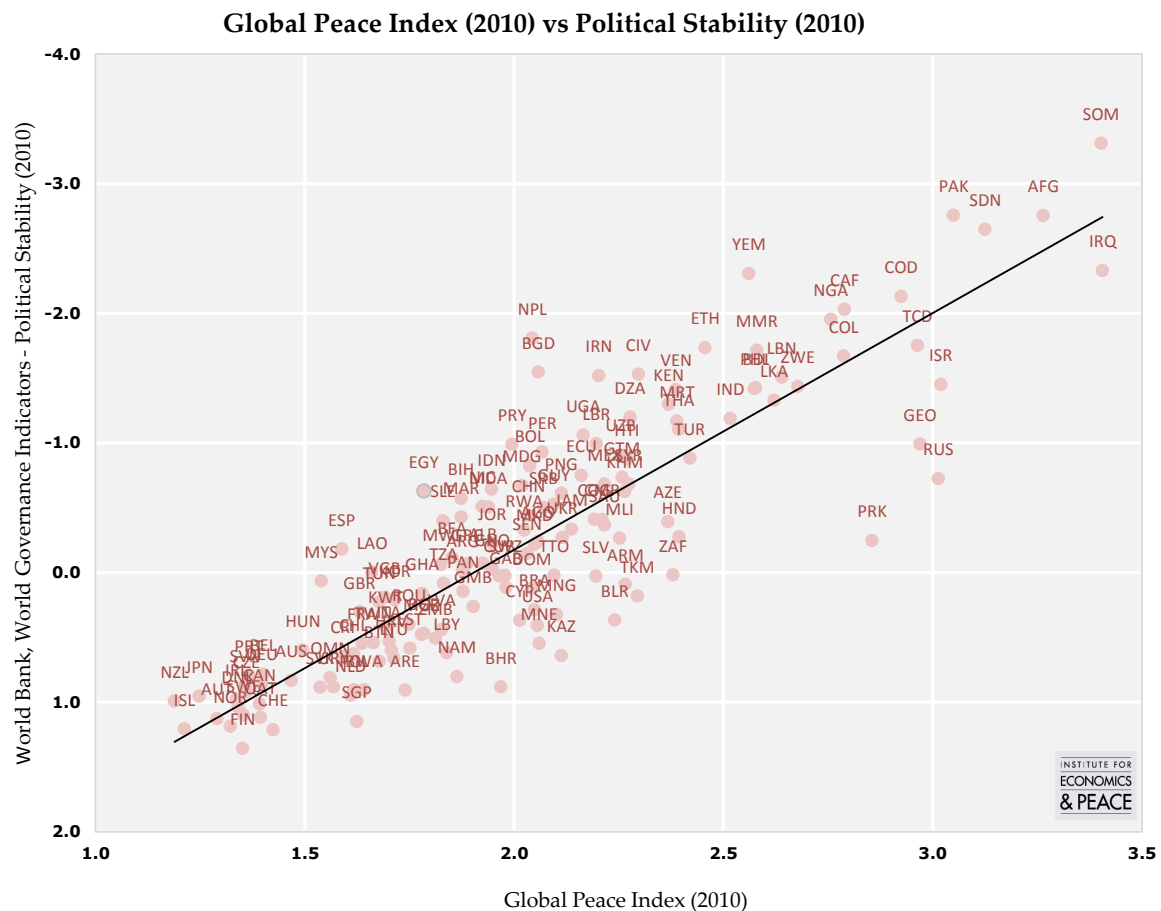
---

<sup>5</sup> Control of corruption is detailed in a separate section focusing on corruption as a separate structure of peace.

<sup>6</sup> Rice, S., & Stewart, P. (2008), *Index of State Weakness in the Developing World*, Brookings Institution, <[http://www.brookings.edu/~media/files/rc/reports/2008/02\\_weak\\_states\\_index/02\\_weak\\_states\\_index.pdf](http://www.brookings.edu/~media/files/rc/reports/2008/02_weak_states_index/02_weak_states_index.pdf)>.

and improves living standards.<sup>7</sup> The close link to political stability is also shown in figure two, which visualizes the World Bank's *Political Stability* correlation with the GPI. This is a very strong correlation at  $r=0.87$  showing a significant/robust relationship between political stability as measured by the World Bank and the GPI. The scatter diagram captures perceptions of the likelihood that the government will be destabilized or overthrown by unconstitutional or violent means, including politically-motivated violence and terrorism. The inverse correlation with peace is very strong at  $r=-0.843$ .<sup>8</sup>

Figure 2: Countries that are politically stable tend to be more peaceful



Clustered at the bottom left of the graph are many Western European nations, as well as Japan, Canada and Australia, all of which share full democratic systems of government.

While political stability does correlate with political democracy as measured by the EIU ( $r = 0.52$ ), there are examples of nations which are peaceful as measured by the GPI but are either

<sup>7</sup> Kaufmann, D., Kraay, A. & Mastruzzi, M. (2009), *Governance Matters 2009: Learning From Over a Decade of the Worldwide Governance Indicators*, The Brookings Institute, <[www.brookings.edu/opinions/2009/0629\\_governance\\_indicators\\_kaufmann.aspx](http://www.brookings.edu/opinions/2009/0629_governance_indicators_kaufmann.aspx)>.

<sup>8</sup> Further information on these indicators is available at: <<http://info.worldbank.org/governance/wgi/pdf/pv.pdf>>.

not democratic or are only partly democratic and yet have 'well-functioning' government. The two notable outlier countries are Singapore and Qatar.

To further illustrate this point we have selected the '*functioning of government*' measure from the Political Democracy Index.<sup>9</sup> This is a qualitative assessment of whether freely elected representatives determine government policy, and whether there is an effective system of checks and balances on the exercise of government authority. It is collected by Economist Intelligence Unit (EIU) analysts and correlates strongly with the overall GPI ( $r = 0.63$ ). In fact, it correlates higher with the GPI than does the overall Political Democracy Index ( $r = 0.56$ ), which again demonstrates that some nations have well-functioning governments without the presence of effective democratic institutions.

However, in spite of these outliers, the correlation between political democracies as measured by the EIU shows the top ten most peaceful nations in the GPI are all well-functioning democracies while most of the bottom ten nations are authoritarian regimes or failed states.

To fully capture 'government effectiveness' four key areas need to be measured:

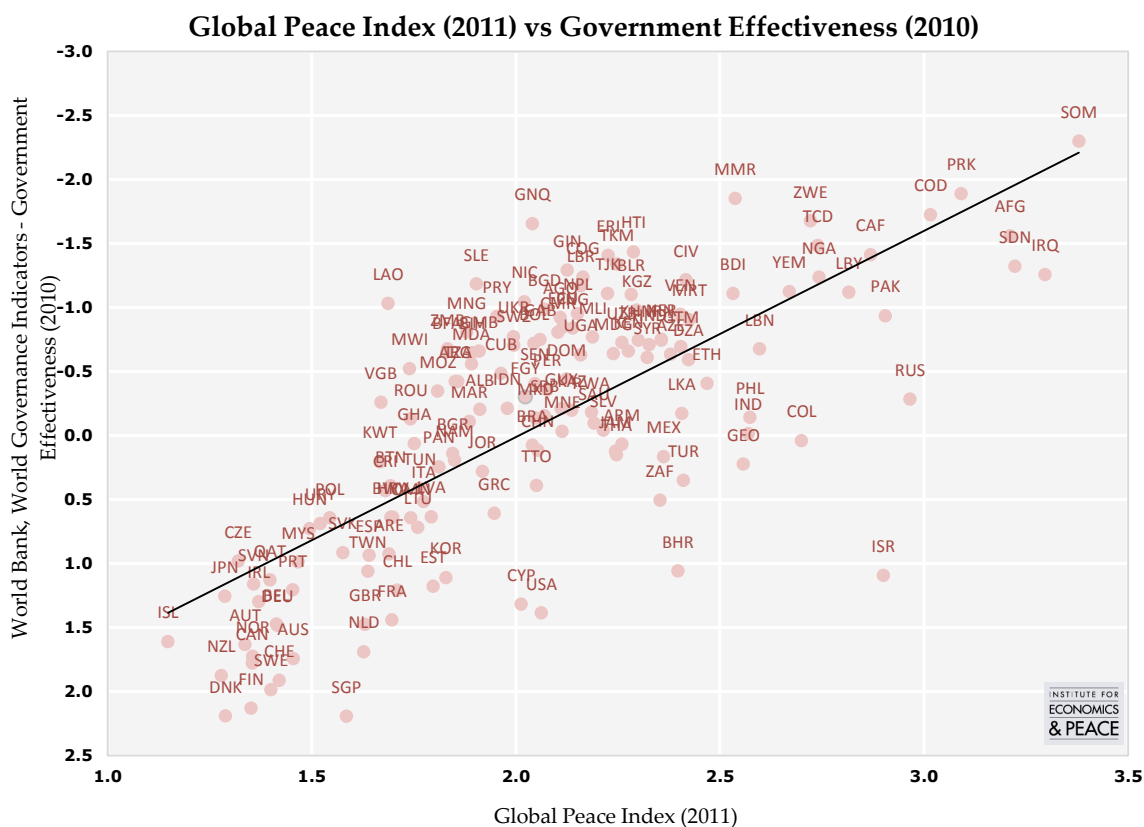
- The quality of public services
- The quality of the civil service and the degree of its independence from political pressures
- The quality of policy formulation and implementation
- The credibility of the government's commitment to such policies.

The World Governance Indicators 2010 *Effectiveness of Government* measure correlates at  $r = -0.71$  with the GPI. Again, the cluster at the bottom left is mostly European countries alongside Canada, Australia and Japan which score very highly on the effective governance measure.

---

<sup>9</sup> Economist Intelligence Unit (2008), *Index of Democracy*,  
<<http://graphics.eiu.com/PDF/Democracy%20Index%202008.pdf>>.

Figure 3: Quality public services, sound policy formulation and implementation tend to be associated with peaceful environments



It can be seen in figure three that generally speaking, neither authoritarian regimes nor countries that are transitioning from one style of government to another perform well in government effectiveness.

## Sound Business Environment

The 'Sound Business Environment' structure refers to the strength of economic conditions as well as the formal institutions that support the operation of the private sector. Strong private sector conditions are essential for employment and economic growth and also ensure that there is a viable tax base upon which governments can fund other critical services which the private sector cannot. These factors are critical to fostering a peaceful environment.

Several indicators of business competitiveness and freedom, as well as GDP per capita, were correlated with the GPI to determine their importance in relation to peace. As shown in table two, these measures relate to both key institutional and material factors.

Institutional factors include ease of business administration, capacity for innovation in terms of technological readiness, and access to human capital in education and training. Other factors were the quality of associated institutions and the strength of property rights.

Material measures that can be seen as proxies for the strength of the general business environment are GDP per capita, capital invested per worker, R&D expenditure and proportion of trading across borders.

**Table 2: Sound business environment correlations with the GPI**

Source	Index	Indicator	Year	Correlation Coefficient	
World Bank	Ease of Doing Business	Overall Rank	2011	0.542	
		Trading Across Borders	2011	0.524	
		Closing a Business	2011	0.512	
World Economic Forum	Global Competitiveness Report	Technological Readiness	2011	-0.643	
		Institutions	2011	-0.628	
		Basic Requirements	2011	-0.624	
		Higher Education and Training	2011	-0.598	
		Goods Market Efficiency	2011	-0.597	
		Overall Score	2011	-0.597	
		Infrastructure	2011	-0.588	
		Efficiency Enhancers	2011	-0.578	
		Innovation and Sophistication Factors		2011	-0.573
		Health and Primary Education		2011	-0.512
Heritage Foundation	Index of Economic Freedom	Property Rights	2011	-0.673	
		Overall Score	2011	-0.602	
		Business Freedom	2011	-0.566	
		Financial Freedom	2011	-0.514	
Economist Intelligence Unit		GDP per capita	2011	-0.581	
Legatum Foundation	Legatum Prosperity Index	Overall Score	2010	-0.756	
		Entrepreneurship and Opportunity Sub-Index Score	2010	-0.683	
		Capital Per Worker	2010	-0.606	
		Economy Sub-Index Score	2010	-0.551	
World Bank	World Development Indicators	R+D Expenditure	2010	-0.582	
Frazer Institute	Economic Freedom of the World Index	Overall Score	2008	-0.585	

Of the 24 correlations, the World Economic Forum's *Global Competitiveness Report* (GCR) has the most number of sub-indices correlating with the GPI. Defining competitiveness as 'the set of institutions, policies and factors that determine the level of productivity of a country',<sup>10</sup> the overall index score correlates with the GPI at  $r = -0.59$ , indicating that the more competitive and business-friendly societies are, the more peaceful they tend to be.

<sup>10</sup> World Economic Forum (WEF) (2010), *The Global Competitiveness Report 2009-2010*, Schwab K. (ed.), World Economic Forum <[http://www3.weforum.org/docs/WEF\\_GlobalCompetitivenessReport\\_2010-11.pdf](http://www3.weforum.org/docs/WEF_GlobalCompetitivenessReport_2010-11.pdf)>.

