UNITED STATES PEACE INDEX - 2011

INSTITUTE FOR
ECONOMICS
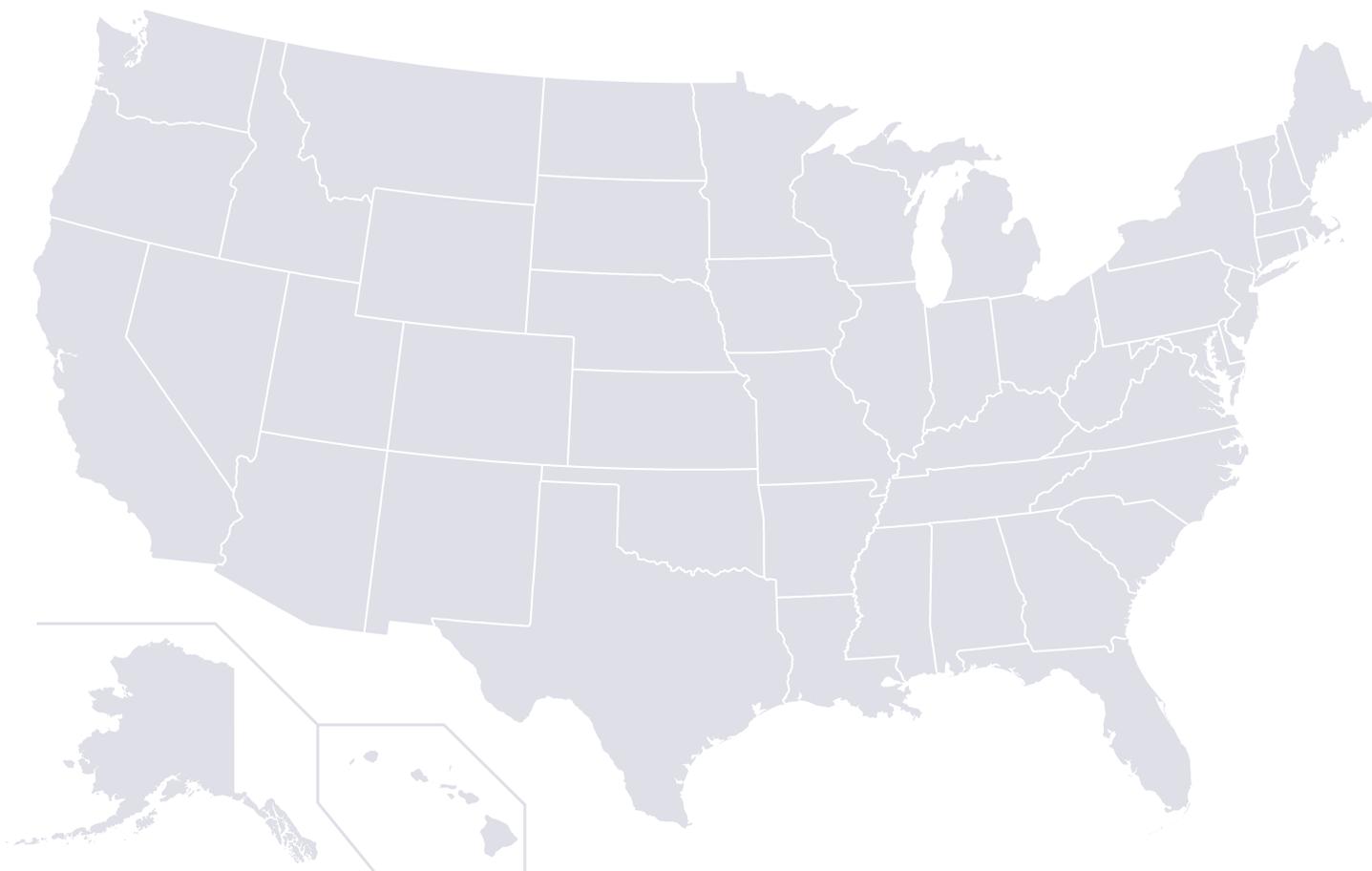& PEACE

About the Institute for Economics and Peace

The Institute for Economics and Peace (IEP) is an independent not-for-profit research institute dedicated to building a greater understanding of the key drivers and measures of peace and to identifying the economic benefits that increased peacefulness can deliver.

The Institute's ground-breaking research includes the Global Peace Index (GPI), the first analysis ever to methodically rank countries by their peacefulness and identify potential determinants of peace. The GPI has become a valued resource and is used by major organizations and governments around the world. The fifth Global Peace Index will be released in May 2011.

IEP is non-partisan and partners with numerous organizations internationally including leading academic institutions, universities, businesses and peace institutes.

The Institute for Economics and Peace was founded in 2007. It has offices in Sydney and New York.

www.EconomicsandPeace.org

CONTENTS

EXECUTIVE SUMMARY

The United States Peace Index (USPI) is the first in a series of national peace indices that will build on the work of the Institute for Economics and Peace (IEP) in measuring and understanding the fabric of peace. The Institute produces the Global Peace Index which is the first ever study to methodically rank the nations of the world by their peacefulness and to identify potential drivers of peace. The GPI has become a valued resource and is used by academics, think tanks and governments around the world.

The aim of the U.S. Peace Index is to further the understanding of the types of environments that are associated with peace and to help quantify the economic benefits that could result from increases in peace. It is envisaged that by producing a series of national peace indices using the same methodology across many nations the patterns that are associated with peace will emerge.

In the U.S. there are many benefits that would flow from improvements in peace, either physically, emotionally or socially, but one of the key benefits that is often overlooked is the substantial positive economic impact that even small improvements in peace can have. Violence creates costs for both business and government, it also reduces productivity, which if unleashed will create additional economic growth.

This study estimates that if the U.S. had the same levels of peacefulness as Canada then over 2.7 million additional jobs could be created while also reducing state and federal government expenditures. This report can be seen as a starting point in analyzing the fabric of peace within the U.S. and provides a framework for more detailed studies. The report also analyzes some of the costs associated with violence so as to highlight the substantial economic impact that improvements in peace can have.

The United States is an excellent choice for the first national peace index due to the high quality of the statistical data available and also the availability of historical data. The U.S. Peace Index has been calculated back to 1991 so as to provide a panel data series for further research and analysis. It is envisaged that academics, think tanks and other research oriented bodies will use this research base to further enhance society's knowledge of peace. The Index will be updated on an annual basis and will provide a resource for further academic research.

The key findings of the study are;

- S*ince the mid-1990s, peace has been on the increase recording an 8% improvement.* The improvement in peacefulness has been driven by a substantial decrease in homicides and violent crimes. This however, has been somewhat offset by large and progressive increases in the incarceration rate from 1991 onwards.

- *The potential economic gains from improvements in peace are significant.* Violence and incarceration create large costs for governments and the economy. This study estimates that if the U.S. had similar levels of peacefulness to Canada, the conservative economic effect on the U.S. economy would be $361 billion per annum. This would be made up of $89 billion in direct savings and $272 billion from additional economic activity. This additional economic activity, if recouped would have a stimulatory effect capable of generating approximately 2.7 million additional jobs.

- *Peace is linked to opportunity, health, education and the economy.* States that rank higher on these social and economic factors tend to have higher scores in peace - indicating that having access to basic services, having an education, being in good health and ultimately being given the opportunity to succeed, are linked to peace. Improving these factors would also create additional economic activity.

- *Peace is not related to political affiliation.* Neither the groupings of traditionally Republican states nor Democratic states have a discernable advantage in peace. Although the top five states are predominantly Democratic and the bottom five states are predominantly Republican, once the other states were included they neutralized out any effect.

- *The five most peaceful states are Maine, New Hampshire, Vermont, Minnesota and North Dakota.* The Northeast region is the most peaceful region in the U.S., with all of its states ranking in the top 30 of the U.S. Peace Index, including the heavily populated states of New York, Pennsylvania, and New Jersey. The least peaceful states are Louisiana, Tennessee, Nevada, Florida, and Alabama.

- *Some states have progressed while others have slipped over the past 19 years.* The improvements in peace have largely come from the lower ranked states. The bottom 10 ranked states have increased their peacefulness on average by 6.9% while the top 10 states have seen a decline in peace averaging 5.8%. This would indicate that it is easier to improve peace in states with higher levels of violence.

- *Growing incarceration is a drag on the economy and in recent years has not had a significant effect on violent crime.* Whilst there has clearly been a fall in the homicide and violent crime rates, the economic benefits have largely been offset by the costs associated with the increase in the incarceration rate. There does not appear to be a strong relationship with increased incarceration rates and decreases in violent crime since the early 2000's.

Some additional observations worth mentioning include: the number of police per 100,000 in the U.S. is comparable to many European nations, notably the Netherlands and Switzerland, however there is less policing in the U.S. when analyzed on a crime-to-police ratio. The difference between the homicides to violent crime ratio in the U.S. compared to other developed countries is notable. The U.S. homicide rates are three to four times higher than other developed countries while violent crimes are the same to twice as high.

The U.S. Peace Index consists of a composite set of five indicators. These indicators were chosen because they can be measured across many countries with a methodology that would allow for the data to be consistently collected by state, district or region. The definition of peace that was chosen is the "absence of violence". This is a simple definition, intuitive for most people and is the same definition used for the Global Peace Index[1]. The indicators that have been selected relate to violent crime, homicides, incarceration rates, policing and availability of small arms. The methodological framework used to arrive at these indicators is based on envisaging a society that is perfectly at peace. This would be a society where there is no violence, no police and no one in jail. Evidently, this does not exist in any modern developed nation. Without any police, crime would be rampant, while violence can be reduced by increasing the number of police or jailing large numbers of individuals. Therefore it follows that the most peaceful society would be the one with the lowest rates for each of these categories.

Providing a list of the states as measured by their "absence of violence" is interesting in itself but does not help in understanding what factors are associated with peace. To further understand "positive peace", the U.S. Peace Index has been correlated against a list of potential factors grouped in the following categories: education, health, economics and politics & demographics. The index was also analyzed against various attitudinal surveys and the key outcomes are covered in the relevant section.

Since many methodological approaches could be taken when developing an index, to further understand the accuracy of the selected method the Index was reweighted according to the economic costs of each of the indicators. This did substantially alter the weights of each of the indicators used in compiling the Index and the new Index was then correlated against the same list of potential factors associated with peace. There was no material difference in the correlations between the two indices thereby validating the consistency of the weights used in the U.S. Peace Index.

Lost peacefulness has both a social and an economic cost. However, this study is limited to understanding the economic impact associated with peace. Four of the five indicators were used to conservatively estimate the savings that would accrue from decreases in violence as well as estimating the additional economic activity that would be generated. Comparisons were made with other countries to understand what the economic effect would be if the U.S. had the same level of peacefulness as these countries. Canada was chosen as the main comparator due to its geographic proximity and its similar level of economic development to the U.S.

