

Appendix 2B. The Global Peace Index 2009

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I. Introduction

The concept of peace is notoriously difficult to define. The simplest way of approaching it is in terms of harmony achieved by the absence of war or conflict. Applied to states, this would suggest that those not involved in violent conflicts with neighbouring states or suffering internal wars have achieved a state of peace. This is what Johan Galtung defined as ‘negative peace’—an absence of violence.¹ The concept of negative peace is immediately intuitive and empirically measurable and can be used as a starting point to elaborate its counterpart concept, ‘positive peace’: having established what constitutes an absence of violence, is it possible to identify which structures and institutions create and maintain peace?

The Global Peace Index (GPI) is a step in this direction. It is a measurement of peace that seeks to determine what cultural attributes and institutions are associated with states of peace. Its first aim is to produce a scoring model that ranks 144 countries by their relative states of peace using 23 indicators. The indicators have been selected as being the best available data sets that reflect the incidence or absence of peace. They contain both quantitative data and qualitative scores from a range of trusted sources.

As well as producing this numerical measure of negative peace, the GPI’s second aim is to investigate positive peace. It does this by identifying correlations with other indexes and databases and investigating the relative importance of a range of potential determinants or ‘drivers’ that may influence the creation and nurturing of peaceful societies, both internally and externally.

The Global Peace Index was founded by Steve Killelea, an Australian technology entrepreneur and philanthropist, and is published by the Institute for Economics and Peace (IEP), a new think tank dedicated to research and education on the relationship between economic development, business and peace.² The GPI is developed by a triumvirate consisting of the Institute for Economics and Peace, the Economist Intelligence Unit (EIU), which collates and calculates the data and rankings, and an international advisory panel.³

¹ Galtung, J., ‘Editorial’, *Journal of Peace Research*, vol. 1, no. 1 (1964).

² More information on the IEP is available at <<http://www.economicsandpeace.org/>>.

³ The choices of indicators and the weights assigned to them were agreed after extensive consultation with the GPI Advisory Panel, which included the following experts in 2008–2009: Kevin Clements, Chairman (National Centre for Peace and Conflict Studies, University of Otago), Linda Jamison (Center for Strategic and International Studies, Washington, DC), Sultan Barakat (University of York), Paul van Tongeren (Global Partnership for the Prevention of Armed Conflict, The Hague), Manuela Mesa (Centro de Educación e Investigación para la Paz, Madrid), Dan Smith, Ron Horvath (University of Sydney), Ian Anthony (SIPRI) and Ekaterina Stepanova (SIPRI).

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Table 2B.1. The Global Peace Index 2009

Rank	Country	Score	Rank	Country	Score
1	New Zealand	1.202	51	Gabon	1.758
2	Denmark	1.217	52	Ghana	1.761
2	Norway	1.217	53	Mozambique	1.765
4	Iceland	1.225	54	Egypt	1.773
5	Austria	1.252	54	Latvia	1.773
6	Sweden	1.269	56	Bulgaria	1.775
7	Japan	1.272	57	Greece	1.778
8	Canada	1.311	58	Zambia	1.779
9	Finland	1.322	59	Panama	1.798
9	Slovenia	1.322	59	Tanzania	1.798
11	Czech Republic	1.328	61	Equatorial Guinea	1.801
12	Ireland	1.333	61	Nicaragua	1.801
13	Luxembourg	1.341	63	Morocco	1.811
14	Portugal	1.348	64	Jordan	1.832
15	Belgium	1.359	65	Namibia	1.841
16	Germany	1.392	66	Argentina	1.851
16	Qatar	1.392	67	Indonesia	1.853
18	Switzerland	1.393	68	Cuba	1.856
19	Australia	1.476	69	Bahrain	1.881
20	Chile	1.481	70	Dominican Republic	1.890
21	Oman	1.520	71	Burkina Faso	1.905
22	Netherlands	1.531	72	Madagascar	1.912
23	Singapore	1.533	73	Paraguay	1.916
24	Slovakia	1.539	74	China	1.921
25	Uruguay	1.557	75	Albania	1.925
26	Malaysia	1.561	75	Moldova	1.925
27	Hungary	1.575	77	Nepal	1.939
28	Spain	1.577	78	Serbia	1.951
29	Costa Rica	1.578	79	Peru	1.972
30	France	1.579	80	Senegal	1.984
31	Romania	1.591	81	Bolivia	1.990
32	Poland	1.599	82	Ukraine	2.010
33	Korea, South	1.627	83	United States	2.015
34	Botswana	1.643	84	Kazakhstan	2.018
35	United Kingdom	1.647	85	Brazil	2.022
36	Italy	1.648	86	Rwanda	2.027
37	Taiwan	1.652	87	Trinidad and Tobago	2.035
38	Estonia	1.661	88	Macedonia, FYR	2.039
39	Viet Nam	1.664	89	Mongolia	2.040
40	Bhutan	1.667	90	Bangladesh	2.045
41	United Arab Emirates	1.667	91	Montenegro	2.046
42	Kuwait	1.680	92	Syria	2.049
43	Lithuania	1.687	93	Papua New Guinea	2.059
44	Tunisia	1.698	94	El Salvador	2.068
45	Laos	1.701	95	Cameroon	2.073
46	Libya	1.710	96	Mali	2.086
47	Malawi	1.711	97	Guyana	2.098
48	Cyprus	1.737	98	Belarus	2.103
49	Croatia	1.741	99	Iran	2.104
50	Bosnia and Herzegovina	1.755	100	Angola	2.105