Other correlations that measure the quality of institutions as well as the degree to which policies enable economic freedom are the Fraser Institute's *Economic Freedom of the World* (EFW) Index ( $r = 0.58$ ). It measures the degree to which the policies and institutions of countries are supportive of economic freedom.<sup>11</sup> Similarly, another measure of economic freedom that correlates with the GPI is the Heritage Foundation's *Economic Freedom Index* ( $r = -0.60$ ). This measures individuals' ability to work, produce, consume and invest in any way they please, with that freedom both protected and unconstrained by the state.<sup>12</sup> The key assumption in this index is that in economically free societies, governments allow labor, capital and goods to move freely, and refrain from coercion or constraint.

Another important element for a sound business environment is the presence of a regulatory system which is conducive to business operation. The World Bank's *Ease of Doing Business Index*<sup>13</sup> ranks 181 countries on this measure across ten indicators with the overall score correlating with the GPI at  $r=0.54$ . This shows peaceful countries tend to have sounder regulatory environments and are also associated with higher levels of competitiveness and economic freedom. Regulation can either 'crowd in' or 'crowd out' investment and when applied effectively and in the right circumstances it will also help facilitate better governance and lower corruption.

Additionally, increasing peace creates a safer environment for capital investment than would otherwise be the case. Investment is stimulated because of reduced business risk, thereby creating economic growth, increasing living standards and enabling a virtuous circle between peace and prosperity to emerge. The interdependent nature of each of these factors can be seen in Appendix II. Figure four depicts the relationship between the World Economic Forum's *Global Competitiveness Report* and the GPI. The trend-line helps to visualize the distinct relationship between business competitiveness and peace.

---

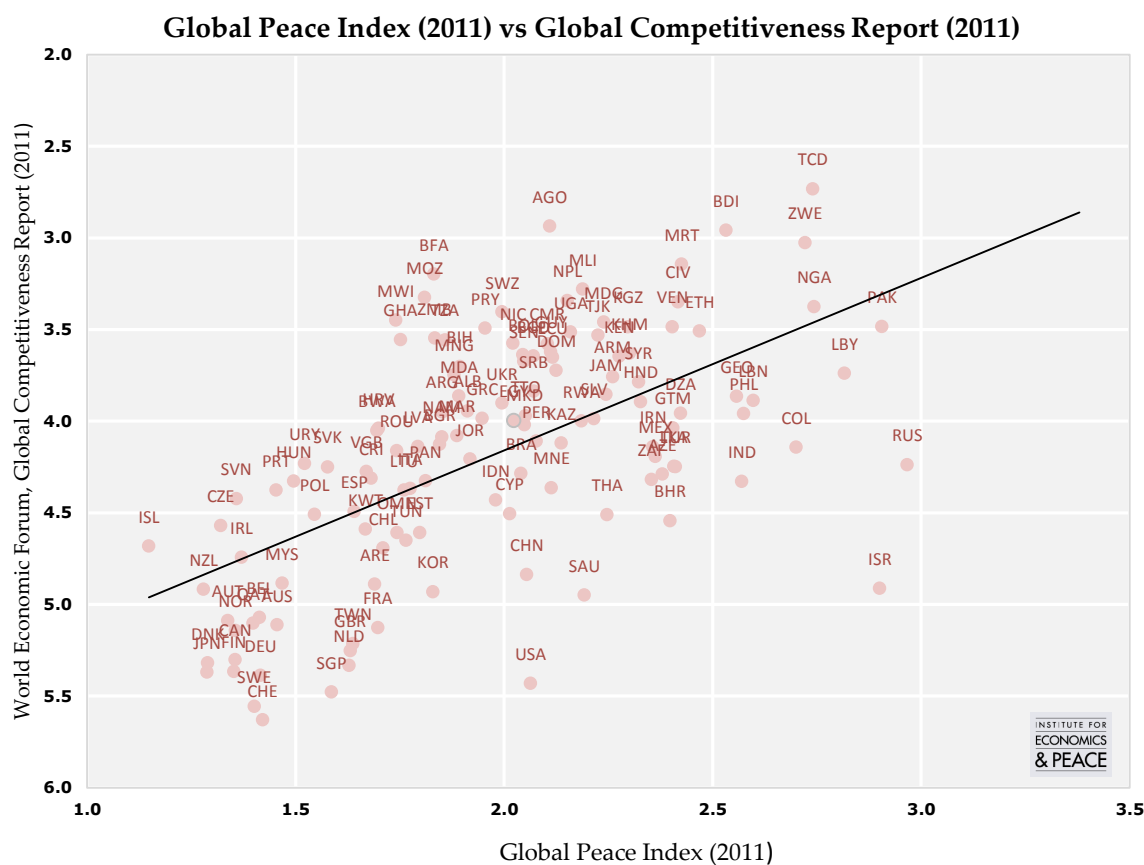
<sup>11</sup> Gwartney, J. & Lawson, R. (2009), *Economic Freedom of the World 2009 Annual Report*, The Fraser Institute, <<http://www.fraserinstitute.org/research-news/display.aspx?id=13006>>.

<sup>12</sup> The Heritage Foundation & Wall Street Journal (2010), *2010 Index of Economic Freedom*, The Heritage Foundation, <[www.heritage.org/Index/download](http://www.heritage.org/Index/download)>.

<sup>13</sup> Ease of Doing Business measures include: Starting a business, dealing with construction permits, employing workers, registering property, getting credit protecting investors, paying taxes, trading across borders, enforcing contracts, and closing a business.



Figure 4: Competitive economies tend to be more peaceful



A core assumption in the Global Competitiveness Report (CGR) is that productivity determines the rate of return obtained by investments within a country.<sup>14</sup> This relationship validates the intuitive hypothesis that peaceful countries allow for greater worker productivity as well as national level productivity. As a corollary, it can be seen how GDP per capita also correlates with the GPI, a finding that relates closely to IEP's associated research on the economic burden of violence. Work undertaken by Prof. Tepper-Marlin and Prof. Brauer<sup>15</sup> for IEP estimated that liberating the human, social and physical capital which had been suppressed by violence would have potentially added US\$8 trillion to the global economy in 2010. This additional economic output is the modeled result of transferring investment from non-productive violence related industries to more productive industries, and would have represented a 13.1% increase on

<sup>14</sup> The CGR defines competitiveness as "the set of institutions, policies, and factors that determine the level of productivity of a country. The level of productivity, in turn, sets the sustainable level of prosperity that can be earned by an economy." See WEF (2010), pg. 4.

<sup>15</sup> John Tepper-Marlin is formerly Adjunct Professor at the Stern School of Business at New York University and Jurgen Brauer is Professor of Economics at James M. Hull College of Business at Augusta State University.

global GDP in 2010. To put the meaning of this figure into perspective, the Global Financial Crisis of 2008/09 saw world economic output fall by 0.6%.<sup>16</sup>

The prospect of creating a world that is totally at peace is evidently a utopian proposition. However it is possible to envisage a 25% reduction in violence as an achievable benchmark. Such a reduction in violence applied equally across the globe would create an additional US\$2 trillion in global economic activity.<sup>17</sup> This amount would cover the cost of achieving the Millennium Development Goals, eliminate the public debt of Greece, Portugal and Ireland, and address the one-off rebuilding costs of the most expensive natural disaster in history – the 2011 Japanese earthquake and tsunami – still leaving US\$1 trillion over for other forms of investment.

IEP-commissioned research also shows per capita income increases as peacefulness increases. On average, per capita income increases by US\$3,100 for every 10 places that a country rises up the Global Peace Index.<sup>18</sup> Additionally, per capita expenditure on footwear and clothing increases by US\$87 per person and expenditure on food and non-alcoholic beverages increases by US\$132. Such increases in expenditures can be observed for many other consumables and underscores the positive interdependence between peace and economic growth.

### *Equitable Distribution of Resources*

The Equitable Distribution of resources in society refers not just to income distribution but also to the evenness of the broader development process, such as whether people have access to basic needs like healthcare, transportation, education or access to just legal processes. Uneven distribution of resources can generate fundamental inefficiencies within the system as well as lead to alienation of groups and a depletion of human capital.

In conceptual terms, inequality is about much more than poverty, which may only measure whether an individual or household's income is below a certain level. In both undeveloped and developed nations, access to health or first order needs, should be seen as more important than the distribution of income. This approach does not attempt to apply a particular value judgment to what constitutes an 'ideal' level of resource distribution. Often what is determined as an 'acceptable' level of distribution varies from country to country and can be contingent on the mix of economic and political circumstances, as well as local cultural attitudes and values.

---

<sup>16</sup> Brauer, J. & Tepper-Marlin, J. (2009), *Defining Peace Industries and Calculating the Potential Size of a Peace Gross World Product by Country and by Economic Sector*, The Institute for Economics and Peace, <[www.economicsandpeace.org/UserFiles/File/DefiningPeaceIndustrieAndCalculatingAPeaceWGP.pdf](http://www.economicsandpeace.org/UserFiles/File/DefiningPeaceIndustrieAndCalculatingAPeaceWGP.pdf)>.

<sup>17</sup> 2011 Global Peace Index (2011), The Institute for Economics and Peace. Available at: <[www.visionofhumanity.org/info-center/global-peace-index-2011/](http://www.visionofhumanity.org/info-center/global-peace-index-2011/)>.

<sup>18</sup> 2009 Global Peace Index Discussion Paper (2009) The Institute for Economics and Peace; Peace, its Causes and Economic Value.

The key factors linking equitable sharing of resources to peace are shown in table three. This includes the United Nations' inequality-adjusted Human Development Index as well as three separate composite indices combining qualitative and quantitative measures of gender equality.

**Table 3: Equitable Distribution of Resources correlations with the GPI**

Source	Index	Indicator	Year	Correlation Coefficient
United Nations	Human Development Index	Overall Score	2010	-0.573
		Inequality Adjusted Score	2010	-0.534
		Inequality Adjusted Life Expectancy	2010	-0.543
		Inequality Adjusted Education	2010	-0.548
		Inequality Adjusted Income	2010	-0.569
Institute of Social Studies	Indices of Social Development	Gender Inequality	2010	-0.528
Economist Intelligence Unit		Gender Inequality	2011	-0.510
World Economic Forum	Gender Gap Index	Overall Score	2010	-0.525

The Human Development Index (HDI)<sup>19</sup>, produced by the United Nations Development Programme (UNDP) ranks countries in areas such as life expectancy, education, standard of living and GDP. It should be noted that these are not measures of inequality; rather they are measures of overall development. Now, with twenty years of data, the HDI is considered the most authoritative measure of the overall level of development in nations.

Introduced in 2010, the inequality-adjusted HDI (IHDI) is a measure of human development that aims to account for the impact of inequality on human development. According to the UN, under perfect equality the HDI and IHDI are equal; the greater the difference between the two, the greater the inequality on measures of income, education and life expectancy.<sup>20</sup> The data for inequality measurement comes from a variety of sources and measures inequality on the key factors that make up the HDI.<sup>21</sup>

<sup>19</sup> The aim of the HDI is to 'shift the focus from the national income accounting to people-centered policies' by evaluating development not only by economic advances but also improvements in human well-being. See ul Haq, M. (1995), *Reflections on Human Development*, Oxford University Press.

<sup>20</sup> The inequality-adjusted HDI (IHDI) measures the average level of human development of people in a society after inequality has been taken into account. For details, see *Human Development Reports* <[hdr.undp.org/en/statistics/ihdi](http://hdr.undp.org/en/statistics/ihdi)>.

<sup>21</sup> Full list of IHDI sources is available at: <[hdr.undp.org/en/media/Sources-of-data-for-inequality-measure-in-2010.pdf](http://hdr.undp.org/en/media/Sources-of-data-for-inequality-measure-in-2010.pdf)>.

Interestingly, the overall score for the standard HDI correlates more closely with the GPI ( $r = -0.573$ ) than the IHDI ( $r = -0.534$ ). However, a more valid comparison is to the internal GPI peace score, which excludes the various external measures such as military expenditure, number of armed service personnel, number of heavy weapons, military capability and number of external conflicts fought. When only comparing the internal GPI score to the IHDI, the correlation is much stronger at  $r = -0.653$ . The IHDI to internal GPI correlation is visualized in figure five.