The analysis demonstrates that the economic benefits that would ensue from reductions in violence are substantial. There are however limitations with the estimations due to the lack of available data on measuring the broader economic impacts of violence on business and the economy as a whole. Therefore further analysis would refine these estimations.

This study does not seek to make any moral or value judgments about the appropriate levels of any of the indicators. It is acknowledged that without police, higher levels of crime would exist and that it is necessary to incarcerate individuals who pose a danger to the rest of society. However some societies are more peaceful than others and by understanding the societal structures and attitudes associated with these societies a more enlightened public policy debate will ensue.

THE RESULTS

Table 1 provides the scores and rankings for the fifty U.S. states in 2011. States most at peace are ranked first.

Table 1 – U.S. Peace Index Results

Rank	State	Score	Rank	State	Score
1	Maine	1.34	26	New Jersey	2.61
2	New Hampshire	1.50	27	Kansas	2.63
3	Vermont	1.54	28	Colorado	2.66
4	Minnesota	1.62	29	New York	2.69
5	North Dakota	1.71	30	Alaska	2.70
6	Utah	1.75	31	Michigan	2.79
7	Massachusetts	1.80	32	North Carolina	2.79
8	Rhode Island	1.83	33	California	2.89
9	Iowa	1.85	34	Mississippi	2.97
10	Washington	1.87	35	Illinois	2.98
11	Nebraska	1.88	36	Delaware	3.14
12	Hawaii	1.91	37	Arizona	3.14
13	Oregon	2.08	38	New Mexico	3.16
14	South Dakota	2.17	39	Georgia	3.18
15	Connecticut	2.21	40	Missouri	3.21
16	Idaho	2.24	41	Maryland	3.24
17	Montana	2.28	42	South Carolina	3.26
18	West Virginia	2.28	43	Oklahoma	3.27
19	Wisconsin	2.30	44	Arkansas	3.30
20	Kentucky	2.39	45	Texas	3.30
21	Pennsylvania	2.42	46	Alabama	3.42
22	Ohio	2.43	47	Florida	3.50
23	Wyoming	2.49	48	Nevada	3.50
24	Indiana	2.50	49	Tennessee	3.61
25	Virginia	2.52	50	Louisiana	3.97

Note: Washington D.C. is excluded from the list, as outlined in the methodology section of this report.

INTRODUCTION

The U.S. Peace Index is the first in a series of national peace indices that will be produced by the Institute for Economics and Peace. These studies will analyze the level and composition of peace within the selected nations by state, district or region.

The aim of the research will be to further our understanding of what types of environments are associated with peace sub-nationally and to define the positive economic impact of peace. Through better understanding state and regional differences, policymakers will be better able to tailor government programs to improve their effectiveness, while business will be better able to target and tailor their investments according to the risk and opportunity created by varying levels of peacefulness.

Since producing the first Global Peace Index (GPI) in 2007, the Institute for Economics and Peace has been asked to develop a number of national peace indices. The GPI has raised significant awareness about the drivers and structures of peace, as well as the various economic benefits that flow from peace. As the empirical basis for the GPI has progressively developed, research by the IEP has found that many large nations have substantial variances in their levels of peacefulness. This is especially true for nations with diverse social and cultural conditions as well as varying economic conditions. It is predominately for this reason that the IEP has started to produce national peace indices, with the U.S. Peace Index being the first in the series.

Through analyzing national peace indices a better understanding of the fabric of peace is possible. If trends and statistical relations can be found to exist between the internal peacefulness of different nations, then new approaches to creating peace may emerge. Additionally, a more nuanced understanding of national peacefulness will improve our understanding of both business and political risk at the sub-national level.

In order to undertake comparable national peace studies, it was decided to adopt a minimal number of indicators and to develop a methodology that could be applied to all future studies. This will provide a comparable framework for cross country analysis. It was also important to adopt a measurement framework underpinned by a proven and familiar philosophical foundation.

This report can be categorized as having a number of distinct parts:

- An overview of the Institute's reasons for doing the Index and why the U.S. was chosen for the first study.

- An explanation of the philosophical approach to doing the Index along with a detailed explanation of the methodology used, including data sources.

- The U.S. Peace Index rankings, both by states and by regions, along with an analysis of the five most and least peaceful states on the Index and a commentary on the most improved states.

- An explanation of factors that were correlated against the Index relating to health, education, economy, opportunity, politics, and demographics. A further explanation is provided for the factors that were statistically significant.

- A trend analysis of U.S. peacefulness for the last 19 years which maps the changes in peacefulness by state and by indicator as well as the economic costs associated with violence for each of these 19 years.

- An economic analysis of the costs associated with violence and the additional economic activity that will ensue from improvements in peace.

Why select the U.S. for the first national peace index?

The U.S. Peace Index is a first attempt to quantify the peacefulness of the U.S. by using a composite set of key indicators that measure its internal levels of peace. The study details and itemizes cost savings and productivity gains that would potentially flow to the U.S. economy if greater peace could be realized. The size of these savings and productivity gains to some extent speak for themselves, while also underscoring the huge opportunity policymakers have in focusing on peace as a critical component of the nation's economic policy.

The United States makes an ideal case study for the first national peace index principally due to the high quality of state-level data dating back to the early 1980s and the existence of a large literature of related studies which estimate the various costs of violence as well as the costs associated with the containment of violence.

Compared to other nations on the Global Peace Index, the U.S. is a middle ranking nation with an internal peace measure of 2.06 very close to the global average of 2.02[2]. The combination of economic size, the substantial capabilities and resources of government, and the middle level ranking, means trapped economic potential and productivity within the country is greater and has more opportunity of being realized than in any other region or nation in the world.

The U.S. is also attractive because it is commonly characterized as having a higher rate of violence than many other developed economies and also because trends in crime over the past twenty years have been the subject of much debate and curiosity. It is interesting to note that at the beginning of the 1980s the U.S.'s crime rate was comparable to that of other developed nations and violence steadily increased to a peak in the mid-1990s and has since been falling. However, this fall has been accompanied by a steadily increasing incarceration rate which has significant economic consequences associated with it.

The availability of federal data, collated by state and dating back to the early 1990s for homicides, violent crime, cost of policing and incarceration rates, enables various correlations to be run against other well-known social and economic indicators. The excellent availability of time series data allows these correlation trends to be compared with the U.S. Peace Index so changes in correlations can be seen over time. Additionally, the large pool of available literature on the cost of the items associated with this study meant that reasonably good estimates could be made on the savings or costs from either improvements in peace or losses in peacefulness. Estimated savings have been broken down by state. It is acknowledged that with better data and more time the estimates could be refined even further.

Furthermore, the U.S., being the largest economy in the world has a number of highly productive industries that could benefit from peace. This can be exemplified by the opportunity to build a highway instead of a jail, or the expansion of employment in teachers rather than prison guards. While such efforts would not necessarily generate additional economic activity in themselves, they would create the foundation for a more productive economy. The realization of additional economic activity is defined as the 'dynamic peace dividend' and can result in a substantial lift in GDP and employment. The concept is further explained in the economic analysis section of the report.

Substantial improvements in peace will not be achieved without some government investments. This report does not attempt to recommend what programs should be undertaken nor to estimate what the costs are likely to be.

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2   The Global Peace Index is calculated on a 1-5 scoring range where 1=most peaceful.

INTRODUCTION

Definition of peace

For the purpose of this study, peace has been defined as "the absence of violence". This definition is easily understood while also being relatively open to empirical quantification.

The methodological framework was based on envisaging a society that is perfectly at peace; a society where there is no violence, no police and no one in jail. Evidently, this does not exist in any modern developed nation. Without police crime would be rampant, while violence can be reduced by increasing the number of police and/or jailing large numbers of individuals. The indicators and scores in the USPI are *relative measures of peace* and the prevalence of these factors reflects the degree of violence, or lack of peace within a society. The most peaceful societies therefore would have the lowest prevalence of these indicators of violence.

This study does not seek to make any moral or value judgments about the appropriate levels of policing or incarcerations. It is acknowledged that without police higher levels of crime would exist and that it is necessary to incarcerate individuals who pose a danger to society. Additionally, this logic also applies to small arms: the USPI does not make judgments about appropriate levels of small arms in society but rather considers their prevalence a reflection of the need for self-defense and a potential to generate violence.

The indicators are interdependent, well-recorded, and measurable across states and provide a solid foundation from which to develop measures of peace.

Identifying the potential determinants of peace

To further the understanding of the economic and social factors associated with peace, the IEP compiled a secondary dataset composed of 37 secondary factors grouped into four categories of education, health, economic conditions, politics and demographics. The composite USPI score was correlated with each factor to determine statistical significance. The correlation coefficients are calculated across the 50 states plus Washington D.C. and values where r > 0.5 and r < -0.5 were considered to be statistically significant. A high positive correlation suggests a factor is associated with violence, while a high negative correlation suggests that the factor is associated with increasing peacefulness.

Economic measurements and benefits of peace

To understand the economic impact of peace the economic costs associated with homicides, violent crime, policing, judicial services and incarceration have been estimated. The figures were chosen based on a review of the existing literature and the sources used are mentioned in the study in the relevant commentary. The estimated costs are considered to be conservative especially for medical costs directly associated with homicides. There are many additional costs associated with violence that have not been included due to the difficulty in finding accurate statistics. These include; higher insurance premiums, lost management time dealing with defensive measures against crime, additional security costs, and the productivity loss from investing in less productive assets.

Two of the main economic losses caused by violence are the value lost from life-time employment of homicide victims and the lost value of employment when an employed person is imprisoned. It is estimated that 70% of people imprisoned had full time employment for a year prior to their incarceration.[3] In the model used the cost of incarceration and employment losses through incarcerations create the largest economic impact, therefore incarceration is a significant item in this report.

In order to realize the peace dividend investments will need to be made, but some actions can have quick returns. As an illustrative example let's consider incarceration as it has significant economic effects. Lowering the rates of incarceration of low risk non-violent offenders who are employed in full-time work would have an immediate economic benefit to both state government budgets and the economy. For each person imprisoned tax receipts are lost while the state also has to fund their imprisonment. Additionally, the value of their wage is lost to the economy. This also has flow on effects as their spending employs others. Management programs would be self-funding through reductions in state expenditure on incarceration and increased tax receipts. Estimating the costs or recommending the programs is beyond the scope of this study but lessening new incarcerations of non-violent offenders who are currently employed would have immediate benefits to state government budgets as well the economy.

To further understand lost peacefulness from an economic perspective, an economic index has been developed which aggregates the costs associated with each indicator to highlight changes in the cost of violence over time. This is useful in comparing the economic impact of changes in peace as well as understanding the economic consequences of policy.

3   Visher, C., S. Debus, et al. (2008) "Employment after Prison: A Longitudinal Study of Releasees in Three States " Urban Institute

The U.S. and the global average

The peacefulness of the U.S. can be further analyzed by comparing the internal U.S. 'peace score' from the Global Peace Index with the average GPI score for each of the categories measured. Indicators that are not shaded are those where the U.S. performed better than the global average while indicators shaded red are those where the U.S. scored below the global average.