Rank	Country	Score	Rank	Country	Score
101	Turkmenistan	2.110	123	South Africa	2.437
102	Jamaica	2.111	124	Mauritania	2.478
103	Uganda	2.140	125	Sri Lanka	2.485
104	Saudi Arabia	2.167	126	Myanmar	2.501
105	Cambodia	2.179	127	Burundi	2.529
106	Congo, Republic of the	2.202	128	Ethiopia	2.551
106	Uzbekistan	2.202	129	Nigeria	2.602
108	Mexico	2.209	130	Colombia	2.645
109	Ecuador	2.211	131	Korea, North	2.717
110	Algeria	2.212	132	Lebanon	2.718
111	Guatemala	2.218	133	Central African Republic	2.733
112	Honduras	2.265	134	Georgia	2.736
113	Kenya	2.266	134	Zimbabwe	2.736
114	Azerbaijan	2.327	136	Russia	2.750
114	Philippines	2.327	137	Pakistan	2.859
116	Haiti	2.330	138	Chad	2.880
117	Côte d'Ivoire	2.342	139	Congo, Dem. Republic	2.888
118	Thailand	2.353	140	Sudan	2.922
119	Yemen	2.363	141	Israel	3.035
120	Venezuela	2.381	142	Somalia	3.257
121	Turkey	2.389	143	Afghanistan	3.285
122	India	2.422	144	Iraq	3.341

The Global Peace Index 2009 appears in table 2B.1. The results of the index are discussed in section II. The methodology of the GPI is explained in section III, while section IV investigates the potential determinants of peace that the GPI can help identify.

II. Highlights and changes

The Global Peace Index 2009 covers 144 countries, which account for around 99 per cent of the world's population and over 87 per cent of its land mass. New Zealand is ranked as the country most at peace, followed by Denmark and Norway. Small, stable and democratic countries are consistently ranked highly: 14 of the top 20 countries are West or Central European democracies. However, this is a reduction from 16 last year: Hungary and Slovakia have both left the top 20, replaced by Qatar (ranked 16th equal) and Australia (ranked 19th). All five Nordic countries—Denmark, Finland, Iceland, Norway and Sweden—are in the top 10. Island nations generally fare well, although Madagascar fell by 30 places amid mounting political instability and violent demonstrations. For the third year running, the country ranked least at peace is Iraq, followed by Afghanistan and Somalia. These countries are all in a state of conflict and upheaval.

The average score for the states surveyed in the 2009 GPI is 1.964 (based on a 1–5 scale). There is little variance between the scores of the top 20 countries (from 1.202 for New Zealand and 1.481 for Chile), but the 20 lowest ranked

Table 2B.2. Countries with the greatest change in Global Peace Index rank, 2008–2009

Country	Rank, 2009	Change in rank, 2008–2009
<i>Top 5 risers</i>		
Bosnia and Herzegovina	50	+23
Angola	100	+16
Congo, Republic of the	106	+15
Egypt	54	+13
Trinidad and Tobago	87	+11
<i>Top 5 fallers</i>		
Madagascar	72	-30
Mexico	108	-16
Latvia	54	-16
South Africa	123	-15
Yemen	119	-13

countries exhibit a far greater spread (from 2.485 for Sri Lanka to 3.341 for Iraq).