Figure 5: More peaceful nations tend to have more equitable health, income, and education outcomes

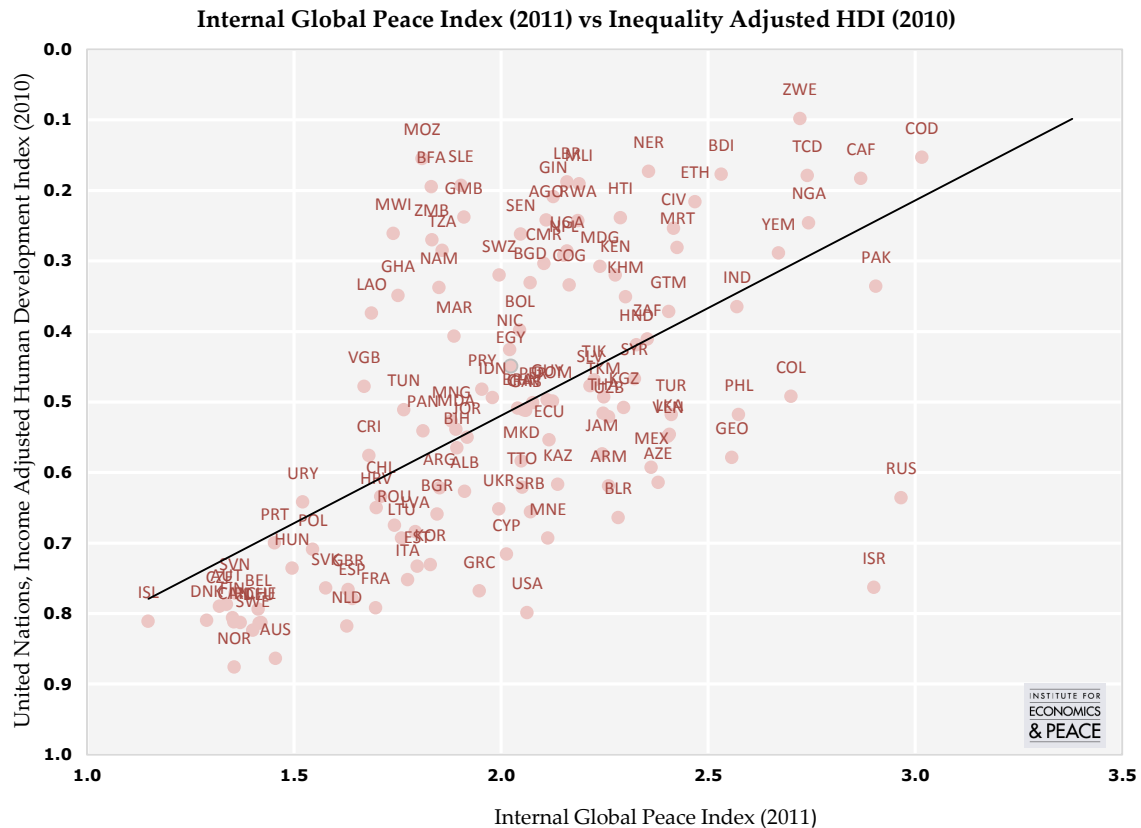
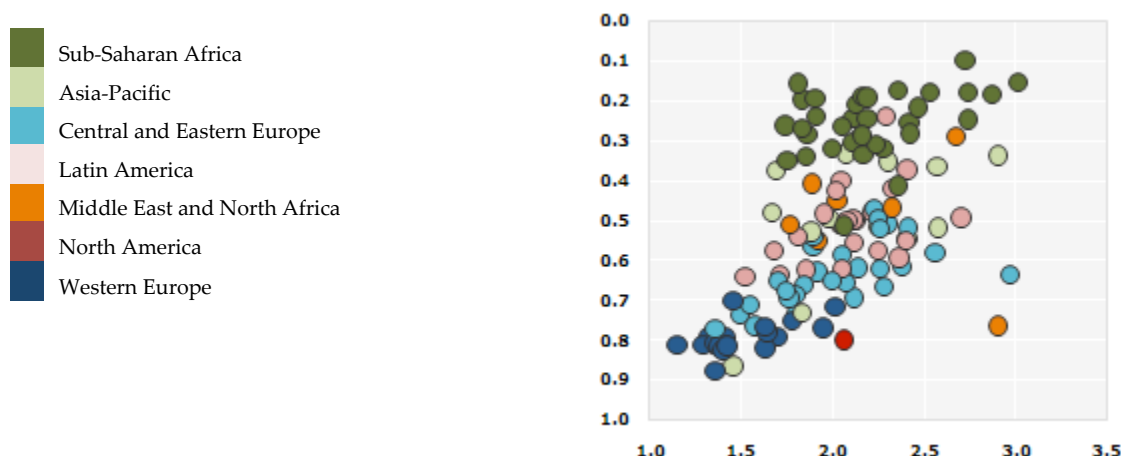


Figure 6 color-codes the IHDI to GPI correlation by geographic region, showing stark and distinct divergences between the different geographic regions of the world. Clearly African, South Asian and particular Middle Eastern states have the highest levels of human development inequality, with Western European countries clustered very tightly in the bottom left of the plot as high-peace and high-equality in human development countries.

**Figure 6: Inequality in human development is greater in less peaceful countries and is divided along regional lines**



Several additional equity-related data sets were compared to the GPI and its sub-components to specifically understand how income inequality is linked to peace. The Gini coefficient is the best known measure of income inequality. It calculates the distribution between the richest and the poorest individuals within a country; indicating a value of 0 for complete equality to 1 for maximal inequality.

It did not correlate meaningfully, either with the GPI's overall score or the internal GPI peace score although internal peace was near the significant level at  $r = 0.45$ . The GPI Violent Crime measure also correlated with the IMDI.

**Table 4: Internal GPI indicators and violent crime versus other inequality metrics**

Source	Indicator	Description / Source	Year	Correlation Coefficient to Gini Coefficient	Correlation Coefficient to IHDI (Income)	Correlation Coefficient to IHDI (Education)	Correlation Coefficient to IHDI (Life expectancy)
Global Peace Index	Internal Peace Score	Aggregate of 13 Internal GPI indicators	2011	0.447	-0.711	-0.654	-0.642
Global Peace Index	Violent Crime	Level of Violent Crime (EIU Analysts)	2011	0.474	-0.589	-0.511	-0.538

### Gender inequality

Three measures of gender inequality were found to be meaningful. A composite measure of gender equality by the International Institute of Social Studies' (ISS) *Indices of Social Development* (ISD) shows a correlation of  $r = -0.53$  with the GPI. This measure combines quantitative, qualitative and survey based data on gender equality in public, at work, and in private. Data are available for a large number of countries on indicators such as *CIRI*<sup>22</sup> rating of women's

<sup>22</sup> Subset of the Cingranelli-Richards Human Rights Data Project (see note 25).

social and economic rights, the percentage of the labor force that is female, and the ratio of females to males in primary, secondary, and tertiary schooling. This is reaffirmed with two other comprehensive gender inequality metrics - the World Economic Forum's *Gender Gap Index* as well as the EIU's gender inequality measure.

## Acceptance of the Rights of Others

Acceptance of the Rights of Others is a category designed to include both the formal institutions that basic rights and freedoms as well as the informal social and cultural norms that relate to the behaviors of citizens. These factors relate to tolerance between the different ethnic, linguistic, religious, and socio-economic groups within a country. This includes both composite index measures from the ISS and the Escola de Cultura de Pau, as well as attitudinal survey data from World Public Opinion, World Values Survey and Pew Global Attitudes.

One of the strongest set of correlations with the Global Peace Index is in relation to human freedoms and rights. To better understand the relationship between rights and peace, this discussion focuses on correlations between the Human Rights and Rule of Law measures, ISS's *Intergroup Cohesion* measure, Cingranelli-Richards *Human Rights Data Project*, and Escola de Cultura de Pau's Human Rights index. As can be seen in table five all three composite indices are strongly related at significance levels greater than  $r = 0.74$ .

**Table 5: Correlations between indices which are proxies for the Acceptance of the Rights of Others and the GPI**

Source	Index	Indicator	Year	Correlation Coefficient
Institute for Social Studies	Indices of Social Development	Intergroup Cohesion	2010	-0.798
Escola de Cultura de Pau	Human Rights Index	Score	2010	0.764
Cingranelli-Richards	Human Rights Data Project	Overall Score	2009	-0.743
<b>Attitudinal Surveys<sup>23</sup></b>				
Question	Source	Sample Size	Year	Correlation Coefficient
More likely to reject any use of torture, including against terrorists	World Public Opinion	19 countries, 19,000 respondents	2008	-0.72
More likely to support leaders who take a cooperative and compromising approach	World Values Survey	N/A	2004	-0.68
More likely to see their country as having average morality in its foreign policy	World Public Opinion	21 countries, 21,000 respondents	2009	-0.47
More likely to think that it is important to understand other preferences in building good relations	World Values Survey	33 countries, 47,000 respondents	2004	0.47

<sup>23</sup> For attitudinal surveys, a correlation of  $r > 0.4$  or  $r < -0.4$  was determined to be a statistically significant correlation.

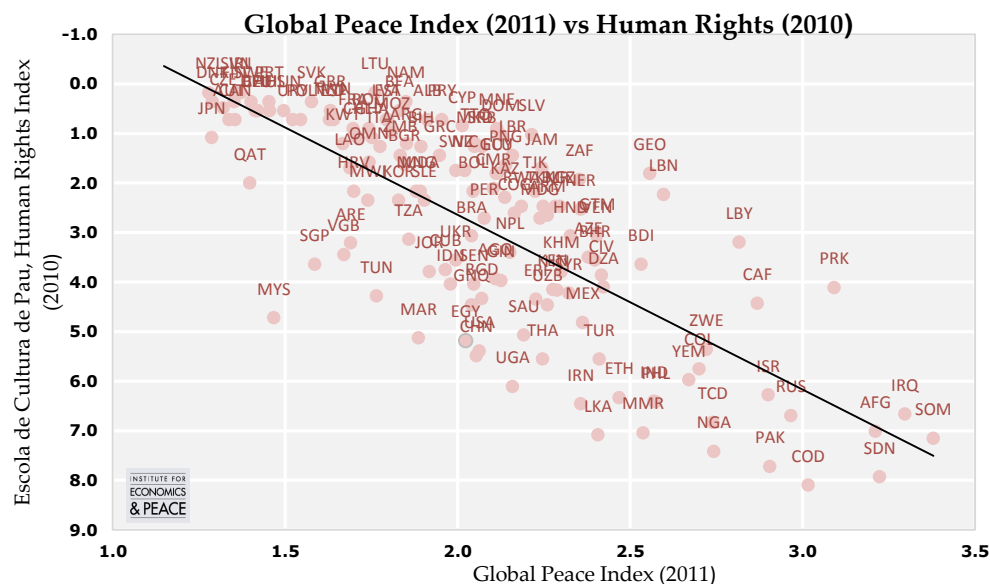
The Escola de Cultura de Pau's *Human Rights Index*<sup>24</sup> ( $r = 0.76$ ) measures the degree of noncompliance of the obligations of states to human rights and international humanitarian law. It covers 22 indicators which are grouped into the following three dimensions:

- Failure to ratify the principle instruments of human rights and international humanitarian law;
- Violation of the international law on human rights; and
- Violation of international humanitarian law.

Similarly, the Cingranelli-Richards *Human Rights Data Project*<sup>25</sup> ( $r = -0.74$ ) which measures government respect and commitment to internationally recognized human rights norms also strongly links to peace. This is a comprehensive qualitative index of 15 indicators and has a long running time series back to 1981.

Figure 7 shows the strong correlation between compliance with human rights obligations as measured by Escola de Pau and the GPI. The most peaceful nations and nations that are compliant to human rights law are found in the top left of graph, displaying several Western European nations, as well as the Asia-Pacific nations of Australia, New Zealand and Japan. This demonstrates the importance of the adoption and enforcement of laws related to people's rights, the enforcement role of formal institutions, and finally the oversight provided by civil society organizations. The latter often help to ensure governments are accountable to their international legal obligations.

**Figure 7: Compliance with international human rights norms is strongly associated with peace**



<sup>24</sup> Amado, P., Arestizábal, P., Ariño, A., Ariño, M., Armengol, V., Aspa, J., Chevalier, M., Francesch, M., García, J. (2010), *Alert 2010! Reports on Conflicts, Human Rights and Peacebuilding*, Escola de Cultura de Pau.

<sup>25</sup> Cingranelli, D. & Richards, D. (2010), *The Cingranelli-Richards Human Rights Dataset*, CIRI Human Rights Data Projects, <cirri.binghamton.edu>.



Informal social and cultural norms that relate to behaviors of citizens are equally important in determining whether there are appropriate levels of tolerance and acceptance of people's rights within the society. Intergroup Cohesion is a newly available composite dataset from the ISS which measures a range of metrics to effectively quantify this effect in different nations effectively. According to the ISS, this measure 'refers to relations of cooperation and respect between identity groups in a society'.<sup>26</sup>

More than half of the indicators making up the Intergroup Cohesion measure are qualitative survey questions on the acceptance of other ethnic groups and attitudes about perceived discrimination on the basis of ethnicity, nationality or immigration status. Other measures that are surveyed include level of religious tensions, number of violent riots, and the likelihood of violent acts. Where there is low trust between ethnic groups and sentiments of unfair treatment, peace is unlikely to flourish and the formal institutions and laws of the nation are less likely to be able to facilitate reconciliation of differences.

In situations where social cooperation totally breaks down, there is the potential for myriad of violent outcomes. These violent acts then engender less trust and further entrench a downward vicious cycle.

### *Attitudinal survey data*

As shown in table five, various global attitudinal surveys have correlated with the GPI, providing insight into relationships between commonly held public attitudes and third party qualitative and quantitative measures of the acceptance of the rights of others. Included are correlations between the GPI and a number of global surveys, which were collated for the IEP by the Program on International Policy Attitudes (PIPA) at the University of Maryland.<sup>27</sup> The surveys come from a variety of sources and measure attitudes on the use of torture, foreign policy, and country morality.