Table 2 - *USA vs. global average, internal indicators, 2010 Global Peace Index[4]*

Internal Indicators	Average	USA	Difference
OVERALL SCORE	**2.02**	**2.06**	-0.04
Perceptions of criminality in society	3.02	2.00	1.02
Number of internal security officers and police per 100,000 people	2.22	2.00	0.22
Number of homicides per 100,000 people	2.56	2.00	0.56
Number of jailed population per 100,000 people	1.50	5.00	-3.50
Ease of access to small arms and light weapons	3.08	3.00	0.08
Level of organized conflict (internal)	2.33	1.00	1.33
Likelihood of violent demonstrations	2.79	2.00	0.79
Level of violent crime	2.64	2.00	0.64
Political instability	2.47	1.00	1.47
Respect for human rights	2.66	3.00	-0.34
Potential for terrorist acts	2.12	3.00	-0.88
Number of deaths from organized conflict (internal)	1.37	1.00	0.37

It is interesting to note how relatively well the U.S. performs on the majority of the internal indicators when compared to the rest of the world. The U.S. performs particularly well on measures of internal cohesion with low levels of organized internal conflict and a high level of political stability. The country also performs well on the perception of crime within the country and the likelihood of violent demonstrations.

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4   The Global Peace Index is calculated on a 1-5 scoring range where 1=most peaceful.

METHODOLOGY AND DATA SOURCES

The U.S. Peace Index is the first national peace index produced by the Institute for Economics and Peace. Similar in concept to the Global Peace Index, it uses "the absence of violence" as the definition of peace. Five indicators reflecting the incidence or absence of peace have been selected to construct the Index because of the ability to scale these indicators in a consistent way across many nations.

In addition, data for these five indicators was readily available in the U.S. without the need to make qualitative assessments. Owing to the purely quantitative nature of these measurements, it has been possible to collect data from 1991 onwards, and construct U.S. Peace Indices for almost 20 consecutive years. This has allowed for the development of a detailed trend analysis which is included in this report and will hopefully serve as a useful resource for academics interested in further research.

The Indicators

Each of the five indicators is a quantitative measure. The five indicators are:

• *Number of homicides per 100,000 people*

Source: FBI Uniform Crime Reports, 1991-2009

The USPI uses the same definition of homicide as the U.S. Bureau of Justice Statistics, wherein homicide is defined as "murder or non-negligent manslaughter".[5]

• *Number of violent crimes per 100,000 people*

Source: FBI Uniform Crime Reports, 1991-2009

The U.S. Peace Index measure uses the Bureau of Justice Statistics definition of violent crime and the associated quantitative measures. In the U.S., the measure of violent crime includes homicide, forcible rape, robbery, and aggravated assault. The USPI measure of violent crime excludes homicide from this group, as it is already included in the first indicator.

• *Number of jailed population per 100,000 people*

Source: U.S. Bureau of Justice Statistics, 1991-2009

In order to allow for meaningful comparisons across states[6], the USPI only includes prisoners under state jurisdiction who have been sentenced to more than one year in prison. This means that both federal prisoners and prisoners in jail[7] are excluded from this indicator.

• *Number of police officers per 100,000 people*

Source: FBI Uniform Crime Reports, 1991-2009

This number includes both sworn officers and civilian employees.[8] The USPI uses the census population estimates for all states and indicators for the sake of consistency.

• *Availability of small arms*

Source: Centers for Disease Control and Prevention, National Center for Injury Prevention and Control, Fatal Injury Reports, 1991-2007

Although the U.S. has excellent data for many statistics, there is no reliable data on small arms availability, small arms ownership, or small arms sales within the U.S. or within the states of the U.S. An accurate measure of gun prevalence cannot be calculated from administrative records alone. For this reason many studies on gun prevalence use a quantitative proxy. The proxy used in the USPI is: *firearm suicides as a percentage of total suicides* (FS/S). As this indicator varied significantly from year to year for some states, a five year moving average was used in order to smooth out the variance. For example, the figure used for Alabama for 2008 was an average of FS/S for 2003-2007. More detail on why this proxy was chosen is supplied in Appendix B to this report.

All indicators are scored between 1 and 5, with 1 being the most peaceful possible score, and 5 being the least peaceful. Scores are calculated to two decimal places.

Weighting the Index

In order to maintain consistency, the weights assigned to each indicator mirror those used in the GPI for the same measures.[9] GPI indicators weights were agreed upon by an international panel of experts based on a consensus view of their relative importance. The weights assigned to the 5 indicators are presented in table 3 below.

Table 3 - The indicators and their weights

Indicator	Weight
Number of homicides per 100,000 people	4
Number of violent crimes per 100,000 people	4
Number of jailed population per 100,000 people	3
Number of police officers per 100,000 people	3
Availability of small arms	1

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5   From the BJS website: "These data are based solely on police investigation, as opposed to the determination of a court, medical examiner, coroner, jury, or other judicial body." http://bjs.ojp.usdoj.gov/index.cfm?ty=tp&tid=311

6   Although most states have separate prison and jail systems, some states (Connecticut, Rhode Island, Vermont, Delaware, Alaska, and Hawaii) have combined prison and jail systems. "Prisoners sentenced to more than one year" is the most uniform measure of comparing imprisonment across all states.

7   Jails refer to county jails only, as they generally hold only short term offenders as distinct from long term offenders who are held in state or federal prisons.

8   Civilian employees include personnel such as clerks, radio dispatchers, stenographers, jailers, correctional officers, and mechanics provided that they are full-time employees of the agency.

9   With the exception of the indicator for availability of small arms, due to data availability limitations.

Population Estimates

As four of the indicators are rates per 100,000 people, consistent population estimates were needed. The U.S. census bureau[10] was used for population figures for all four indicators.[11]

Using a thirty year average range rather than a one year range in calculating scoring bands

In order to compare changes in score over time, a base range of measurement must be used. Data for the U.S. was available for all years between 1981 and 2009. Furthermore, some of the indicators experienced large swings in raw scores, for example, the large increase in the incarceration rate from 1981-2009, therefore using data from one end of the time period would have resulted in a lack of sensitivity to change in the Index. If 2009 data had been used to create the bands, almost all states would have had scores of 'one' for incarceration until the mid-80's or later. Therefore, the data was calculated using the average of state scores from 1981-2009.

Washington D.C. excluded from the rankings

As incarceration data is not available post 2002 for Washington D.C., it has been excluded from the USPI. However, imputed data was used to construct scores to allow Washington D.C. to be included in the correlation calculations and the economic value of peace section. This was done because the indices that were correlated against the U.S. Peace Index included Washington D.C.

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10 US Census Bureau, P. D. (1 July 2009). "Population Estimates " from http://www.census.gov/popest/states/states.html
11 Raw figures on incarceration for 1980-1998 have not yet been released on the Bureau of Justice Statistics website (BJS), as at March 2011, however a file containing the BJS estimate of the rates is available. This is the source that has been used by IEP for the years 1981-1994 for number of jailed population per 100,000.

A REGIONAL OVERVIEW

The results of the U.S. Peace Index show there are wide variances in peace between the main geographic divides in the United States. While all of the major regions have a mixture of relatively peaceful and less peaceful states, some clear trends are evident when the regions are compared as a whole. There are four major regions, West, Midwest, Northeast and South which are then further divided into nine divisions.

The Northeast was found to be the most peaceful region in the U.S., followed by the Midwest and then the West region which is a very close third. There is a substantial drop in score to the South region which is the least peaceful region in the U.S.

There are nine divisions within the four regions of the U.S. with the most peaceful division being New England, which has a significantly higher score than the second placed West North Central division. There is a 21% difference in their scores which demonstrates, in clear quantitative terms, the high level of peacefulness of New England. Contrasted to this is the West South Central division which is the least peaceful division in the U.S. with a score of 3.46. This score is double that of New England and highlights the wide variance in peace between regions.

Census Regions and Divisions of the United States
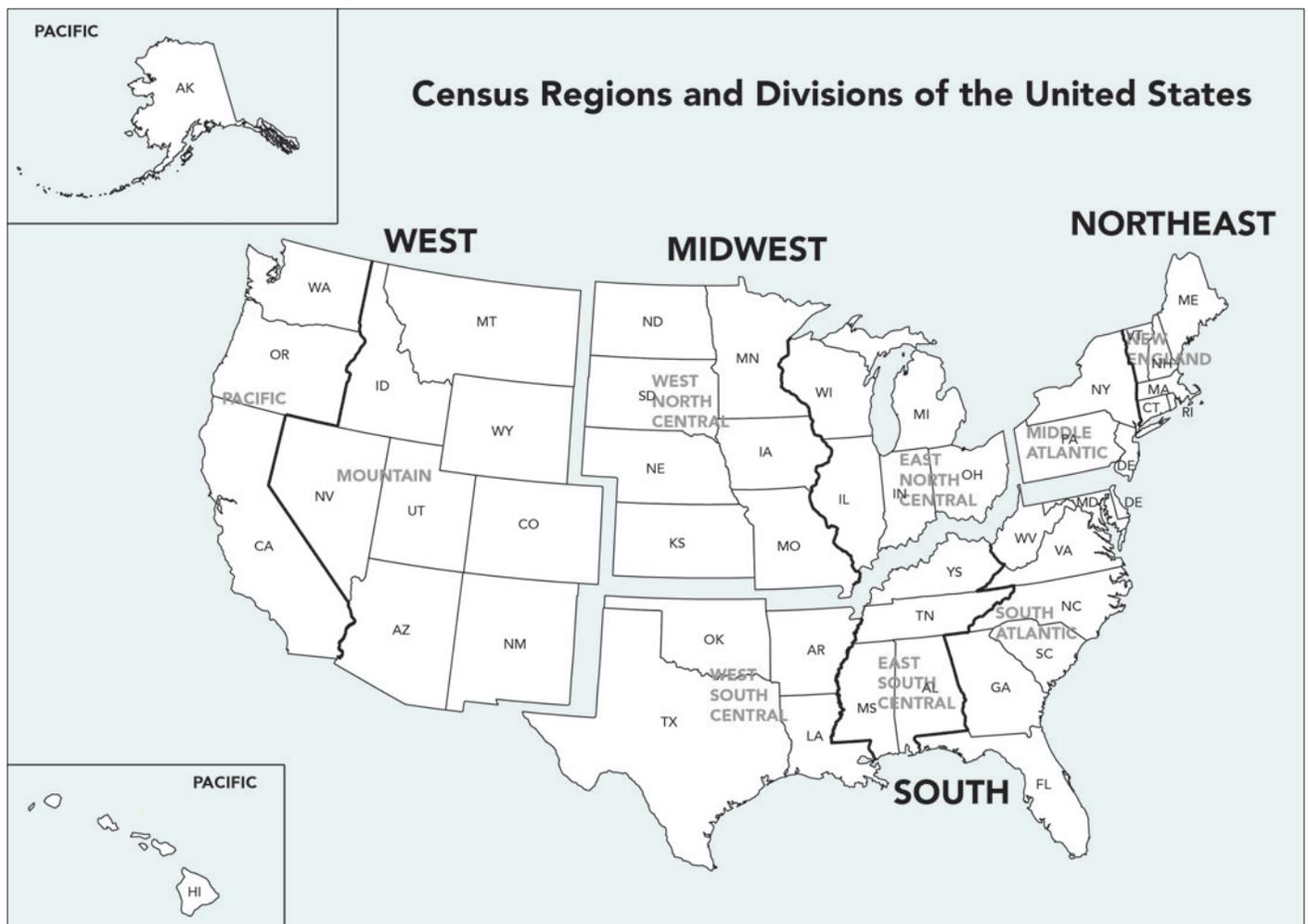
Regional Overview