The countries whose ranking has changed the most compared to the GPI for 2008 (revised to take account of changes in methodology in 2009) are listed in table 2B.2.⁴

III. Methodology and data sources

The indicators

The GPI advisory panel chose 23 indicators of the existence or absence of peace, divided into three key thematic categories.⁵

1. *Measures of ongoing domestic and international conflict.* The GPI is intended to review the state of peace in countries over the past year, although many indicators are based on available data from the past two years. The advisory panel decided against including data reflecting a country's historical experience of domestic and international conflict on the grounds that the GPI uses authoritative statistics on ongoing intra- and interstate wars. These, combined with two indicators scored by the EIU's analysts, comprise 5 of the 23 indicators (see table 2B.3).

2. *Measures of societal safety and security.* Ten of the indicators assess the levels of safety and security in a country, ranging from perceptions of criminality in society to the level of respect for human rights and the rate of murders and violent crimes (see table 2B.4). The panel considered the difficulties of

⁴ For further analysis of why each of these countries has moved see *Global Peace Index, 2009 Methodology, Results and Findings* (Institute for Economics and Peace: Sydney, 2009), annex A.

⁵ For the precise definition of each indicator see *Global Peace Index* (note 4)

Table 2B.3. Measures of ongoing domestic and international conflict

Indicator	Weight	Source
Number of external and internal wars fought, 2002–2007	5	UCDP/PRIO Armed Conflict Dataset; and Earthscan, <i>The Atlas of War and Peace</i>
Estimated number of deaths from organized conflict (external)	5	UCDP
Number of deaths from organized conflict (internal)	5	UCDP/PRIO Armed Conflict Dataset
Level of organized conflict (internal)	5	Economist Intelligence Unit
Relations with neighbouring countries	5	Economist Intelligence Unit

UCDP = Uppsala Conflict Data Program; PRIO = International Peace Research Institute, Oslo.

Table 2B.4. Measures of societal safety and security

Indicator	Weight	Source
Perceptions of criminality in society	4	Economist Intelligence Unit
Number of displaced persons as a percentage of the population	4	World Bank, <i>World Development Indicators</i>
Political instability	4	Economist Intelligence Unit
Level of respect for human rights (Political Terror Scale)	4	Mark Gibney and Matthew Dalton, University of North Carolina/ Amnesty International
Potential for terrorist acts	1	Economist Intelligence Unit
Number of homicides per 100 000 people	4	9th, 8th and 7th UNCJS
Level of violent crime	4	Economist Intelligence Unit
Likelihood of violent demonstrations	3	Economist Intelligence Unit
Number jailed per 100 000 people	3	International Centre for Prison Studies, King's College London, World Prison Population List
Number of internal security officers and police per 100 000 people	3	8th and 7th UNCJS

UNCJS = UN Office of Drugs and Crime, United Nations Surveys on Crime Trends and the Operations of Criminal Justice Systems.

comparing international crime statistics. Five of these indicators have been scored by the EIU's team of country analysts.

3. *Measures of militarization.* Eight of the indicators are related to a country's military build-up, reflecting the assertion that the level of militarization and access to weapons is directly linked to how at peace a country feels internationally (see table 2B.5). For the 2009 GPI, a measure of deployment of troops to UN peacekeeping missions was replaced with the indicator 'Funding for UN peacekeeping missions' and a measure of non-UN deployment of troops was omitted.⁶

⁶ For more on changes in methodology in 2009 see Global Peace Index (note 4)

Table 2B.5. Measures of militarization

Indicator	Weight	Source
Military expenditure as a percentage of GDP	2	IISS, <i>The Military Balance 2008</i>
Number of armed services personnel per 100 000 people	2	IISS, <i>The Military Balance 2008</i>
Volume of transfers of major conventional weapons (imports) per 100 000 people	2	SIPRI Arms Transfers Database
Volume of transfers of major conventional weapons (exports) per 100 000 people	3	SIPRI Arms Transfers Database
Funding for UN peacekeeping missions	2	UN Secretariat
Aggregate number of heavy weapons per 100 000 people	3	Bonn International Center for Conversion
Ease of access to small arms and light weapons	3	Economist Intelligence Unit
Military capability/sophistication	2	Economist Intelligence Unit

IISS = International Institute for Strategic Studies.