The two World Values Survey<sup>28</sup> questions showed that citizens of peaceful countries tend to support leaders who take a compromising and cooperative approach and think it important to understand others' preferences in building good relations.

---

<sup>26</sup> Intergroup Cohesion (2010), *Indices of Social Development*, Institute of Social Studies, <[www.indsocdev.org/intergroup-cohesion.html](http://www.indsocdev.org/intergroup-cohesion.html)>.

<sup>27</sup> Program on International Policy Attitudes (2009), *The GPI and Multi-National Attitude Research*, The Institute for Economics and Peace, <[www.economicsandpeace.org/UserFiles/File/TheGPIAndMulti-NationalAttitudeResearch.pdf](http://www.economicsandpeace.org/UserFiles/File/TheGPIAndMulti-NationalAttitudeResearch.pdf)>.

<sup>28</sup> World Values Survey (2005), <[www.worldvaluessurvey.org/index\\_surveys](http://www.worldvaluessurvey.org/index_surveys)>.

This is related to responses from two World Public Opinion surveys on the topics of torture<sup>29</sup>, and foreign policy.<sup>30</sup> These were significantly correlated to the Global Peace Index. The response to the likelihood of rejecting the use of torture, including against terrorists was most strongly linked to the GPI ( $r = -0.72$ ), closely followed by whether individuals are more likely to support leaders who take a cooperative and compromising approach ( $r = -0.68$ ).

When considered together, commitment to human freedoms and societal attitudes towards foreigners can be informative descriptors of how the citizens of a country accept the rights of people from other nations. These various statistical relationships make a compelling case for further research on how informal attitudes, norms and behaviors relate to real political decision-making and the role they have in fostering peace.

### *Good Relations with Neighbors*

Good Relations with Neighbors refer to both the relations between communities within a nation and to the relationships between neighboring states. This is based on the interdependent nature of the relationships investigated, as countries with positive external relations are more peaceful and also tend to be politically stable. They also have well-functioning governments, are regionally integrated, have low levels of organized internal conflict and greater interpersonal trust.

As a measure of external peacefulness in the GPI, the quality of relations with neighboring states<sup>31</sup> is an important indicator in determining the peace score of particular countries in the GPI. The most peaceful nations tend to score very well on the relations with neighboring countries metric. This is in part because a country's overall state of peace is heavily reliant on the way it conducts its relations with its immediate neighbors. Aggressive neighborly relations tend to accompany higher than average military expenditure, more armed services personnel, a greater number of aggregate heavy weapons per capita and more displaced people. In addition, hostile relations virtually prohibit the possibility of regional economic integration, eliminating the chance of mutual gains from trade.<sup>32</sup> Countries rated as aggressive are grouped around hot spots in Asia, Africa and the Middle East, and generally have poorly functioning governments. By contrast, peaceful neighborly relations are apparent between countries that reject conflict as

---

<sup>29</sup> World Public Opinion (2008), *World Public Opinion on Torture*, The Program on International Policy Attitudes, <[www.worldpublicopinion.org/pipa/pdf/jun08/WPO\\_Torture\\_Jun08\\_packet.pdf](http://www.worldpublicopinion.org/pipa/pdf/jun08/WPO_Torture_Jun08_packet.pdf)>.

<sup>30</sup> *Ibid* (2009), *Most People Think Their Nation's Foreign Policy is Morally No Better Than Average: Global Poll*, The Program on International Policy Attitudes, <[www.worldpublicopinion.org/pipa/pdf/jan09/WPO\\_MoralityFP\\_Jan09\\_rpt.pdf](http://www.worldpublicopinion.org/pipa/pdf/jan09/WPO_MoralityFP_Jan09_rpt.pdf)>.

<sup>31</sup> Measured by EIU analysts, the 'Relations with Neighboring Countries' indicator is a qualitative assessment of the intensity of contentiousness between neighbors. Using a scale from 1 to 5, where 1 is 'peaceful' and 5 'very aggressive', countries are rated on: the frequency of conflict; level of aggression; an economic and diplomatic openness.

<sup>32</sup> Brown, O., Khan, S. R. & Shaheen, F. H. (2009), 'Introduction' in *Regional Trade Integration and Conflict Resolution*, S. R. Khan (ed.), London: Routledge, pp. 5-6.

a means of dispute settlement, encourage strong diplomatic and business links, and tend to avoid aggressive diplomatic posturing.

Table 6 lists correlations between both survey and qualitative index data, looking at measures of external integration at the country level and social attitudes to foreigners. The country level indicators are the EIU's *Extent of regional integration*<sup>33</sup> measure while social attitudes are measured by EIU's *Hostility to foreigners/private property*, *Willingness to fight*, the ISS *Interpersonal Safety and Trust* measure, and two survey based datasets from Pew Global Attitudes.

**Table 6: Relations between individuals and between nations-states relate to peace**

Source	Index	Indicator	Year	Correlation Coefficient
Economist Intelligence Unit		Hostility to foreigners/private property	2011	0.637
		The extent of regional integration	2011	0.630
		Willingness to fight	2011	0.415
ISS	ISD	Interpersonal safety and trust	2010	-0.503
<b>Attitudinal Surveys<sup>34</sup></b>				
Question	Source	Sample Size	Year	Correlation Coefficient with GPI
Less likely to see their culture as superior	Pew Global Attitudes	49 nations, 66,000 people	2004	0.50
Less likely to think that their way of life needs to be protected against foreign influence	Pew Global Attitudes	49 nations, 66,000 people	2004	0.40

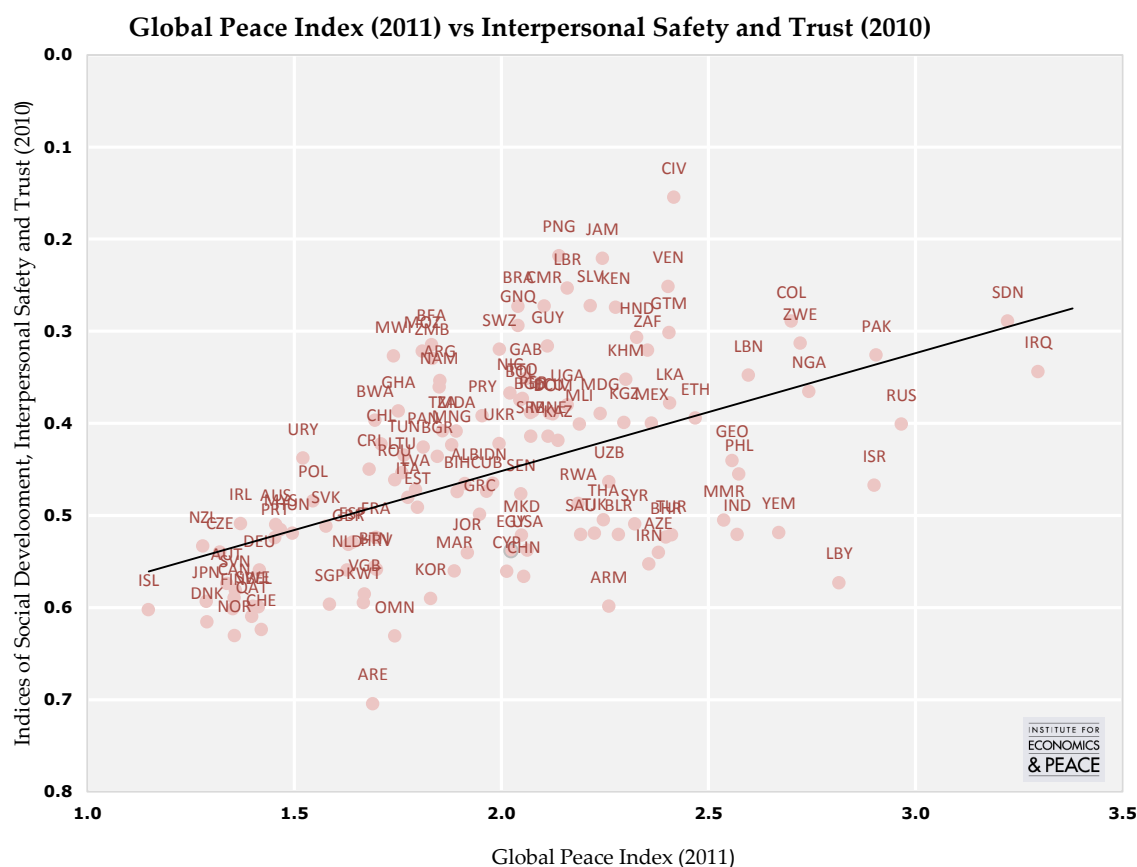
In figure 8 over the page, the relationship between ISD's Interpersonal Safety and Trust measure is visualized with the GPI. This composite measure records over 35 separate data sources, ranging from the Afrobarometer, Latinobarometer and Asian barometer surveys, as well data from Interpol, the International Crime Victim Survey and World Values Survey. These measures are intended to be proxies for the extent to which individuals in society feel they can rely on those whom they have not met before, indicating how easy it is for individuals to form group associations, the cost of social organization, and the likelihood of collective action.<sup>35</sup>

<sup>33</sup> Measures whether a country belongs to an economic union or regional trade grouping. More detail available here: <[http://graphics.eiu.com/files/ad\\_pdfs/CF\\_PDF.pdf](http://graphics.eiu.com/files/ad_pdfs/CF_PDF.pdf)>.

<sup>34</sup> *Supra* reference 25.

<sup>35</sup> Further details are available here: <<http://www.indsocdev.org/interpersonal-safety-and-trust.html>>.

Figure 8: The more peaceful a society is, the higher interpersonal safety and trust tends to be



Pew Global Attitudes questions how likely people are to see their culture as superior indicates their tolerance towards other cultures. It shows people in more peaceful countries are less likely to view their own culture as superior, while similarly people in peaceful countries are less likely to think their way of life needs to be protected against foreign influence. Intuitively, these attitudes are also associated with the EIU *Willingness to Fight* measure.

Similarly, a Pew Global Attitudes survey<sup>36</sup> showed that countries whose citizens are less likely to see their culture as superior or needing to be protected against foreign influence are generally more peaceful.

Divisions over nationalism, ethnicity, and religion are often reported to be factors in conflicts. It appears to follow that broad social attitudes are reflected at the national level, affecting political and diplomatic relations and nation's potential future trajectory towards peacefulness. A study conducted by researchers at the Victoria University of Wellington, New Zealand on societal

<sup>36</sup> Pew Global Attitudes Project (2004), *A Global Generation Gap*, Pew Research Center, <[pewglobal.org/2004/02/24/a-global-generation-gap/](http://pewglobal.org/2004/02/24/a-global-generation-gap/)>.

values and the GPI<sup>37</sup> showed strong and consistent correlations between harmony, hierarchy (negative) and intellectual autonomy.<sup>38</sup> Overall, an integrated set of values was found to be systematically related to the GPI, with effects remaining strong and stable even when controlling for economic, societal or political development and perceptions of corruption. However, while this showed values and attitudes do matter, and correlated strongly, economic and developmental indicators consistently correlated higher with the GPI than values did.

## *Free Flow of Information*

Free Flow of Information captures how easily citizens can gain access to information, whether the media is free and independent, as well as the extent to which citizens are informed and engaged in the political process. In this sense free flow of information is an attempt to account for the degree of access to information as well as the independence of that information from vested political and economic interests.

Freedom of information can have many flow-on effects for society as the open dissemination of information helps play a key role in keeping governments accountable, driving economic efficiencies and enabling individuals plus civil society to better participate in political processes and express opinions without fear. While measurement of the various qualitative aspects of particular forms of information dissemination is somewhat subject to value judgment, a necessary 'first step' is to understand whether there is access to the technologies and mediums which spread information. This is measured through ISS's *Civic Activism* measure and the UN's *Internet Access* measure, which can be seen as proxies for whether there is access to the mediums which enable information dissemination.

The relative level of independence of that information is measured through the Reporters Without Borders *Press Freedom Index* and Freedom House's *Freedom of the Press Index*. The Gallup World Poll question on 'ability to express a political opinion without fear' can be seen as the 'outcome' of free flow of information.

Shown in table seven are the correlating factors which show ISS's *Civic Activism* and *Internet Access* as the strongest correlating factors, followed by the measures of press freedom. In the *Press Freedom Index*, Reporters Without Borders measures the degree of freedom journalists and news organizations experience in each country and the efforts made by the state to respect and guarantee this freedom.<sup>39</sup> It is based on survey questionnaires to Reporters Without Borders correspondents as well as other journalists, researchers, jurists and human rights activists.

---

<sup>37</sup> See Fischer, R. & Hanke, K. (2009), 'Are Societal Values Linked to Global Peace and Conflict?' in *Peace & Conflict*, 15:3, pp. 227 – 248.

<sup>38</sup> Intellectual Autonomy: People are viewed as autonomous bounded entities; they are expected to cultivate and express their own ideas and intellectual directions.

<sup>39</sup> Press Freedom Index (2010), *Reporters Without Borders*, <[en.rsf.org/press-freedom-index-2010,1034.html](http://en.rsf.org/press-freedom-index-2010,1034.html)>.