Average Score		
NORTHEAST	1.99	
Mid-Atlantic	2.57	
New England	1.70	
MIDWEST	2.34	
East North Central	2.60	
West North Central	2.15	
WEST	2.51	
Mountain	2.65	
Pacific	2.29	
SOUTH	3.13	
East South Central	3.10	
South Atlantic	2.99	
West South Central	3.46	

The lower the score, the more peaceful the region

Northeast Region

Northeast	Overall Score	Overall Rank	Regional Rank	Divisional Rank
Maine	1.34	1	1	1
New Hampshire	1.50	2	2	2
Vermont	1.54	3	3	3
Massachusetts	1.80	7	4	4
Rhode Island	1.83	8	5	5
Connecticut	2.21	15	6	6
Pennsylvania	2.42	21	7	1
New Jersey	2.61	26	8	2
New York	2.69	29	9	3
	Mid Atlantic		New England	

The Northeast region is the most peaceful region in the U.S., with all of its states ranking in the top thirty of the U.S. Peace Index, including the heavily populated states of New York, Pennsylvania, and New Jersey. New England is clearly the most peaceful division in the nation with three of the five most peaceful states found in this division. Connecticut is the only state in New England outside the top 10, with a slightly lower ranking of 15.

The Mid-Atlantic division is the fourth most peaceful division in the country, with an average USPI score of 2.57. Relatively speaking this is significantly less peaceful than its regional counterpart New England, which has an average USPI score of 1.70. Of the top five most heavily populated states in the country, New York is ranked highest.

Midwest Region

Midwest	Overall Score	Overall Rank	Regional Rank	Divisional Rank
Wisconsin	2.30	19	6	1
Ohio	2.43	22	7	2
Indiana	2.50	24	8	3
Michigan	2.79	31	10	4
Illinois	2.98	35	11	5
Minnesota	1.62	4	1	1
North Dakota	1.71	5	2	2
Iowa	1.85	9	3	3
Nebraska	1.88	11	4	4
South Dakota	2.17	14	5	5
Kansas	2.63	27	9	6
Missouri	3.21	40	12	7
	West North Central		East North Central	

The Midwest region is the second most peaceful region with three of the ten most peaceful states in the country coming from this region. All of these states are in the West North Central division which is the most peaceful division in the Midwest. Missouri is the outlier for this division with a ranking of 40th.

The East North Central division is 21% less peaceful than the West North Central division and contains two of the heavily populated states in the U.S., Michigan and Illinois. Three of its five states rank in the first half of the USPI: Wisconsin, Ohio, and Indiana.

A REGIONAL OVERVIEW

West Region

West	Overall Score	Overall Rank	Regional Rank	Divisional Rank
Utah	1.75	6	1	1
Idaho	2.24	16	5	2
Montana	2.28	17	6	3
Wyoming	2.49	23	7	4
Colorado	2.66	28	8	5
Arizona	3.14	37	11	6
New Mexico	3.16	38	12	7
Nevada	3.50	48	13	8
Washington	1.87	10	2	1
Hawaii	1.91	12	3	2
Oregon	2.08	13	4	3
Alaska	2.70	30	9	4
California	2.89	33	10	5
Mountain			Pacific	

The West region has significant internal variances in its peace, with two of the 10 most peaceful states situated in this region (Utah and Washington), whilst Nevada is ranked in the bottom 5 at 48th.

The Pacific division is the third most peaceful division in the nation, while the Mountain division is the 6th most peaceful, having an average score that is slightly less peaceful than the national average.

The populous state of California has made significant improvements in its ranking from 43rd in 1991 to 33rd in 2009.

The large variance in the Mountain region is somewhat expected given it is also the largest geographic region.

South Region

South	Overall Score	Overall Rank	Regional Rank	Divisional Rank
Kentucky	2.39	20	2	1
Mississippi	2.97	34	5	2
Alabama	3.42	46	13	3
Tennessee	3.61	49	15	4
West Virginia	2.28	18	1	1
Virginia	2.52	25	3	2
North Carolina	2.79	32	4	3
Delaware	3.14	36	6	4
Georgia	3.18	39	7	5
Maryland	3.24	41	8	6
South Carolina	3.26	42	9	7
Florida	3.5	47	14	8
Oklahoma	3.27	43	10	1
Arkansas	3.30	44	11	2
Texas	3.30	45	12	3
Louisiana	3.97	50	16	4
East South Central	South Atlantic		West South Central	

The South region is the least peaceful region in the U.S. according to the U.S. Peace Index. Only two states in the South are ranked in the top 20, with the most peaceful being West Virginia and Kentucky. Nine of the ten least peaceful states are from the South division indicating that the South has the largest economic gains to be made from improving its peacefulness.

The sprawling South Atlantic division is home to the most peaceful Southern state West Virginia which is ranked at 18th, while Kentucky is the most peaceful state in East South Central division and ranked at 20th. The East South Central division and West South Central division are the least peaceful divisions in the U.S., with the West South Central division being the only division to have an average score higher than three. All four states in the West South Central division are ranked in the 10 least peaceful states nationally. The distribution of the scores show significant difference between the bottom ten, with Louisiana clearly the least peaceful state in the country with 0.36 points or 10% separating it from Tennessee at 49th.

THE FIVE MOST PEACEFUL STATES

This section provides a snapshot of the top five states, their scores, ranks, and their performance on each of the statistically significant factors that were correlated with the USPI. These significant factors are detailed further in the section on investigating the potential determinants of peace. It is interesting to note that while there is general alignment between ranking and the USPI, different states do perform differently on these factors. Further qualitative research to understand how these factors affect peace could yield potentially interesting results.

The rankings in the dialogue boxes contain the ranks of the key factors that correlated with the USPI and give an indication of how well the top performing states do in providing education, health and opportunity. These rankings are out of 51 as the data for the correlating factors contained Washington D.C. Data was imputed for Washington D.C. for the U.S. Peace Index to provide the same number of elements for correlation. Washington D.C. has been excluded from the U.S. Peace Index rankings, refer to page 9. A rank closer to one is positive for all factors. Analysis is based on 2009 data.

Maine – Rank 1

Maine achieved its number one ranking through being placed first on three of the five indicators in the U.S. Peace Index. These indicators are number of violent crimes, number of police officers and the incarceration rate. The homicide rate at 2 per 100,000 places Maine ninth in the country.

Maine has been consistently peaceful for the nineteen years that the Index has been compiled, never falling out of the top two states since 1991, and holding the number one spot since 2000. Unlike other states, Maine's score has not changed much since 1991.

Maine's ranking on key social and economic factors does not reflect the high USPI score as well as other high ranking states. The highest ranking that Maine achieved in social indicators was the teenage pregnancy rate, ranking 7th in the country, and the percentage of people without access to health insurance with a ranking of 6th. Importantly, Maine also scored in the top ten on both the Gallup State of the States (2009) Basic Access score and the percentage of people holding a high school diploma.

The factors not corresponding to Maine's high peace score are the relatively average score Maine achieved on the key health indicators of life expectancy and infant mortality and the percentage of children living in single parent families (32.6%). The 2009 average unemployment rate at 8.1% places it below the national average.

Table 4 – Maine ranking on indicators and correlated factors	
Overall Score	**1.34**
	Ranking out of 50
Overall Rank	**1**
Number of homicides per 100,000 people	9 (2)
Number of violent crimes per 100,000 people	1 (118)
Number of jailed population per 100,000 people	1 (150)
Number of police employees per 100,000 people	1 (217)
Availability of small arms	29 (54%)
	Ranking out of 51
% with at least high school diploma (2009)	10
High school graduation rate (2008) (out of 49)	20
PEW State of the States - Educational opportunities	23
% without health insurance (2008-2009)	6
% with diabetes (2008)	26
Life expectancy at birth (2007)	28
Teenage pregnancy rate (2008)	7
Infant mortality rate (2007)	15
Teenage death rate (2007)	14
Household income Gini coefficient - inequality (2009)	10
% in poverty(2009)	22
Gallup State of the States (2009) Basic access	10
Labor force participation rate (2009)	19
% children in single parent families (2009)	26
% individuals with home internet access (2009)	13

THE FIVE MOST PEACEFUL STATES

New Hampshire – Rank 2

New Hampshire has been consistently ranked at the top of the USPI, its lowest rank being fourth in 1998. It has been second every year since 2003. New Hampshire received very low scores (indicating high levels of peace) on three of the five indicators - homicide, violent crime and the incarceration rate.

The homicide rate is the lowest in the country, at below 1 per 100,000 of population, which places it well below the national average of 4.96 and well below many developed nations.

As can be seen in table 5 New Hampshire was also placed number one on three correlating factors, having the lowest poverty rate of 8.6%, a teenage pregnancy rate of 19.8% and the highest percentage of individuals with home internet access in the country at 84.7%.

New Hampshire also recorded the second highest ranking on the PEW State of the States-educational opportunities score as well as having a low percentage of children living in single parent families. The only factor where New Hampshire was not found to be in the top quartile was life expectancy at birth. As of October 2010, the unemployment rate is one of the lowest in the country at 6.4% with a per capita income in 2008 of $49,467 being the 7th highest in the nation.

Vermont – Rank 3

Vermont has had a consistently high rank in the UPSI since 1991, alternating between 3rd and 4th over the 19 year period. Vermont's ranking has therefore remained remarkably consistent over this period.

These rankings are mainly based on very low homicide rates, and a falling violent crime rate both of which are the second lowest in the nation.

On key factors that correlated with the USPI, Vermont scores very well on education, with the highest high school graduation rate in the country. It ranks fifth on percentage of people with a high school diploma and fifth on educational opportunities. Vermont has the third lowest teenage pregnancy rate, third lowest infant mortality rate, and the lowest teenage death rate in the nation. The state is also one of the more equal on income distribution and is placed 6th in the country; this corresponds to a slightly higher poverty rate just outside of the top ten, at 11.5% of the population.

The factors where Vermont had the poorest scores were a relatively low life expectancy at birth, ranked 38th in the nation, although this is less significant than it may seem given the small range of life expectancy between states. It also achieved a middle ranking on percentage of individuals with home internet access.