All of the indicators are assigned a score ('banded') on a scale of 1–5. EIU country analysts score the qualitative indicators, and gaps in the quantitative data are filled by estimates.

Weighting the index

The advisory panel apportioned scores based on the relative importance of each of the indicators on a 1–5 scale. The consensus scores for each indicator are given in tables 2B.3–2B.5. Two sub-component weighted indices were then calculated from the GPI group of indicators: one that measures a country's level of internal peace and one that measures a country's level of external peace (its state of peace beyond its borders). The overall composite score and index was then calculated by applying a weight of 60 per cent to the measure of internal peace and 40 per cent for external peace. The advisory panel agreed to apply a heavier weight to internal peace on the assumption that a greater level of internal peace is likely to correlate with a lower level of external conflict.

IV. Investigating the set of potential determinants

The Global Peace Index can be used as a foundation on which to establish a measure of the incidence of peace. However, it cannot on its own explain why the absence of violence occurs and whether groups of countries exhibit sufficient similar deficiencies that result in an absence of peace.

In addition to the 23 indicators listed above, the GPI has identified 33 secondary indicators that measure: democracy, including government competence and efficacy; the strength of institutions and the political process; international openness; demographics; regional integration; religion and culture; education;

and material well-being.⁷ This list of potential drivers of peace is by no means exhaustive: it is limited to indicators for which data is both available from credible sources for all 144 countries and comparable and consistent in its measurement. Table 2B.6 lists each of these secondary indicators and the 23 primary GPI indicators. The correlation coefficients of the GPI scores and ranks and of the scores for the internal and external measures of peace are given for each indicator. The correlation coefficients are calculated across the 144 countries in the GPI.

Of the listed variables, the overall index continues to be strongly determined by the internal measure of peace, with a correlation coefficient of 0.97. The analysis identifies that the structural drivers of peace include: good relations with neighbouring states; low levels of corruption; well functioning of government; high levels of per capita income; a high rate of participation in primary and secondary education; low child mortality rates; freedom of the press; and a high degree of regional integration.

In addition, a principal factor analysis of the GPI has been undertaken.⁸ The analysis identified three core elements of peace: social and political peace; the state of national security; and demilitarization. Social and political peace measures the degree to which non-violent conflict resolution is practised within a society and in the country's relations with other countries. The state of national security represents a country's capacity for violence, and also the opportunity cost in terms of material and human resources which could be devoted to other productive activities. Demilitarization relates to traditional understandings of peace as simply the absence of war. It is a necessary but insufficient measure of peace as defined by the GPI.

These three aspects of the structure of peace cut across the boundary between a country's internal and external peacefulness: they can be applied to any society's internal relations among its people, and also to its external relations with other societies. The principal factor analysis shows that the statistical components of the GPI group naturally into these categories or factors. From this it can be concluded that the GPI has fairly high statistical integrity and cohesion.

⁷ For the precise definitions of these secondary indicators and their sources see Global Peace Index (note 4), annex B.

⁸ The principal factor analysis was conducted by Professor Ronald Horvath and Dr Ben Goldsmith of the University of Sydney. See also Global Peace Index (note 4).

Table 2B.6. Correlation between the Global Peace Index and the indicators of peace and its possible determinants

Figures are correlation coefficients. Figures in bold are correlation coefficients greater than 0.5 or less than -0.5. Significance levels, which will be different for each indicator, have not been calculated.