Freedom House's *Freedom of the Press* measure returns a very similar correlation at  $r = 0.59$ . Peaceful countries are also correlated with Gallup's *World Poll* question on an individual's ability to express a political opinion without fear.

**Table 7: Free flow of information is associated with peace**

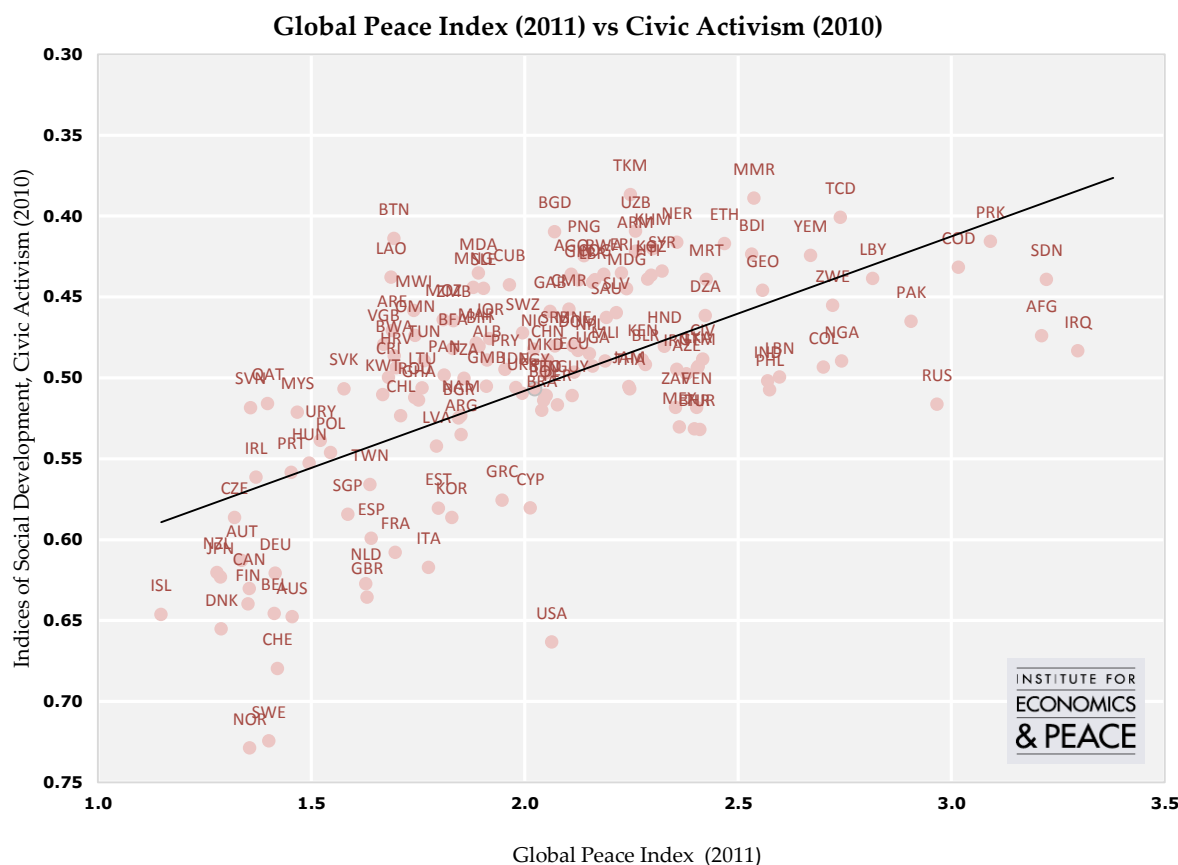
Source	Index	Indicator	Year	Correlation Coefficient
Institute for Social Studies	Indices of Social Development	Civic Activism	2010	-0.614
United Nations	Human Development Index	Internet Access	2008	-0.622
Reporters Without Borders	Freedom of the Press Index	Overall Score	2011	0.559
Freedom House	Freedom of the Press	Rating	2011	0.599
Gallup	World Poll	Ability to Express Political Opinion without Fear	2010	-0.559

ISS's *Civic Activism* indicator refers to a mix of quantitative, qualitative and survey-based measures of civic participation, focusing on the ability of citizens not only to be informed about the actions of their governments, but also their ability to demand representation and hold their governments accountable. Some of the measures used include the proportion of people who have listened to news broadcasts several times in a week, the number of radios and newspapers per capita, and the number of INGOs with members in a given country.

In this sense civic activism is not measuring direct political involvement but rather measuring if citizens have the means to remain well informed. This can be seen as an important precursor for people using this information in their daily lives so they can have informed conversations and be able to understand, and if necessary, voice concerns about services or contribute to democratic processes.

Shown in figure nine is the ISS *Civic Activism* composite index linked to the GPI score. The only distinctive trend is the Northern European nations clustered in the bottom left of the plot as high-peace, high-civic activism countries. The United States is perhaps the most notable outlier, as a high-civic activism, moderate-peace nation.

Figure 9: Robust civic activism and participation is higher in more peaceful nations



In high, upper-middle, and even lower-middle income economies<sup>40</sup>, internet access is a critical medium for information dissemination. Using the UN measure of internet access provides a useful proxy measure for the percentage of people with access to information in a country.<sup>41</sup> This measure has increased in importance as the internet has become a primary medium for information dissemination. As recently as May 2011, the UN Human Rights Council declared internet access as a human right, and disconnection or filtering measures during political unrest or other circumstances is likely to be in violation of the International Covenant on Civil and Political Rights.<sup>42</sup>

This reinforces the view that the free flow of information and tools such as the internet can help foster more accountable and responsive governance, increasing understanding of the rights of

<sup>40</sup> The World Bank classifies countries into four groups: low income, lower middle income, upper middle income and high income countries.

<sup>41</sup> Data for 'Internet Users per 100 Population' is available from the United Nations Statistics Division: [data.un.org/Data.aspx?q=internet&d=MDG&f=seriesRowID%3a605](http://data.un.org/Data.aspx?q=internet&d=MDG&f=seriesRowID%3a605).

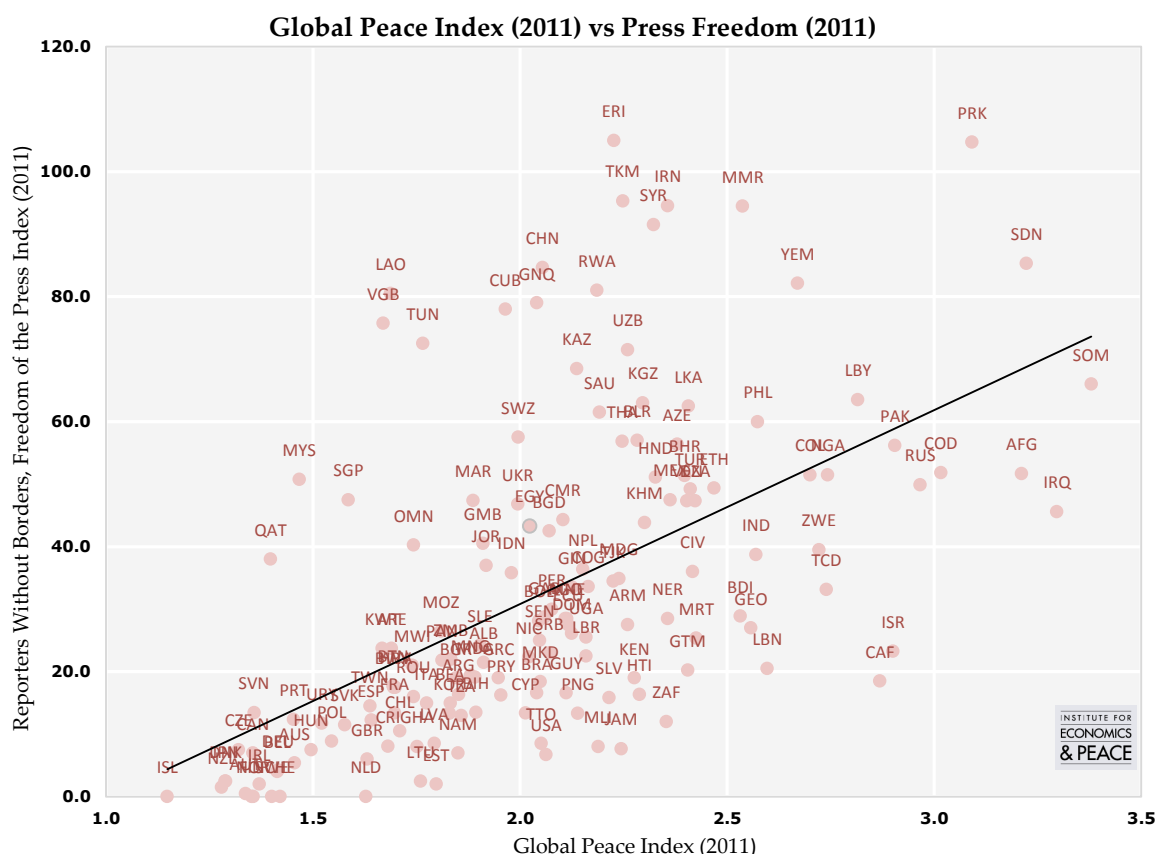
<sup>42</sup> La Rue, F. (2011), *Report of the Special Rapporteur on the promotion and protection of the right to freedom of opinion and expression*, United Nations Human Rights Council, [www2.ohchr.org/English/bodies/hrcouncil/docs/17session/A.HRC.17.27\\_en.pdf](http://www2.ohchr.org/English/bodies/hrcouncil/docs/17session/A.HRC.17.27_en.pdf).



others, helping effect a more equal distribution of resources, and finally educating as well as increasing the productivity of individuals.

The level of internet access varies significantly across nations, as does press freedom. Figure ten demonstrates this variation using the Reporters Without Borders *Freedom of the Press Index* measure.

Figure 10: Most peaceful nations have more press freedom



## High Levels of Education

Effective educational institutions play an important structural role in the most peaceful countries. A broad education base creates a larger pool of human capital which improves economic productivity, enables political participation and increases social capital. In many ways education is a fundamental building block through which societies can build resilience and develop mechanisms to adapt, respond effectively to, and learn from crises.

The GPI correlates with many, though not all, indicators in this area suggesting that peace and education are closely linked. Four measures of education outcomes are listed in table eight, with

the Legatum Prosperity Index's *Education Sub-Index*<sup>43</sup> sharing the strongest relationship with the GPI.

**Table 8: Education correlations with the GPI**

Source	Index	Indicator	Year	Correlation Coefficient
Economist Intelligence Unit/UNESCO		Mean years of schooling	2011	<b>-0.532</b>
Gallup	World Poll	Perception that Children are Learning in Society	2010	<b>-0.524</b>
Legatum Foundation	Legatum Prosperity Index	Education Sub-Index Score	2010	<b>-0.631</b>
		Secondary Education per Worker	2010	<b>-0.521</b>
IEP	United States Peace Index	High School Graduation rate	2007	<b>-0.72*</b>
		Percentage with at least a high school diploma	2009	<b>-0.63*</b>

\*Correlation to relative level of violence within each U.S. State.

One of the most consistent correlations with the GPI has been the mean years of schooling measure collected by the United Nations Educational, Scientific and Cultural Organization (UNESCO). These data count the primary to tertiary school participation in number of years of schooling and show the overall level of development of an educational system.<sup>44</sup> It uses the school life expectancy measure, which is the number of years of education the average citizen receives in their lifetime, and is considered one of the most important measures of a nation's education system.