Table 5 – New Hampshire ranking on indicators and correlated factors	
Overall Score	1.50
	Ranking out of 50
Overall Rank	2
Number of homicides per 100,000 people	1 (0.8)
Number of violent crimes per 100,000 people	3 (159)
Number of jailed population per 100,000 people	4 (206)
Number of police employees per 100,000 people	7 (253)
Availability of small arms	10 (46%)
	Ranking out of 51
% with at least high school diploma (2009)	4
High school graduation rate (2008) (out of 49)	9
PEW State of the States - Educational opportunities	2
% without health insurance (2008-2009)	7
% with diabetes (2008)	13
Life expectancy at birth (2007)	38
Teenage pregnancy rate (2008)	1
Infant mortality rate (2007)	7
Teenage death rate (2007)	5
Household income Gini coefficient – inequality (2009)	7
% in poverty (2009)	1
Gallup State of the States (2009) Basic access	7
Labor force participation rate (2009)	5
% children in single parent families (2009)	3
% individuals with home internet access (2009)	1

Table 6 – Vermont ranking on indicators and correlated factors	
Overall Score	1.54
	Ranking out of 50
Overall Rank	3
Number of homicides per 100,000 people	2 (1.1)
Number of violent crimes per 100,000 people	2 (130)
Number of jailed population per 100,000 people	10 (277)
Number of police employees per 100,000 people	3 (228)
Availability of small arms	21 (52%)
	Ranking out of 51
% with at least high school diploma (2009)	5
High school graduation rate (2008) (out of 49)	1
PEW State of the States - Educational opportunities	5
% without health insurance (2008-2009)	5
% with diabetes (2008)	4
Life expectancy at birth (2007)	38
Teenage pregnancy rate (2008)	3
Infant mortality rate (2007)	3
Teenage death rate (2007)	1
Household income Gini coefficient - inequality (2009)	6
% in poverty(2009)	12
Gallup State of the States (2009) Basic access	12
Labor force participation rate (2009)	8
% children in single parent families (2009)	18
% individuals with home internet access (2009)	25

Minnesota – Rank 4

Minnesota is the 4th most peaceful state with two of its indicators in the top 5 of the USPI. The state has the 3rd lowest incarceration rate and 5th lowest number of homicides.

Historically, this represents the highest that Minnesota has scored in the 19 years that the Index was compiled, having progressively improved its score from 7th in 1991.

The improvements have been driven by lowering homicide and violent crime rates, while incarceration has gradually increased, along with the number of police officers per 100,000 people.

Minnesota's status as a peaceful state is closely reflected in key economic and social factors. On seven of the 15 correlated factors the state ranked in the top three of the nation. It has the highest labor force participation rate, basic access to services, lowest percentage of the population with diabetes and the highest life expectancy in the nation at 80 years. It scores notably high on the two key educational indicators being the percentage of people with at least a high school diploma and the high school graduation rate.

Only three of Minnesota's key correlating factors were not in the top ten: the poverty rate (10.9%), household income inequality and percentage of individuals with home internet access.

North Dakota – Rank 5

At number five, North Dakota's rank in 2011 is the lowest it has ranked in the data period for which the USPI has been calculated. The state stands out as having been the most peaceful state each year between 1991 and 1999. As a result, despite its very high ranking, it has recorded the largest fall and its score has fallen by almost 50% since 1991. Despite this fall, North Dakota still has three indicators in the top ten and was coming off an exceptionally high level of peace.

The decrease in peace has largely been driven by increases in violent crime and incarceration, while homicide levels have remained largely the same. Most striking about North Dakota's indicators is the 250% increase in violent crime since 2003. This is out of keeping with the national trend, which has seen decreasing violent crime.

North Dakota has seven economic and social factors in the top ten of the rankings, with one of the highest labor force participation rates in the country as well as ranking 4th on the Gallup State of the States basic access, while also having a relatively low percentage of children living in single parent families. The state also benefits from having one of the lowest unemployment rates in the nation. However the teenage death rate is one of the highest in the nation, with 89 per 100,000 placing it 44th.

Table 7 – Minnesota ranking on indicators and correlated factors	
Overall Score	1.62
	Ranking out of 50
Overall Rank	4
Number of homicides per 100,000 people	5 (1.4)
Number of violent crimes per 100,000 people	10 (242)
Number of jailed population per 100,000 people	3 (190)
Number of police officers per 100,000 people	11 (260)
Availability of small arms	13 (47%)
	Ranking out of 51
% with at least high school diploma (2009)	2
High school graduation rate (2008) (out of 49)	3
PEW State of the States - Educational opportunities	5
% without health insurance (2008-2009)	3
% with diabetes (2008)	1
Life expectancy at birth (2007)	1
Teenage pregnancy rate (2008)	8
Infant mortality rate (2007)	9
Teenage death rate (2007)	5
Household income Gini coefficient - inequality (2009)	15
% in poverty (2009)	10
Gallup State of the States (2009) Basic access	1
Labor force participation rate (2009)	1
% children in single parent families (2009)	5
% individuals with home internet access (2009)	12

Table 8 – North Dakota ranking on indicators and correlated factors	
Overall Score	1.71
	Ranking out of 50
Overall Rank	5
Number of homicides per 100,000 people	7 (1.55)
Number of violent crimes per 100,000 people	5 (199)
Number of jailed population per 100,000 people	6 (230)
Number of police officers per 100,000 people	16 (268)
Availability of small arms	26 (53%)
	Ranking out of 51
% with at least high school diploma (2009)	11
High school graduation rate (2008) (out of 49)	7
PEW State of the States - Educational opportunities	8
% without health insurance (2008-2009)	8
% with diabetes (2008)	18
Life expectancy at birth (2007)	6
Teenage pregnancy rate (2008)	10
Infant mortality rate (2007)	32
Teenage death rate (2007)	44
Household income Gini coefficient - inequality (2009)	21
% in poverty(2009)	13
Gallup State of the States (2009) Basic access	4
Labor force participation rate (2009)	3
% children in single parent families (2009)	4
% individuals with home internet access (2009)	32

THE FIVE LEAST PEACEFUL STATES

Louisiana – Rank: 50

With a score of 3.97, Louisiana is the lowest ranking state on the USPI. It is however interesting to note that since 1997 Louisiana has increased its peacefulness by 17%. This was due to improvements in all of its indicators other than the incarceration rate.

Although Louisiana has a high crime rate, the number of police officers is near the national average. Louisiana however has the highest incarceration rate of any state at 886 prisoners per 100,000 people, as well as the highest number of homicides. This closely corresponds to very high availability of small arms at 67% or 3rd highest gun availability in the country.

Louisiana's low state of peace corresponds to a bottom ten ranking in all 15 significant correlations. Louisiana is ranked 48th on the infant mortality rate (9.17), has 10.7% of the population with diabetes, while 16% of the population is not covered by health insurance. The state is characterized by a high poverty rate of 17.6%, low perceptions of access to services, lower than average labor force participation rates and the fourth worst income inequality in the country. Louisiana does however have lower-than-national average unemployment.

Tennessee – Rank: 49

Tennessee is one of the states that has been steadily falling down the rankings. It was ranked 31st in 1994 and spent most of the early to mid-90s out of the bottom ten. Since 2000 however, Tennessee has consistently ranked between second to fourth from the bottom.

In spite of this, Tennessee has actually slightly improved its USPI score since 2005. Over the past five years Tennessee has lowered its violent crime rate while also maintaining its incarceration and homicide rates.

On key economic and social development indicators, Tennessee is near the bottom for eleven of the 15 statistically significant factors. These all relate to economic, health, education and demographic factors.

The state also has the third highest rate of diabetes in the country and the third highest rate of infant mortality. Educational opportunities are in the bottom ten with the seventh highest poverty rate in the U.S. at 17.2%.

Table 9 – Louisiana ranking on indicators and correlated factors	
Overall Score	3.97
	Ranking out of 50
Overall Rank	50
Number of homicides per 100,000 people	50 (11.8)
Number of violent crimes per 100,000 people	44 (608)
Number of jailed population per 100,000 people	50 (886)
Number of police employees per 100,000 people	33 (344)
Availability of small arms	48 (67%)
	Ranking out of 51
% with at least high school diploma (2009)	46
High school graduation rate (2008) (out of 49)	47
PEW State of the States - Educational opportunities	42
% without health insurance (2008-2009)	35
% with diabetes (2008)	48
Life expectancy at birth (2007)	46
Teenage pregnancy rate (2008)	43
Infant mortality rate (2007)	48
Teenage death rate (2007)	48
Household income Gini coefficient - inequality (2009)	47
% in poverty(2009)	45
Gallup State of the States (2009) Basic access	47
Labor force participation rate (2009)	45
% children in single parent families (2009)	49
% individuals with home internet access (2009)	43

Table 10 – Tennessee ranking on indicators and correlated factors	
Overall Score	3.61
	Ranking out of 50
Overall Rank	49
Number of homicides per 100,000 people	47 (7.3)
Number of violent crimes per 100,000 people	48 (660)
Number of jailed population per 100,000 people	29 (428)
Number of police employees per 100,000 people	48 (404)
Availability of small arms	45 (65%)
	Ranking out of 51
% with at least high school diploma (2009)	42
High school graduation rate (2008) (out of 49)	35
PEW State of the States - Educational opportunities	42
% without health insurance (2008-2009)	31
% with diabetes (2008)	47
Life expectancy at birth (2007)	9
Teenage pregnancy rate (2008)	44
Infant mortality rate (2007)	44
Teenage death rate (2007)	42
Household income Gini coefficient - inequality (2009)	39
% in poverty(2009)	43
Gallup State of the States (2009) Basic access	40
Labor force participation rate (2009)	41
% children in single parent families (2009)	40
% individuals with home internet access (2009)	40

Nevada – Rank: 48

While Nevada's USPI score and rankings have varied in the past ten years, ranging between 45 and 48, it is the now at the same rank as it was in 1999. The most violent period for Nevada was in the late 90s with violent crime peaking in 1994 at 990 per 100,000 of population. Nevada's violent crime rate is the worst in the country with 696 violent crimes per 100,000, well above the national average of 424 for 2009. It is also one of the highest policed states in the country.

Notably, since 2004, the number of police officers has increased from below 350 to 383 per 100,000 of population in 2009, while there has also been an increase in the number of violent crimes per 100,000 from 610 in 2004 to 696 in 2009.

On social and economic factors, Nevada has very poor scores on a number of indicators relating to education. The high school graduation rate is the lowest in nation at 51.3% and is second last on educational opportunities, just ahead of New Mexico.

Poor education is also coupled with poor access to services (48th) and the state is in the bottom ten states in percentage of people with health insurance, percentage of people with a high school diploma and the teenage pregnancy rate. In spite of this, Nevada is ranked well for income inequality being the 12th most equal state and is in the best performing half for percentage of the population living in poverty.

Florida – Rank: 47

Since 1991, Florida has consistently ranked in the bottom ten of the USPI. Its best ever ranking was 44th in 1995 and the lowest it has been is 49th in 2008. However Florida's USPI score has improved over time, indicating there has been a net improvement is peace since the early 90s.