	GPI score	GPI rank	Internal peace	External peace
GPI score	1.00	0.96	0.97	0.61
GPI rank	0.96	1.00	0.95	0.53
Internal peace	0.97	0.95	1.00	0.40
External peace	0.61	0.53	0.40	1.00
<i>Global Peace Index indicators</i>				
Number of external and internal wars fought, 2002–2007	0.27	0.25	0.12	0.61
Estimated number of deaths from organized conflict (external)	0.14	0.13	0.02	0.47
Number of deaths from organized conflict (internal)	0.71	0.60	0.66	0.54
Level of organized conflict (internal)	0.83	0.81	0.82	0.46
Relations with neighbouring countries	0.72	0.68	0.62	0.69
Perceptions of criminality in society	0.76	0.73	0.76	0.37
Number of displaced persons as a percentage of the population	0.26	0.14	0.23	0.22
Political instability	0.77	0.78	0.78	0.35
Level of respect for human rights (Political Terror Scale)	0.85	0.84	0.84	0.46
Potential for terrorist acts	0.63	0.58	0.59	0.43
Number of homicides per 100 000 people	0.62	0.62	0.71	0.04
Level of violent crime	0.65	0.68	0.75	0.01
Likelihood of violent demonstrations	0.67	0.69	0.74	0.12
Number jailed per 100 000 people	0.11	0.13	0.06	0.20
Number of internal security officers and police per 100 000 people	0.05	0.06	0.07	-0.02
Military expenditure as a percentage of GDP	0.35	0.28	0.24	0.54
Number of armed services personnel per 100 000 people	0.25	0.18	0.12	0.52
Volume of transfers of major conventional weapons (imports) per 100 000 people	-0.07	-0.12	-0.14	0.19
Volume of transfers of major conventional weapons (exports) per 100 000 people	-0.06	-0.10	-0.16	0.28
Funding for UN peacekeeping missions	0.33	0.31	0.31	0.24
Aggregate number of heavy weapons per 100 000 people	0.14	0.09	0.02	0.45
Ease of access to small arms and light weapons	0.73	0.72	0.78	0.21
Military capability/sophistication	-0.08	-0.11	-0.22	0.40
<i>Potential determinants of peace</i>				
Political Democracy Index	-0.56	-0.57	-0.57	-0.27
Electoral process	-0.38	-0.40	-0.38	-0.20
Functioning of government	-0.66	-0.65	-0.66	-0.32

	GPI score	GPI rank	Internal peace	External peace
Political participation	-0.46	-0.49	-0.48	-0.16
Political culture	-0.64	-0.65	-0.68	-0.21
Civil liberties	-0.50	-0.50	-0.48	-0.32
Corruption perceptions	-0.72	-0.78	-0.77	-0.19
Women in parliament (% of lower house)	-0.30	-0.32	-0.31	-0.14
Gender inequality	-0.42	-0.44	-0.44	-0.15
Freedom of the press	0.50	0.51	0.49	0.29
Exports plus imports as % of GDP	-0.11	-0.14	-0.11	-0.07
Foreign direct investment (flow) as % of GDP	-0.19	-0.20	-0.17	-0.18
Number of visitors as % of domestic population	-0.42	-0.45	-0.44	-0.16
Net migration (% of total population)	-0.24	-0.32	-0.28	-0.02
15-34-year-old males as % of total population	0.39	0.46	0.43	0.05
Gender ratio of population: women : men	-0.07	-0.08	-0.06	-0.08
Extent of regional integration	0.64	0.64	0.64	0.34
Current education spending (% of GDP)	-0.29	-0.28	-0.30	-0.10
Primary school enrolment ratio (% net)	-0.51	-0.44	-0.53	-0.17
Secondary school enrolment ratio (% net)	-0.52	-0.53	-0.59	-0.04
Higher education enrolment (% gross)	-0.49	-0.54	-0.57	-0.01
Mean years of schooling	-0.61	-0.62	-0.65	-0.18
Adult literacy rate (% of population over 15 years)	-0.50	-0.47	-0.52	-0.18
Hostility to foreigners and private property	0.63	0.61	0.66	0.24
Importance of religion in national life	0.47	0.47	0.48	0.20
Willingness to fight	0.37	0.37	0.29	0.42
Nominal GDP (\$ b., purchasing power parities)	-0.06	-0.05	-0.12	0.17
Nominal GDP (\$ b., market exchange rates)	-0.11	-0.11	-0.17	0.14
GDP per capita	-0.58	-0.64	-0.63	-0.15
Gini coefficient	0.39	0.43	0.48	-0.07
Unemployment (%)	0.25	0.21	0.26	0.07
Life expectancy	-0.54	-0.55	-0.60	-0.10
Infant mortality per 1000 live births	0.54	0.53	0.57	0.16