As can be seen in Figure 11, mean years of schooling is starkly related to the most peaceful and least peaceful nations, and has an even stronger correlation to the internal GPI score ( $r = -0.610$ ). This has been reinforced in IEP research at the national level – the United States Peace Index (USPI) – which showed strong state-level correlations between violence and lower high school graduation rates/a lower percentage of people with a high school diploma.<sup>45</sup>

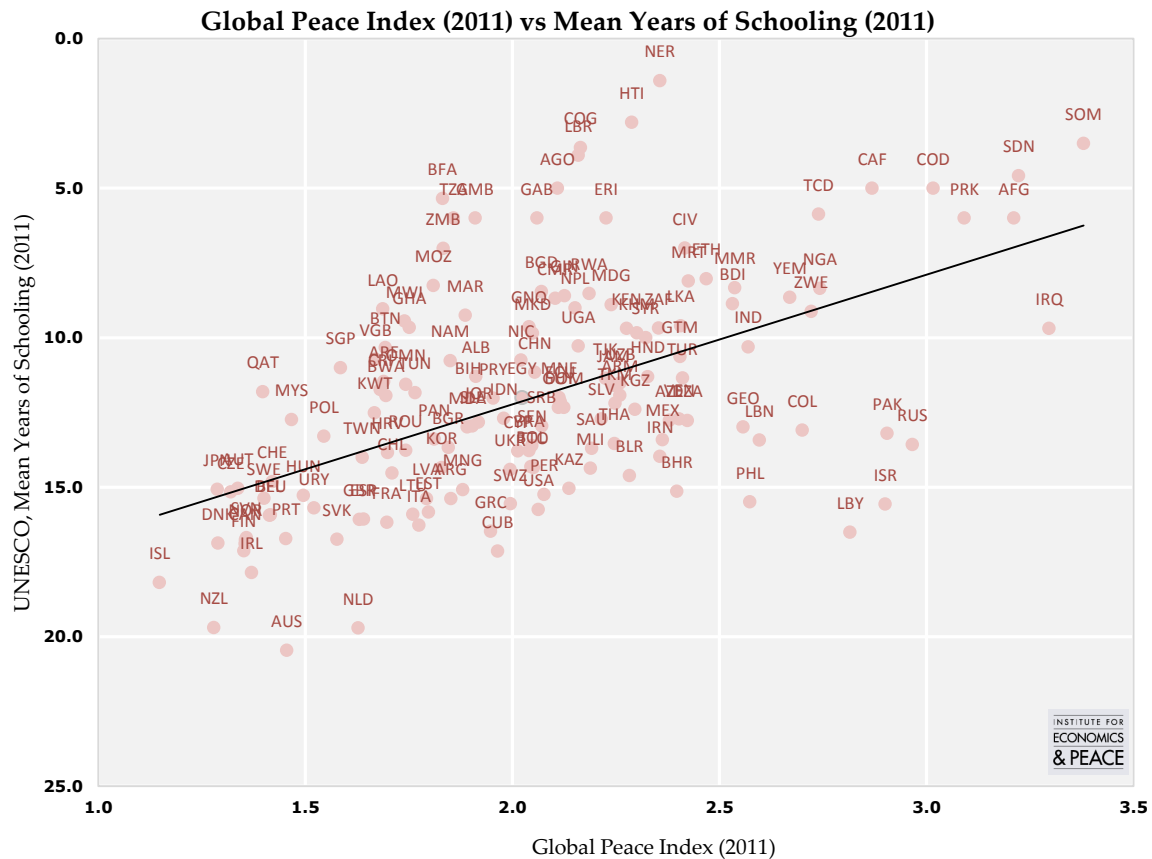
It is interesting to note that the percent of GDP that governments spend on education does not correlate with the GPI, nor does it correlate with the mean years of schooling. As demonstrated in Appendix III the percentage of GDP spent on education is the weakest correlation with the GPI of all the education factors examined ( $r = -0.34$ ). Similarly, the USPI showed funding per student by state in the United States is not linked to peace. This factor is meaningful at both the global level and the sub-national level (within the United States).

<sup>43</sup> The Education Sub-Index measures countries' performance in three areas: access to education, quality of education, and human capital. <<http://www.prosperity.com/education.aspx>>.

<sup>44</sup> Social Indicators (2009), *School Life Expectancy*, United Nations Statistics Division, <[unstats.un.org/unsd/demographics/products/socind/education.htm](http://unstats.un.org/unsd/demographics/products/socind/education.htm)>.

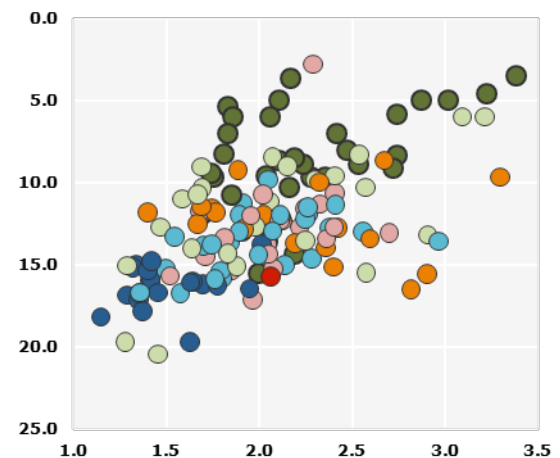
<sup>45</sup> 2011 United States Peace Index, Institute for Economics and Peace, pp. 20 – 21. See, <[www.visionofhumanity.org/wp-content/uploads/2011/04/U.S.-Peace-Index-2011-3.pdf](http://www.visionofhumanity.org/wp-content/uploads/2011/04/U.S.-Peace-Index-2011-3.pdf)>.

Figure 11: People in more peaceful societies spend more years at school



Low levels of school participation and enrolment is evident in impoverished countries throughout the world, particularly in Sub-Saharan Africa and parts of Asia. Many of these nations have around five years of lifetime schooling, compared to an average in several peaceful Scandinavian countries of nearly 20 years of schooling. This regional divide is clearly shown in figure 12. The dark green data points of African countries at the top of the plot are especially troubling.

Figure 12: Mean years of schooling - regional disparities



## Low Levels of Corruption

Corruption has long been associated with high levels of violence. Two indexes focusing on corruption, Transparency International's *Corruption Perceptions Index* (CPI) and the World Bank's World Governance Indicators *Control of Corruption* measure, were chosen as the pre-eminent global measures of corruption. Both factors were strongly correlated at a similar level of significance as is shown in table nine.

**Table 9: Corruption correlations with the GPI**

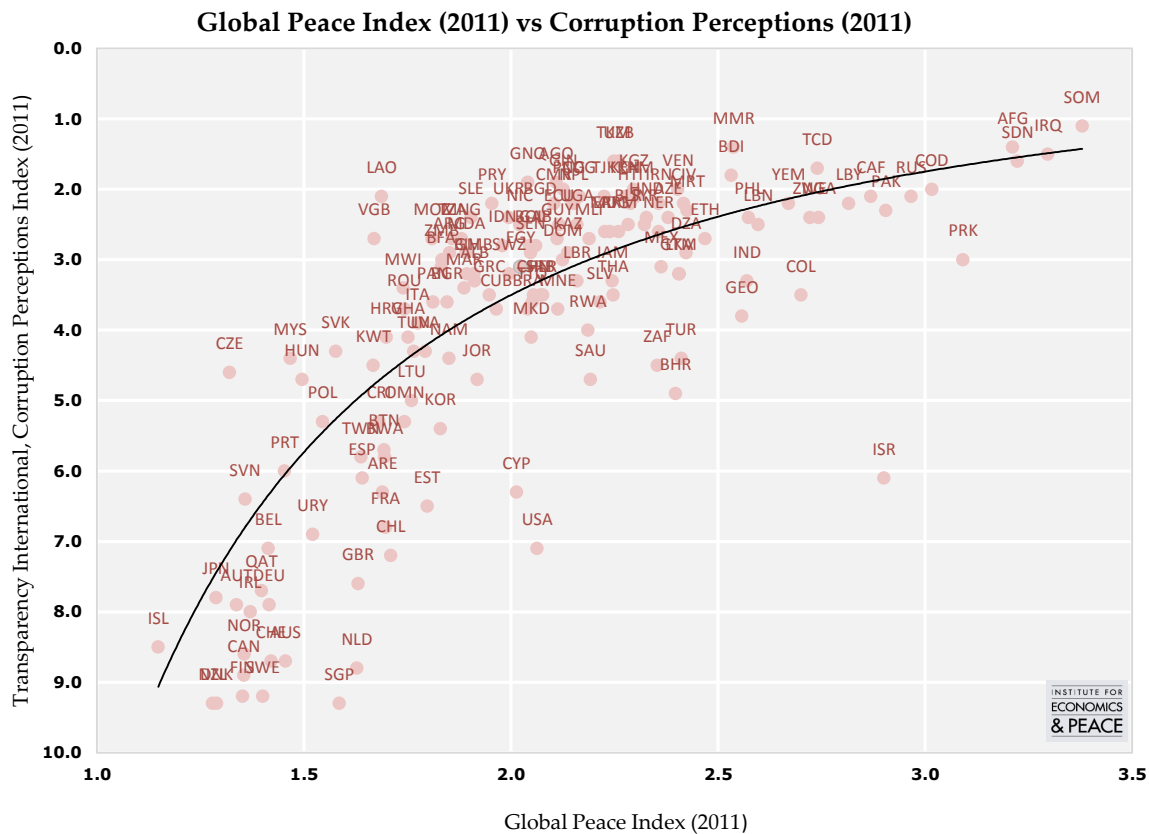
Source	Index	Indicator	Year	Correlation Coefficient
Transparency International	Corruption Perceptions Index	Overall Score	2011	-0.712
World Bank	World Governance Indicators	Control of Corruption	2010	-0.734

These strong correlations have been consistent every year of the GPI and Transparency International's Corruption Perceptions Index (CPI) correlation has improved in strength from 2008 to 2011. The CPI uses expert assessments and opinion surveys to rank societies' perceptions of public sector corruption.<sup>46</sup> It is one of the determinants most closely correlated to the GPI ( $r = -0.71$ ) and is intuitively linked to the functioning of government discussed previously. Countries are rated using a 1 – 10 scale and a visual representation of the correlation between the two data sets can be seen in figure 13. The chart shows a clear dichotomy between two types of societies: those which have low peace and are corrupt; and those which are relatively peaceful and have little corruption.

The shape of the CPI versus GPI curve shows a clustering of high corruption and moderate to low-peace nations in the top right quadrant of the figure on the next page.

<sup>46</sup> Corruption Perceptions Index (2009), *Transparency International*, <[www.transparency.org/policy\\_research/surveys\\_indices/cpi](http://www.transparency.org/policy_research/surveys_indices/cpi)>.

Figure 13: The relationship between peace and corruption appears to be nonlinear



Strong correlations have also been found with other similar indices. The World Bank Worldwide Governance Indicators sub-index of *Control on Corruption*<sup>47</sup> correlated at  $r = -0.72$  with the GPI. This indicator shows perceptions of the extent to which power is exercised for private gain, as well as the “capture” of the state by elites and private interests. The strong correlation shows the most peaceful countries also tend to be the least corrupt.

In societies with high corruption resources are inefficiently allocated, often resulting in essential services such as schools and hospitals missing out on appropriate funding. The resulting inequality can manifest itself in civil unrest and in extreme situations can be the catalyst for violence. Low corruption, by contrast, can support confidence and trust in institutions, which in turn help to create peaceful societies.

There are numerous links between corruption, as measured by the Transparency International CPI, and a variety of other societal measures employed in Transparency International’s research. For instance, corruption is very highly correlated with political instability and GDP per capita. Other strong relationships appear to exist between corruption and crime-related

<sup>47</sup> *Supra* reference 8.

indicators such as homicide and levels of violent crime, as well as equality-related indicators such as life expectancy and infant mortality.

## Conclusion

To date the overwhelming emphasis within peace and conflict studies has been placed on understanding the causes of war. In contrast, the Global Peace Index is an attempt to systematically expand and explore our understanding of peace. Now, with five years of GPI panel data, it is possible to use various statistical techniques to analyze the GPI against a rich variety of cross-country data. From this one can determine the key formal and informal institutions, and structures, that nurture and sustain peace at the nation-state level.

This paper has introduced an original conceptual framework based on empirical research which links peace with key common economic, governance and cultural attitudes as well as with a number of formal and informal institutions. These structures are intuitively understood and visualized through an eight-part taxonomy labeled the Structures of Peace. These structures are:

- **Well-Functioning Government** – Based on several factors, from how governments are elected and the political culture they engender, to the quality of the public services they deliver and their political stability. Strong relationships across a number of these indicators and sub-indicators demonstrate the interdependent nature of the various governance indicators. These measures are consistently linked to peace.
- **Sound Business Environment** – The strength of economic conditions as well as the formal institutions that support the operation of the private sector determine the soundness of the business environment. Business competitiveness and economic freedom are both associated with the most peaceful countries, as is the presence of regulatory systems which are conducive to business operation.
- **Equitable Distribution of Resources** – Refers to income distribution but more importantly to whether there is gender equity and access to resources such as education and health. Gender inequality and the UN's Inequality-adjusted Human Development Index (IHDI) correlate with the GPI and even more strongly with the GPI's internal peace measure.
- **Acceptance of the Rights of Others** – A category designed to include both the formal laws that guarantee basic human rights and freedoms as well as the informal social and cultural norms that relate to behaviors of citizens. These factors can be seen as proxies for tolerance between different ethnic, linguistic, religious, and socio-economic groups within a country. A commitment to human rights and freedom are key characteristics of peaceful countries, a claim supported by very strong correlations with several indexes measuring human rights. Also important are societal attitudes towards fellow citizens, minorities, ethnic groups and foreigners.

- **Good Relations with Neighbors** – This refers to the relations between individuals and between communities as well as to cross-border relations. Countries with positive external relations are more peaceful and tend to be more politically stable, have better functioning governments, are regionally integrated and have low levels of organized internal conflict.
- **Free Flow of Information** – Captures the extent to which citizens can gain access to information, whether the media is free and independent, as well as how well-informed citizens are and the extent of their engagement in the political process. Peaceful countries tend to have free and independent media which disseminates information in a way that leads to greater openness and helps individuals and civil society work together. This leads to better decision-making and rational responses in times of crisis.
- **High Levels of Education** – A broad education base increases the pool of human capital which in turn improves economic productivity, enables political participation and increases social capital. Education in many ways is a fundamental building block through which societies can build resilience and develop mechanisms to learn and adapt. Mean years of schooling is closely associated with the most peaceful countries. Tertiary levels of education and the percentage of government spending dedicated to education is not statistically as important.
- **Low Levels of Corruption** - In societies with high corruption resources are inefficiently allocated, often resulting in a lack of funding for essential services. The resulting inequality can lead to civil unrest and in extreme situations can be the catalyst for more serious violence. Low corruption, by contrast, can enhance confidence and trust in institutions, which in turn helps to create informal institutions which enhance peace. All of the structures associated with peace are interconnected when it comes to corruption, and causality can run in either direction.