This increase in peacefulness was the result of falls in the homicides and the violent crime rate, both of which are nonetheless above the respective national averages. Notably, the homicide rate increased when the incarceration rate also increased in the 2000s, while violent crime did however fall.

Florida's status on key social and economic factors closely reflects its low rank. In five of the factors, Florida is in the bottom ten of the nation, ranking last in percentage of the population without health insurance, eighth last on perceptions of basic access and having low high school graduation rates. It has the 7th highest number of children living in single parent families. The state also has a corresponding high level of income inequality, eighth worst in the nation, a poverty rate in the bottom half of all states, and an unemployment rate slightly above national average.

Table 11 – Nevada ranking on indicators and correlated factors	
Overall Score	3.50
Ranking out of 50	
Overall Rank	48
Number of homicides per 100,000 people	38 (5.9)
Number of violent crimes per 100,000 people	50 (696)
Number of jailed population per 100,000 people	36 (472)
Number of police employees per 100,000 people	45 (383)
Availability of small arms	32 (55%)
Ranking out of 51	
% With at least High School diploma (2009)	40
High school graduation rate (2008) (out of 49)	49
PEW State of the States - Educational opportunities	49
% without health insurance (2008-2009)	48
% with diabetes (2008)	32
Life expectancy at birth (2007)	15
Teenage pregnancy rate (2008)	42
Infant mortality rate (2007)	17
Teenage death rate (2007)	31
Household income Gini coefficient - inequality (2009)	12
% in poverty(2009)	19
Gallup State of the States (2009) Basic access	48
Labor force participation rate (2009)	17
% children in single parent families (2009)	36
% individuals with home internet access (2009)	22

Table 12 – Florida ranking on indicators and correlated factors	
Overall Score	3.50
Ranking out of 50	
Overall Rank	47
Number of homicides per 100,000 people	36 (5.5)
Number of violent crimes per 100,000 people	43 (607)
Number of jailed population per 100,000 people	44 (561)
Number of police employees per 100,000 people	46 (390)
Availability of small arms	19 (50%)
Ranking out of 51	
% with at least high school diploma (2009)	34
High school graduation rate (2008) (out of 49)	44
PEW State of the States - Educational opportunities	32
% without health insurance (2008-2009)	50
% with diabetes (2008)	38
Life expectancy at birth (2007)	38
Teenage pregnancy rate (2008)	30
Infant mortality rate (2007)	28
Teenage death rate (2007)	32
Household income Gini coefficient - inequality (2009)	42
% in poverty(2009)	33
Gallup State of the States (2009) Basic access	43
Labor force participation rate (2009)	33
% children in single parent families (2009)	44
% individuals with home internet access (2009)	26

THE FIVE LEAST PEACEFUL STATES

Alabama – Rank: 46

Alabama's 46th placed ranking is its worst ranking in the period from 1991 to 2009, a position it has held for the past two years of the USPI. This is in spite of the fact its peace has improved - clearly not at a fast enough pace to outperform other states. Homicides have been on the decrease since 2004. Alabama has the third highest availability of small arms being behind West Virginia and Mississippi.

On social development and economic indicators, Alabama is last for internet access and second last on the percentage of the population with diabetes, 11.2% of the population. The infant mortality rate is 8.98 per 100,000 births. Alabama has high income inequality with 17.5% of the population living below the poverty line.

The state performs poorly on educational factors as well, being in the bottom ten for percentage of those with a high school diploma, high school graduation rate, and PEW educational opportunities.

Table 13 – Alabama ranking on indicators and correlating factors	
Overall Score	3.42
	Ranking out of 50
Overall Rank	**46**
Number of homicides per 100,000 people	46 (6.9)
Number of violent crimes per 100,000 people	33 (443)
Number of jailed population per 100,000 people	46 (652)
Number of police employees per 100,000 people	40 (359)
Availability of small arms	48 (69%)
	Ranking out of 51
% with at least high school diploma (2009)	47
High school graduation rate (2008) (out of 49)	43
PEW State of the States - Educational opportunities	42
% without health insurance (2008-2009)	37
% with diabetes (2008)	49
Life expectancy at birth (2007)	3
Teenage pregnancy rate (2008)	40
Infant mortality rate (2007)	49
Teenage death rate (2007)	46
Household income Gini coefficient - inequality (2009)	46
% in poverty(2009)	44
Gallup State of the States (2009) Basic access	35
Labor force participation rate (2009)	46
% children in single parent families (2009)	46
% individuals with home internet access (2009)	50

INVESTIGATING THE POTENTIAL DETERMINANTS OF PEACE

To further understand what types of environments are associated with peace, the IEP has compiled a dataset of over 30 secondary factors grouped by category which gauge education, health, economic conditions, political attitudes and demographics and are correlated against the USPI to determine which factors are statistically significant. Each of the five USPI indicators were also correlated against one another to determine their significance.

Table 14 – USPI Correlation Coefficients

CORRELATION COEFFICIENTS		Overall Score
	Overall Score	1.00
	Overall Rank	0.97
USPI Indicators	Number of homicides per 100,000 people	0.91
	Number of violent crimes per 100,000 people	0.86
	Number of jailed population per 100,000 people	0.80
	Number of police employees per 100,000 people	0.72
	Availability of small arms	0.21
Education	% with at least high school diploma (2009)	-0.63
	High school graduation rate (2007)	-0.72
	% bachelor's degree or higher (2009)	-0.07
	Average teacher salary (2006)	0.10
	PEW State of the States - Educational opportunities	0.57
	Educational funding (per student average) (2005-06)	-0.11
Health	% without health insurance (2008-2009)	0.61
	% with diabetes (2008)	0.55
	Life expectancy at birth (2007)	-0.62
	% Adult obesity (2008)	0.32
	Teenage pregnancy rate (2008)	0.68
	Infant mortality rate (2007)	0.68
	Gallup State of the States (2009) Wellbeing	-0.30
	Teenage death rate (2007)	0.59
Economic Conditions	Household income Gini coefficient (2009)	0.57
	% households in poverty(2009)	0.56
	Gallup State of the States (2009) Basic Access	-0.75
	Unemployment rate (2009)	0.37
	Labor force participation rate (2009)	-0.55
	GSP per capita (2009)	0.32
	Median income (2008-2009)	-0.34
	US Human Development Index (2008)	-0.26
Politics & Demographics	% Children in single parent families (2009)	0.76
	2008 election (% voted republican)	0.02
	2008 election (% voted democrat)	0.01
	2008 election (voter turnout)	-0.43
	Reported political affiliation (% conservative)	-0.02
	Reported political affiliation (% moderate)	-0.04
	Reported political affiliation (% liberal)	0.00
	PEW State of the States - Campaign finance	-0.09
	PEW State of the States - Government management	-0.15
	% individuals with home internet access (2009)	-0.49
	Armed forces participation rate (2009)	0.00
	Population (2009)	0.23
	% population aged 16-24 (2009)	-0.14
	% male population aged 16-24 (2009)	-0.25
	% females in labor force (2009)	-0.53

The correlation coefficients are calculated across the full 50 states plus Washington D.C. Values where $r > 0.5$ and $r < -0.5$ were considered to be significant and have been highlighted in red. A high positive correlation suggests that the factor is associated with violence, while a high negative correlation suggests that the factor is associated with increasing peacefulness.

Out of the 37 secondary factors correlated against the USPI, 15 emerged as statistically significant. The selection of these secondary factors was based purely on the availability of data at the state level for the shown categories and not related to normative preferences. Future iterations of the USPI could have more secondary factors or even new categories added.

The health category registered the highest number of correlations where six of the eight factors were found to be significant. Four of the economic and three of the education factors also correlated significantly, while only two of the demographic indicators showed a significant correlation and none of the factors associated with political attitudes correlated.

The three strongest correlating factors were the Gallup State of the States Basic Access, the percentage of children in single parent families and the high school graduation rate, all of which recorded correlations above either 0.7 or -0.7.

The health indicators that significantly correlated are reliable indicators of bodily well-being. As is extensively discussed in the literature on human capital theory, health is an important determinant to an individual's productivity and personal ability to compete in the workforce and in society more generally. How these health correlations link to violence is a phenomenon requiring further detailed qualitative investigation, as the concentration of correlating health factors is significant.

Poverty rates and household income inequality also correlated with violence.

The high school graduation rate had one of the strongest positive correlations. Also correlating significantly was educational opportunity.

What is striking is that funding per student, the per cent of students with a diploma and the salaries of teachers did not correlate significantly. This would imply that providing an education and having educational opportunity is more important to peace than the quality of the education. These same factors had a similar level of significance at the global level, when analyzed by the Global Peace Index.

Notably, the factors that conclusively did not correlate were those relating to political affiliation, whether liberal, conservative, or moderate. This showed that political affiliation has no immediate connection to violence at the state level.

While more Democratic states are represented in the top five states and more Republican states in the bottom five, these rankings were neutralized by the mix in the middle ranking states. Voter turnout correlated significantly prior to the 2008 presidential election, but fell to 0.43 in 2008 suggesting engagement in the political process is potentially important in reducing violence.

Health and education were also factors that correlated strongly with the Global Peace Index, which would indicate that these factors are not only important within the U.S. but also in many other nations.

Chart 1 - Correlations with the U.S. Peace Index across areas[12]

Education

Three of the six factors related to education correlate strongly with the USPI. The strongest correlation is with high school completion through two measures: the percentage of students who graduate from a certain year and the percentage of the state population as a whole that has a high school qualification. The third measure that correlated significantly was educational opportunity. Other measures, such as funding per student, average teacher salary or percentage of the state with an undergraduate degree, did not significantly correlate with the U.S. Peace Index.

This suggests that the key driver of peace in relation to education is the high school graduation rate. This finding aligns with research from the Global Peace Index which has reviewed similar educational indicators internationally. These show that mean years of schooling is the leading education indicator while percentage of GDP spent on education and tertiary graduation rates are not as significant.
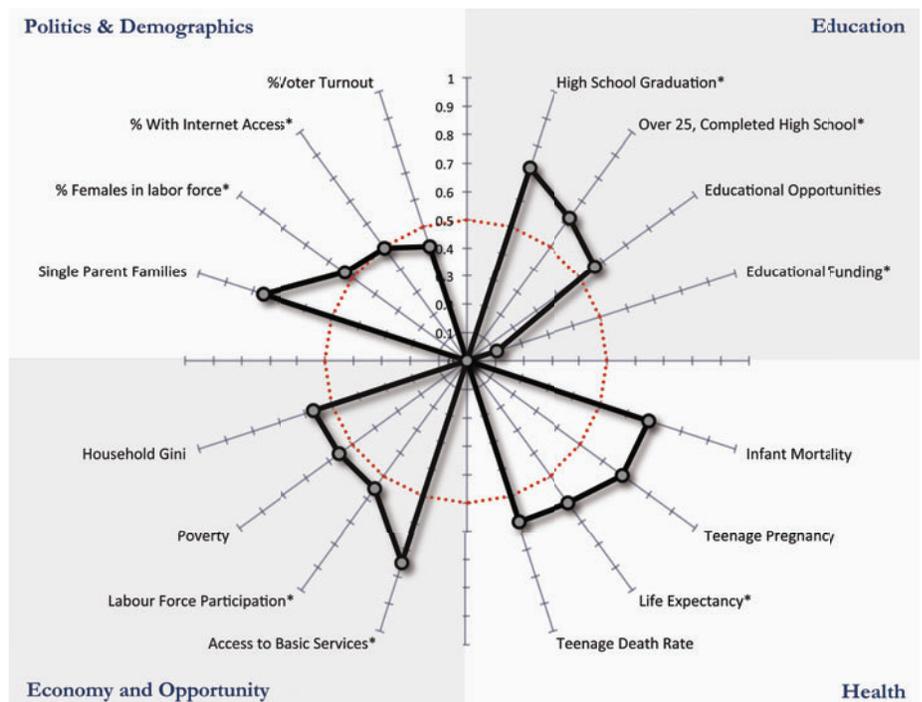
Chart 1
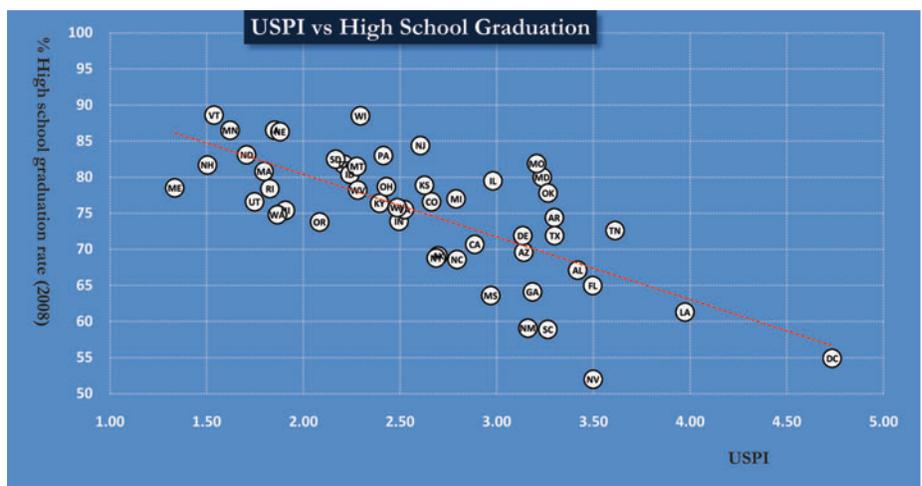
Chart 2

Chart 2 – The high school graduation rate is correlated to peace (2008)

The 2008 high school graduation rate correlates strongly with the USPI (r= -.63). The one outlier is Nevada, which ranked 48th on the U.S. Peace Index with a high school completion rate of just 51%, making it not only the lowest rate in the country, but over 13% behind the next lowest completion rate. Wisconsin and Vermont recorded the highest high school completion rates with 89.6% and 89.3%, while placed at 19th and 3rd respectively on the USPI.

Chart 3 – States with more people holding a high school diploma tend to be more peaceful

High school diploma holders, whilst similar to the high school graduation rate, differs slightly in that it measures the number of people over the age of

25 who have at least a high school diploma. Once again, the correlation is quite strong (r= -.72).

At the bottom of the distribution are California, Mississippi and Texas, which have approximately 20% of the population aged over 25 not holding a high school diploma.

Chart 4 – States with more educational opportunity tend to be more peaceful

The PEW Educational Opportunities is a qualitative measure of educational opportunities at a number of different stages through an individual's life, up to and including high school. The correlation between the USPI and educational opportunities correlates at r=.57. The states that have the lowest levels of educational opportunity are New Mexico, Nevada and Mississippi, with Massachusetts being the only state to receive an A.

Health

The health category had more factors correlating to peace than any of the other categories measured, with six of the eight factors being statistically significant. Three of the significant factors are the infant mortality rate, teenage pregnancy rate, teenage death rate and life expectancy at birth.

The two health factors that didn't correlate significantly are Gallup Wellbeing and adult obesity, however both still had scores which would indicate that there may be a relation. These scores were -.3 and .32 respectively.

Chart 5 – States with lower infant mortality tend to be more peaceful

Infant mortality has one of the strongest correlation coefficients of all the factors looked at in the USPI (r=.68). Although data is not available for every year, the correlation between the USPI and infant mortality has been similarly strong for every year that data is available.
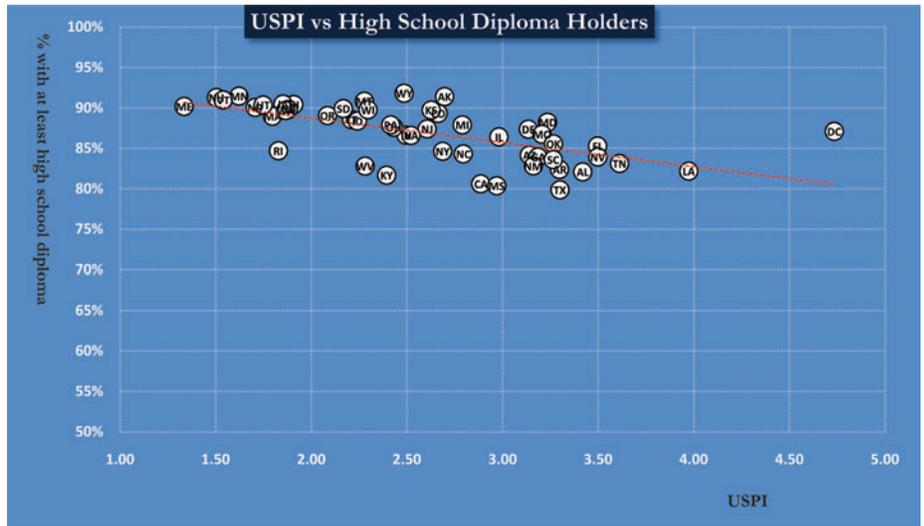
Chart 3
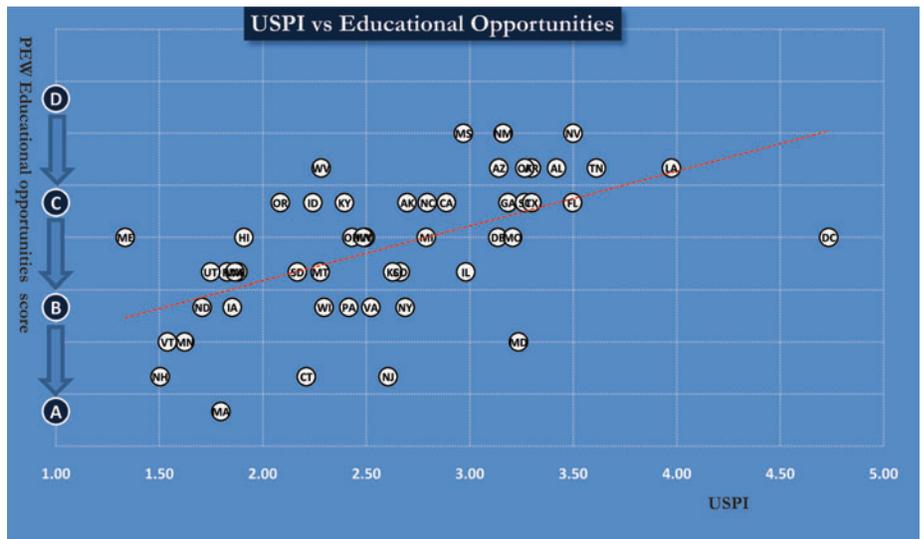
Chart 4
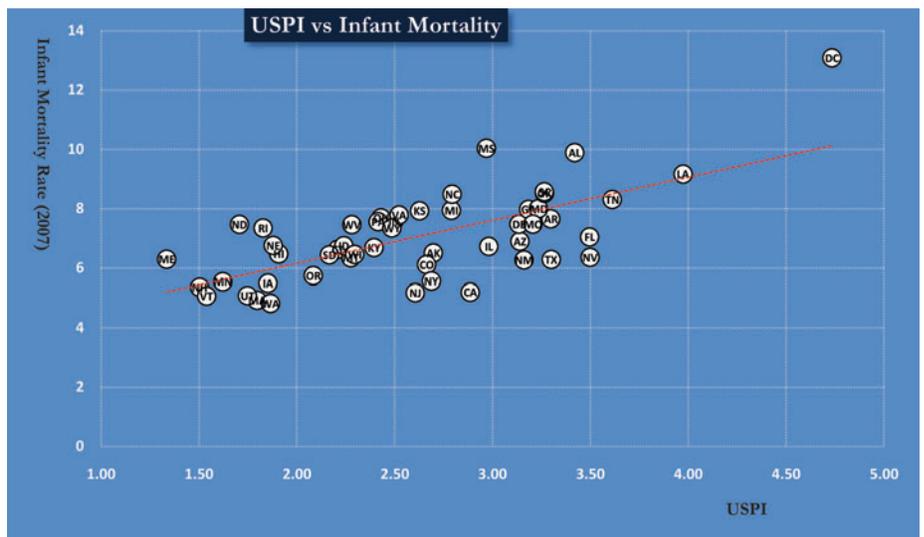
Chart 5

Chart 6 – States with lower rates of teenage pregnancy tend to be more peaceful [13]

The relationship between the USPI and teenage pregnancy (r=.68) is one of the stronger overall correlations. The teenage pregnancy rate measures the number of pregnancies per 1,000 that occur to women between the ages of 15 and 19. Mississippi, New Mexico, Oklahoma, Texas and Arkansas have the highest teenage pregnancy rates in the U.S., and are also all ranked in the bottom half of the USPI.
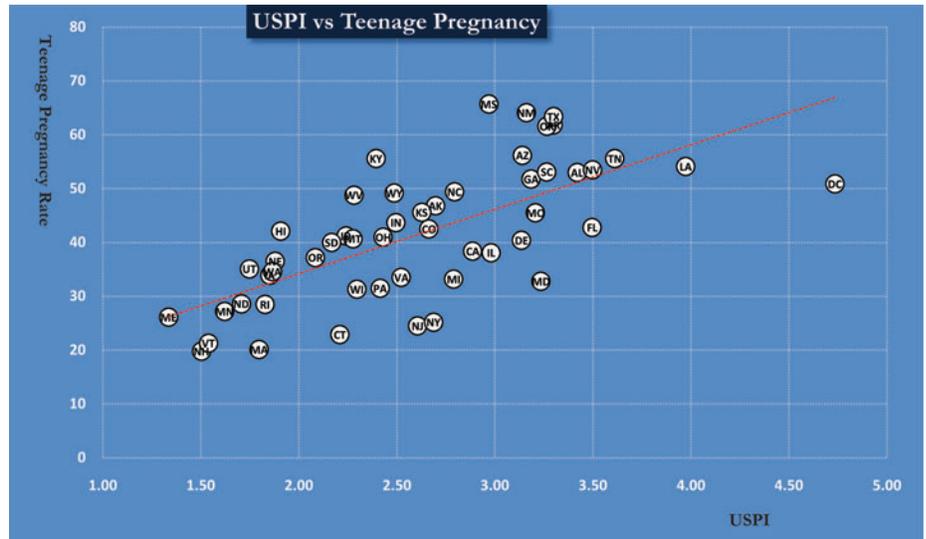
Chart 7 – Peaceful states tend to have a greater proportion of the population covered by health insurance