These structures and institutions can help promote resilience in society, enabling nations to overcome adversity and resolve internal economic, cultural, and political conflict through peaceful methods.

These elements can be seen as interconnected and interacting in varied and complex ways, forming either virtuous circles of peace creation or vicious circles of peace destruction, with causality running both ways. Overall the complex and multidimensional nature of peace can be observed, underlining the need for pluralist and multidisciplinary approaches to understand the interrelationships between economic, political, and cultural factors.

As a fact-based body of analysis, this paper presents new and important cross country data that will enable policy-makers, government and the business community to deepen their understanding of the factors which shape and augment peace in society.



*Appendix I – Country codes*

COUNTRY CODES		
Country	ISO	Code:
	Alpha-3	
Afghanistan	AFG	
Albania	ALB	
Algeria	DZA	
Angola	AGO	
Argentina	ARG	
Armenia	ARM	
Australia	AUS	
Austria	AUT	
Azerbaijan	AZE	
Bahrain	BHR	
Bangladesh	BGD	
Belarus	BLR	
Belgium	BEL	
Bhutan	BTN	
Bolivia	BOL	
Bosnia and Hercegovina	BIH	
Botswana	BWA	
Brazil	BRA	
Bulgaria	BGR	
Burkina Faso	BFA	
Burundi	BDI	
Cambodia	KHM	
Cameroon	CMR	
Canada	CAN	
Central African Republic	CAF	
Chad	TCD	
Chile	CHL	
China	CHN	
Colombia	COL	
Congo (Brazzaville)	COG	
Costa Rica	CRI	
Cote d'Ivoire	CIV	
Croatia	HRV	
Cuba	CUB	
Cyprus	CYP	
Czech Republic	CZE	
Democratic Republic of the Congo	COD	
Denmark	DNK	
Dominican Republic	DOM	
Ecuador	ECU	
Egypt	EGY	
El Salvador	SLV	
Equatorial Guinea	GNQ	
Eritrea	ERI	
Estonia	EST	
Ethiopia	ETH	
Finland	FIN	
France	FRA	
Gabon	GAB	
The Gambia	GMB	
Georgia	GEO	

COUNTRY CODES		
Country	ISO	Code:
	Alpha-3	
Germany	DEU	
Ghana	GHA	
Greece	GRC	
Guatemala	GTM	
Guinea	GIN	
Guyana	GUY	
Haiti	HTI	
Honduras	HND	
Hungary	HUN	
Iceland	ISL	
India	IND	
Indonesia	IDN	
Iran	IRN	
Iraq	IRQ	
Ireland	IRL	
Israel	ISR	
Italy	ITA	
Jamaica	JAM	
Japan	JPN	
Jordan	JOR	
Kazakhstan	KAZ	
Kenya	KEN	
Kuwait	KWT	
Kyrgyz Republic	KGZ	
Laos	LAO	
Latvia	LVA	
Lebanon	LBN	
Liberia	LBR	
Libya	LBY	
Lithuania	LTU	
Macedonia	MKD	
Madagascar	MDG	
Malawi	MWI	
Malaysia	MYS	
Mali	MLI	
Mauritania	MRT	
Mexico	MEX	
Moldova	MDA	
Mongolia	MNG	
Montenegro	MNE	
Morocco	MAR	
Mozambique	MOZ	
Myanmar	MMR	
Namibia	NAM	
Nepal	NPL	
Netherlands	NLD	
New Zealand	NZL	
Nicaragua	NIC	
Niger	NER	
Nigeria	NGA	
North Korea	PRK	

COUNTRY CODES		
Country	ISO	Code:
	Alpha-3	
Norway	NOR	
Oman	OMN	
Pakistan	PAK	
Panama	PAN	
Papua New Guinea	PNG	
Paraguay	PRY	
Peru	PER	
Philippines	PHL	
Poland	POL	
Portugal	PRT	
Qatar	QAT	
Romania	ROU	
Russia	RUS	
Rwanda	RWA	
Saudi Arabia	SAU	
Senegal	SEN	
Serbia	SRB	
Sierra Leone	SLE	
Singapore	SGP	
Slovakia	SVK	
Slovenia	SVN	
Somalia	SOM	
South Africa	ZAF	
South Korea	KOR	
Spain	ESP	
Sri Lanka	LKA	
Sudan	SDN	
Swaziland	SWZ	
Sweden	SWE	
Switzerland	CHE	
Syria	SYR	
Taiwan	TWN	
Tajikistan	TJK	
Tanzania	TZA	
Thailand	THA	
Trinidad and Tobago	TTO	
Tunisia	TUN	
Turkey	TUR	
Turkmenistan	TKM	
Uganda	UGA	
Ukraine	UKR	
United Arab Emirates	ARE	
United Kingdom	GBR	
United States of America	USA	
Uruguay	URY	
Uzbekistan	UZB	
Venezuela	VEN	
Vietnam	VNN	
Yemen	YEM	
Zambia	ZMB	
Zimbabwe	ZWE	

## Appendix II – Correlation matrix of key structures\*

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
1	1.00	0.77	0.64	0.77	0.65	0.66	0.85	-0.77	-0.59	-0.63	0.58	-0.48	0.57	0.66	0.72	0.73
2	0.77	1.00	0.87	0.91	0.80	0.79	0.61	-0.56	-0.63	-0.65	0.83	-0.58	0.68	0.74	0.94	0.95
3	0.64	0.87	1.00	0.89	0.82	0.83	0.50	-0.29	-0.43	-0.45	0.79	-0.30	0.65	0.79	0.86	0.85
4	0.77	0.91	0.89	1.00	0.89	0.93	0.67	-0.59	-0.55	-0.61	0.86	-0.56	0.79	0.88	0.89	0.90
5	0.65	0.80	0.82	0.89	1.00	0.96	0.52	-0.44	-0.59	-0.44	0.77	-0.38	0.77	0.87	0.73	0.74
6	0.66	0.79	0.83	0.93	0.96	1.00	0.56	-0.50	-0.59	-0.44	0.76	-0.41	0.83	0.95	0.74	0.74
7	0.85	0.61	0.50	0.67	0.52	0.56	1.00	-0.73	-0.50	-0.56	0.49	-0.43	0.46	0.58	0.57	0.58
8	-0.77	-0.56	-0.29	-0.59	-0.44	-0.50	-0.73	1.00	0.54	0.50	-0.46	0.66	-0.47	-0.52	-0.52	-0.55
9	-0.59	-0.63	-0.43	-0.55	-0.59	-0.59	-0.50	0.54	1.00	0.48	-0.63	0.54	-0.49	-0.45	-0.54	-0.57
10	-0.63	-0.65	-0.45	-0.61	-0.44	-0.44	-0.56	0.50	0.48	1.00	-0.49	0.44	-0.42	-0.47	-0.57	-0.59
11	0.58	0.83	0.79	0.86	0.77	0.76	0.49	-0.46	-0.63	-0.49	1.00	-0.59	0.67	0.72	0.82	0.81
12	-0.48	-0.58	-0.30	-0.56	-0.38	-0.41	-0.43	0.66	0.54	0.44	-0.59	1.00	-0.38	-0.40	-0.55	-0.56
13	0.57	0.68	0.65	0.79	0.77	0.83	0.46	-0.47	-0.49	-0.42	0.67	-0.38	1.00	0.83	0.62	0.64
14	0.66	0.74	0.79	0.88	0.87	0.95	0.58	-0.52	-0.45	-0.47	0.72	-0.40	0.83	1.00	0.69	0.69
15	0.72	0.94	0.86	0.89	0.73	0.74	0.57	-0.52	-0.54	-0.57	0.82	-0.55	0.62	0.69	1.00	0.98
16	0.73	0.95	0.85	0.90	0.74	0.74	0.58	-0.55	-0.57	-0.59	0.81	-0.56	0.64	0.69	0.98	1.00

#	Structure	Index	Indicator	Year
1	Well-Functioning Government	World Governance Indicators	Political Stability	2010
2	Well-Functioning Government	World Governance Indicators	Rule of Law	2010
3	Sound Business Environment	Global Competitiveness Report	Overall Score	2011
4	Sound Business Environment	Legatum Prosperity Index	Overall Score	2010
5	Equitable Distribution of Resources	Human Development Index	Income (Inequality Adjusted)	2010
6	Equitable Distribution of Resources	Human Development Index	Overall Score (Inequality Adjusted)	2010
7	Acceptance of the Rights of Others	Indices of Social Development	Intergroup Cohesion	2010
8	Acceptance of the Rights of Others	ECP Human Rights Index	Overall Score	2010
9	Good Relations with Neighbors	Economist Intelligence Unit	The Extent of Regional Integration	2011
10	Good Relations with Neighbors	Economist Intelligence Unit	Hostility to Foreigners	2011
11	Free Flow of Information	Indices of Social Development	Civic Activism	2010
12	Free Flow of Information	Freedom of the Press Index	Overall Score	2011
13	High Levels of Education	Economist Intelligence Unit	Mean Years of Schooling	2011
14	High Levels of Education	Legatum Prosperity Index	Education Sub-Index	2010
15	Low Levels of Corruption	TI Corruption Perceptions Index	Overall Score	2011
16	Low Levels of Corruption	World Governance Indicators	Control of Corruption	2010

\*Appendix II demonstrates the interdependence between key factors

### Appendix III – Indicators weakly correlated with the GPI

Source	Index	Indicator	Year	Correlation Coefficient
Economist Intelligence Unit		Importance of religion in national life	2011	0.498
Heritage Foundation	Index of Economic Freedom	Monetary Freedom	2011	-0.488
Economist Intelligence Unit		15-34 year old males as a % of adult population	2011	0.481
World Bank	Ease of Doing Business	Enforcing Contracts	2011	0.476
Economist Intelligence Unit	Political Democracy Index	Electoral process	2011	-0.473
Economist Intelligence Unit		Higher education enrolment (% Gross)	2011	-0.466
Bertelsmann Stiftung	Sustainable Governance Indicators	Economy and Employment	2011	-0.465
World Economic Forum	Global Competitiveness Report	Labor Market efficiency	2011	-0.461
World Economic Forum	Global Competitiveness Report	Financial Market Development	2011	-0.448
Legatum Foundation	Legatum Prosperity Index	Tertiary Education per Worker	2010	-0.443
Economist Intelligence Unit		Primary school enrolment ratio (% Net)	2011	-0.441
Economist Intelligence Unit		Adult literacy rate (% of pop over 15)	2011	-0.429
Gallup	World Poll	Satisfaction with Educational Quality	2010	-0.428
Bertelsmann Stiftung		Management Score	2011	-0.423
World Bank	Ease of Doing Business	Getting Credit	2011	0.417
Gallup	World Poll	Satisfaction with Standard of Living	2010	-0.409
Economist Intelligence Unit		Number of visitors as % of domestic population	2011	-0.398
World Bank	World Development Indicators	Girls to Boys Enrolment Ratio	2010	-0.395
World Bank	World Development Indicators	Non-performing Loans	2010	0.389
World Bank	World Development Indicators	Inflation	2010	0.389
World Bank	World Development Indicators	Business Start-up Costs	2010	0.378
Bertelsmann Stiftung	Sustainable Governance Indicators	Citizens	2011	-0.376
United Nations	Human Development Index	Inequality differential	2010	0.375
Polity IV	Legatum Prosperity Index	Regime Stability	2010	-0.375
Polity IV	Legatum Prosperity Index	Government Type	2010	-0.367
World Bank	Ease of Doing Business	Paying Taxes	2011	0.366
World Bank	Ease of Doing Business	Dealing with Construction Permits	2011	0.356
Gallup	World Poll	Employment Status	2010	-0.352

Source	Index	Indicator	Year	Correlation Coefficient
Economist Intelligence Unit		Current education spending (% of GDP)	2011	-0.346
United Nations	Human Development Index	Intensity of deprivation	2008	0.345
World Economic Forum	Global Competitiveness Report	Macroeconomic Environment	2011	-0.343
World Bank	World Development Indicators	Undernourishment	2010	0.318
World Bank	World Development Indicators	Hi-tech Exports	2010	-0.317
Bertelsmann Stiftung	Sustainable Governance Indicators	Legislation	2011	-0.316
Economist Intelligence Unit		Gini Coefficient	2011	0.313
Bertelsmann Stiftung	Sustainable Governance Indicators	Policy Implementation	2011	-0.313
World Bank	Ease of Doing Business	Starting a Business	2011	0.306
World Bank	Ease of Doing Business	Registering Property	2011	0.301
Heritage Foundation	Index of Economic Freedom	Government Spending	2011	0.292
Economist Intelligence Unit		Net Migration (% of total population)	2011	-0.284
Economist Intelligence Unit		Women in Parliament	2011	-0.276
Bertelsmann Stiftung	Sustainable Governance Indicators	Institutional Learning	2011	-0.262
World Bank	Ease of Doing Business	Protecting Investors	2011	0.253
United Nations	Human Development Index	Multidimensional Poverty	2008	0.248
Heritage Foundation	Index of Economic Freedom	Labor Freedom	2010	-0.242
Heritage Foundation	Index of Economic Freedom	Labor Freedom	2011	-0.24
World Bank	World Development Indicators	Gross Domestic Savings	2010	-0.219
Economist Intelligence Unit		Unemployment %	2011	0.218

## Appendix IV - Indicators not correlated with the GPI

Source	Index	Indicator	Year	Correlation Coefficient
Gallup	World Poll	Perceived Job Availability	2010	-0.001
Gallup	World Poll	Confidence in Financial Institutions	2010	0.003
Gallup	World Poll	Government Approval	2010	0.016
Economist Intelligence Unit		Foreign Direct Investment (flow) % of GDP	2011	-0.034
Economist Intelligence Unit		Nominal GDP (US\$PPP bn)	2011	-0.052
Gallup	World Poll	Good Environment for Entrepreneurs	2010	-0.063
World Bank	World Development Indicators	Royalty Receipts	2010	-0.075
World Bank	World Development Indicators	Market Size	2010	-0.076
Gallup	World Poll	Expectations of the Economy	2010	0.101
Heritage Foundation	Index of Economic Freedom	Fiscal Freedom	2010	0.103
Economist Intelligence Unit		Gender ratio of population: men/women	2011	-0.105
Economist Intelligence Unit		Nominal GDP (US\$ bn)	2011	-0.111
Heritage Foundation	Index of Economic Freedom	Fiscal Freedom	2011	0.116
Bertelsmann Stiftung	Sustainable Governance Indicators	Steering Capability	2011	-0.116
Economist Intelligence Unit		Exports + Imports % of GDP	2011	-0.116
Gallup	World Poll	Confidence in Military	2010	-0.133
Gallup	World Poll	Confidence in the Judicial System	2010	-0.139
Gallup	World Poll	Perception that Working Hard Gets You Ahead	2010	0.15
Legatum Foundation	Legatum Prosperity Index	Voiced Concern	2010	-0.156
Gallup	World Poll	Efforts to Address Poverty	2010	-0.162
World Bank	World Development Indicators	FDI Size and Volatility	2010	0.166
World Economic Forum	Global Competitiveness Report	Market Size	2011	-0.175
World Bank	World Development Indicators	5-year rate of Growth	2010	0.189
World Bank	World Development Indicators	ICT Exports	2010	-0.189

## Appendix V – GPI indicators and sources table

Weight	Int/Ext	Type	Source	Indicator
4	internal	qualitative	EIU	Perceptions of criminality in society
3	internal	quantitative	UNODC, UNCJS, EIU	Number of internal security officers and police 100,000 people
4	internal	quantitative	UNODC, UNCJS	Number of homicides per 100,000 people
3	internal	quantitative	World Prison Population List	Number of jailed population per 100,000 people
3	internal	qualitative	EIU	Ease of access to weapons of minor destruction
5	internal	qualitative	EIU	Level of organized conflict (internal)
3	internal	qualitative	EIU	Likelihood of violent demonstrations
4	internal	qualitative	EIU	Level of violent crime
4	internal	qualitative	EIU	Political instability
4	internal	quantitative	Political Terror Scale	Respect for human rights (Political Terror Scale)
2	internal	quantitative	SIPRI Arms transfers project	Volume of transfers of major conventional weapons, as recipient (Imports) per 100,000 people
1	internal	qualitative	EIU	Potential for terrorist acts
5	internal	quantitative	IISS	Number of deaths from organized conflict (internal)
2	external	quantitative	Military Balance, National accounts, EIU	Military expenditure as a percentage of GDP
2	external	quantitative	Military Balance	Number of armed services personnel per 100,000 people
2	external	quantitative	IEP	UN Peacekeeping Data
3	external	quantitative	SIPRI, IEP	Aggregate number of heavy weapons per 100,000 people
3	external	quantitative	SIPRI Arms transfers project	Volume of transfers of major conventional weapons as supplier (exports) per 100,000 people
2	external	qualitative	EIU	Military capability/sophistication
4	external	quantitative	UNHCR Statistical Yearbook, IDMC	Number of displaced people as a percentage of the population
5	external	qualitative	EIU	Relations with neighboring countries
5	external	quantitative	Uppsala Conflict Data Program, EIU	Number of external and internal conflicts fought
5	external	quantitative	Uppsala Conflict Data Program, EIU	Estimated number of deaths from organized conflict (external)

## Bibliography

1. 2011 Global Peace Index, The Institute for Economics and Peace, 2011, <[www.visionofhumanity.org/info-center/global-peace-index-2011/](http://www.visionofhumanity.org/info-center/global-peace-index-2011/)>.
2. 2011 United States Peace Index, Institute for Economics and Peace, <[www.visionofhumanity.org/wp-content/uploads/2011/04/U.S.-Peace-Index-2011-3.pdf](http://www.visionofhumanity.org/wp-content/uploads/2011/04/U.S.-Peace-Index-2011-3.pdf)>.
3. Amado, P., Arestizábal, P., Ariño, A., Ariño, M., Armengol, V., Aspa, J., Chevalier, M., Francesch, M., García, J. (2010), *Alert 2010! Reprots on Conflicts, Human Rights and Peacebuilding*, Escola de Cultura de Pau, <[escolapai.uad.cat/img/programas/alerta/alerta/alerta10i.pdf](http://escolapai.uad.cat/img/programas/alerta/alerta/alerta10i.pdf)>.
4. Brauer, J. & Tepper-Marlin, J. (2009), *Defining Peace Industries and Calculating the Potential Size of a Peace Gross World Product by Country and by Economic Sector*, The Institute for Economics and Peace, <[www.economicsandpeace.org/UserFiles/File/DefiningPeaceIndustrieAndCalculatingAPeaceWG P.pdf](http://www.economicsandpeace.org/UserFiles/File/DefiningPeaceIndustrieAndCalculatingAPeaceWG P.pdf)>.
5. Brown, O., Khan, S. R. & Shaheen, F. H. (2009), 'Introduction' in *Regional Trade Integration and Conflict Resolution*, S. R. Khan (ed.), London: Routledge, pp. 5-6.
6. Cingranelli, D. & Richards, D. (2010), *The Cingranelli-Richards Human Rights Dataset*, CIRI Human Rights Data Projects, <[cirri.binghamton.edu](http://cirri.binghamton.edu)>.
7. Collier, P. (2006), *Economic Causes of Civil Conflict and Their Implications for Policy*, Oxford University, <<http://users.ox.ac.uk/~econpco/research/pdfs/EconomicCausesofCivilConflict-ImplicationsforPolicy.pdf>>.
8. Corruption Perceptions Index (2009), *Transparency International*, <[www.transparency.org/policy\\_research/surveys\\_indicies/cpi](http://www.transparency.org/policy_research/surveys_indicies/cpi)>.
9. Economist Intelligence Unit (EIU) (2008), *Index of Democracy*, EIU, <<http://graphics.eiu.com/PDF/Democracy%20Index%202008.pdf>>.
10. Fischer, R. & Hanke, K. (2009), 'Are Societal Values Linked to Global Peace and Conflict?' in *Peace & Conflict*, 15, pp. 227 – 248.
11. Galtung, J. (1996), *Peace by Peaceful Means: Peace and Conflict, Development and Civilization*, SAGE, London.
12. Gwartney, J. & Lawson, R. (2009), *Economic Freedom of the World 2009 Annual Report*, The Fraser Institute, <<http://www.fraserinstitute.org/research-news/display.aspx?id=13006>>.
13. Heritage Foundation & Wall Street Journal (2010), *2010 Index of Economic Freedom*, The Heritage Foundation, <[www.heritage.org/Index/download](http://www.heritage.org/Index/download)>.



14. Huang, S. & Throsby, D. (2011), 'Economic, Political and Social Determinants of Peace' in *The Economics of Peace and Security Journal*, Vol. 6, No. 2.
15. Intergroup Cohesion (2010), *Indices of Social Development*, Institute of Social Studies, <[www.indsocdev.org/intergroup-cohesion.html](http://www.indsocdev.org/intergroup-cohesion.html)>.
16. Kaufmann, D., Kraay, A. & Mastruzzi, M. (2009), *Governance Matters 2009: Learning From Over a Decade of the Worldwide Governance Indicators*, The Brookings Institute, <[www.brookings.edu/opinions/2009/0629\\_governance\\_indicators\\_kaufmann.aspx](http://www.brookings.edu/opinions/2009/0629_governance_indicators_kaufmann.aspx)>.
17. La Rue, F. (2011), *Report of the Special Rapporteur on the promotion and protection of the right to freedom of opinion and expression*, United Nations Human Rights Council, 2011: <[www2.ohchr.org/English/bodies/hrcouncil/docs/17session/A.HRC.17.27\\_en.pdg](http://www2.ohchr.org/English/bodies/hrcouncil/docs/17session/A.HRC.17.27_en.pdg)>.
18. Pew Global Attitudes Project (2004), *A Global Generation Gap*, Pew Research Center, <[pewglobal.org/2004/02/24/a-global-generation-gap/](http://pewglobal.org/2004/02/24/a-global-generation-gap/)>.
19. Press Freedom Index (2010), *Reporters Without Borders*, <[en.rsf.org/press-freedom-index-2010,1034.html](http://en.rsf.org/press-freedom-index-2010,1034.html)>.
20. Program on International Policy Attitudes (2009), *The GPI and Multi-National Attitude Research*, The Institute for Economics and Peace, <[www.economicsandpeace.org/UserFiles/File/TheGPIAndMulti-NationalAttitudeResearch.pdf](http://www.economicsandpeace.org/UserFiles/File/TheGPIAndMulti-NationalAttitudeResearch.pdf)>.
21. Prosperity Index (2010), The Legatum Institute, <[www.prosperity.com/education.aspx](http://www.prosperity.com/education.aspx)>.
22. Quinlan, A. (2010), *Building Resilience in Ontario: More than Metaphor or Arcane Concept?*, Resilience Science, <<http://rs.resalliance.org/2010/03/11/building-resilience-in-ontario-%E2%80%93-more-than-metaphor-or-arcane-concept/>>.
23. Rice, S., & Stewart, P. (2008), *Index of State Weakness in the Developing World.*, Brookings Institution, <[http://www.brookings.edu/~media/files/rc/reports/2008/02\\_weak\\_states\\_index/02\\_weak\\_states\\_index.pdf](http://www.brookings.edu/~media/files/rc/reports/2008/02_weak_states_index/02_weak_states_index.pdf)>.
24. Social Indicators (2009), *School Life Expectancy*, United Nations Statistics Division, <[unstats.un.org/unsd/demographics/products/socind/education.htm](http://unstats.un.org/unsd/demographics/products/socind/education.htm)>.
25. ul Haq, M. (1995), *Reflections on Human Development*, Oxford University Press.
26. UNDP, *Human Development Reports*, <[hdr.undp.org/en/statistics/ihdi](http://hdr.undp.org/en/statistics/ihdi)>.
27. World Economic Forum (WEF) (2010), *The Global Competitiveness Report 2009-2010*, Schwab K. (ed.), World Economic Forum, <[http://www3.weforum.org/docs/WEF\\_GlobalCompetitivenessReport\\_2010-11.pdf](http://www3.weforum.org/docs/WEF_GlobalCompetitivenessReport_2010-11.pdf)>.
28. World Public Opinion (2009), *Most People Think Their Nation's Foreign Policy is Morally No Better Than Average: Global Poll*, The Program on International Policy Attitudes,

<[www.worldpublicopinion.org/pipa/pdf/jan09/WPO\\_MoralityFP\\_Jan09\\_rpt.pdf](http://www.worldpublicopinion.org/pipa/pdf/jan09/WPO_MoralityFP_Jan09_rpt.pdf)>.

29. (2008), *World Public Opinion on Freedom of the Media*, The Program on International Policy Attitudes,

<[www.worldpublicopinion.org/pipa/pdf/apr09/WPO\\_PressFreedom\\_Apr09\\_packet.pdf](http://www.worldpublicopinion.org/pipa/pdf/apr09/WPO_PressFreedom_Apr09_packet.pdf)>.

30. (2008), *World Public Opinion on Torture*, The Program on International Policy Attitudes, 2008,

<[www.worldpublicopinion.org/pipa/pdf/jun08/WPO\\_Torture\\_Jun08\\_packet.pdf](http://www.worldpublicopinion.org/pipa/pdf/jun08/WPO_Torture_Jun08_packet.pdf)>.

31. World Values Survey (2005), <[www.worldvaluessurvey.org/index\\_surveys](http://www.worldvaluessurvey.org/index_surveys)>.

INSTITUTE FOR  
ECONOMICS  
& PEACE

SYDNEY - NEW YORK - WASHINGTON D.C.

**email** [info@economicsandpeace.org](mailto:info@economicsandpeace.org) **web** [www.economicsandpeace.org](http://www.economicsandpeace.org)

© Institute for Economics & Peace 2011