The health insurance factor looks at the average percentage of state residents between 2008 and 2009 who had no health insurance policy. The figures range from a low 4.4% in Massachusetts to a high of 26.1% in Texas. The correlation is significant (r=.61) and is only slightly less significant than the factors mentioned above. After Texas, New Mexico and Florida have the highest percentage of individuals without health insurance coverage at 21.7% and 22.4% respectively.
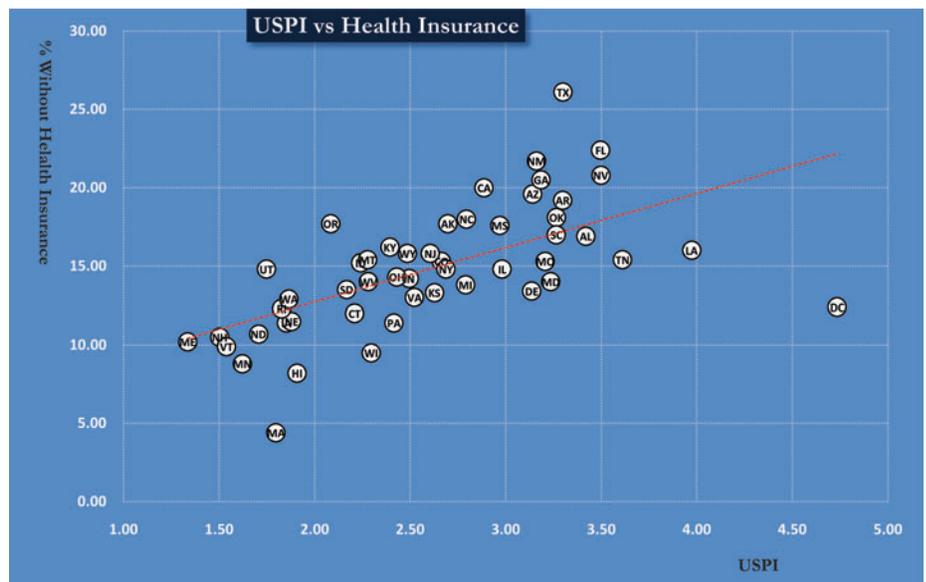
Economic Conditions

A statistically significant relationship was found between the USPI and several economic factors. Perhaps somewhat surprisingly, no relationship was found between median income and the USPI. This may be related to the relatively small range between the U.S. states as compared to differences between nations. The overall strongest economic conditions correlation was between the USPI and Gallup's 'Basic Access' measure.

Chart 8 – Access to basic needs is closely correlated to the level of peace

The Gallup basic access measure[14] is a sub-index of Gallup's "State of the
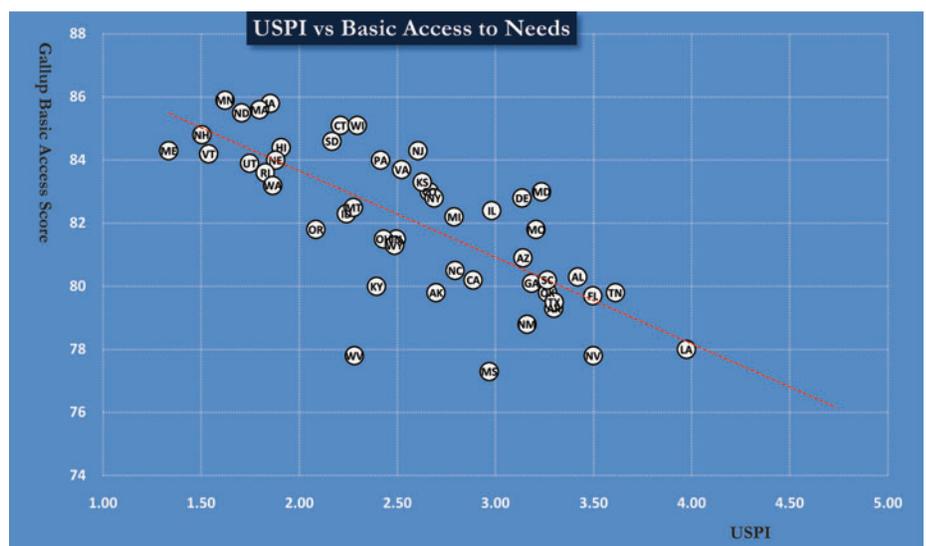
Chart 6

Chart 7

Chart 8

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13   Number of births per 1000 to mothers aged 15-19

14   The Basic Access Sub-Index includes 13 questions gauging access to basic needs optimal for a healthy life: clean water, medicine, a safe place to exercise, and affordable fruits and vegetables; enough money for food, shelter, and healthcare; having health insurance, having a doctor, and having visited a dentist recently; and satisfaction with the community, the community getting better as a place to live, and feeling safe walking alone at night.

States" wellbeing index, and is based on qualitative polling. The 13 questions which compose the basic access measure relate to perceptions of access to and affordability of basic services such as water, medicine etc. The relationship between this measure and the USPI is the strongest correlation of any of the examined economic factors (r=-.75). Only West Virginia stands out, with a relatively peaceful USPI score in spite of a relatively poor basic access score (77.8). Minnesota has the highest Gallup Basic Access score at 85.9 while also being the fourth most peaceful state.

Chart 9

Chart 9 – States with a higher poverty rate tend to have more violence

The poverty rate is the percentage of people living on incomes below a particular dollar threshold set by the U.S. census for any given year.[15] An individual living on their own under the age of 65 would need to live on below $11,161 a year to be considered in the poverty rate count. The correlation suggests a solid relationship exists between poverty and the USPI (r=.56). This relationship has been consistent since 1995 and is explained further in the trends section of the report. Both Alaska and Mississippi are slight outliers, with similar GPI scores, but Alaska has a low rate of poverty at 9.1% while Mississippi has a high poverty rate of 21.8%.

Chart 10 – The distribution of income is linked to peace

The Gini coefficient is a measure of intra-state income inequality at the household level. Although the relationship is still quite strong (r=.57), there has been a marked decline in the strength of the correlation since 1991.
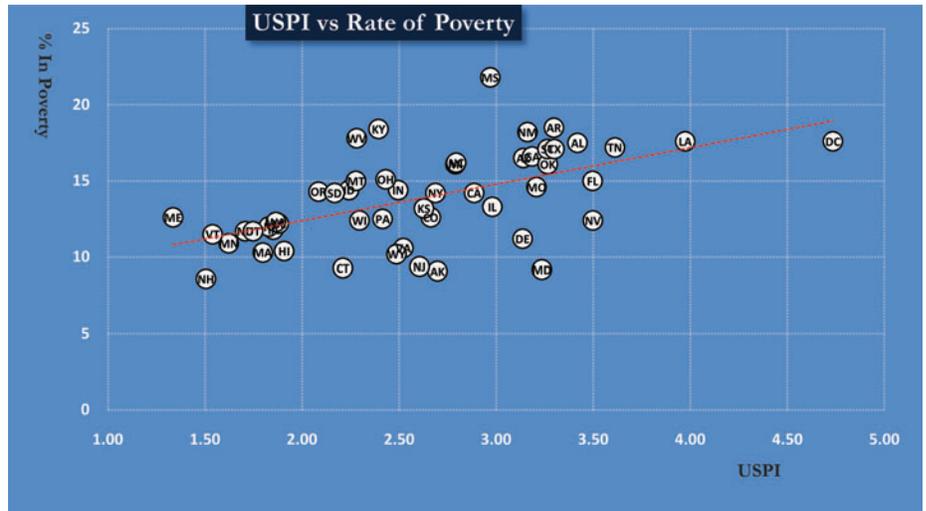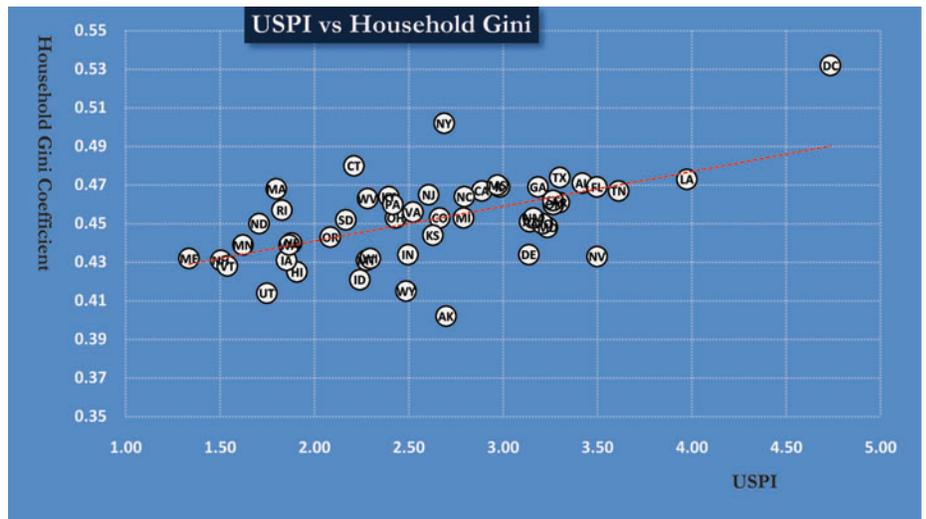
Chart 10

Politics and Demographics

Although some demographic factors such as percentage of the population with internet access and percentage of children in single parent families correlated with the USPI, almost all factors on political attitudes showed no relationship with the Index. The correlation with political affiliation was almost zero, suggesting no tendency for states that traditionally vote Republican or Democrat to be more or less peaceful. While not above the statistically significant threshold, the relationship between voter turnout and peacefulness was almost significant at r=.43.

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15   From the U.S. Census Bureau: "The Census Bureau uses a set of money income thresholds that vary by family size and composition to determine who is in poverty. If a family's total income is less than the family's threshold, then that family and every individual in it is considered in poverty. The official poverty thresholds do not vary geographically, but they are updated for inflation using Consumer Price Index (CPI-U). The official poverty definition uses money income before taxes and does not include capital gains or noncash benefits (such as public housing, Medicaid, and food stamps). More detail available here: http://www.census.gov/hhes/www/poverty/about/overview/measure.html

Chart 11- States with more children living in single parent families tend to be less peaceful

The U.S. Census Bureau provides data on the percentage of children living in single parent families. The relationship between the USPI and this measure is very strong (r=.76) and is tightly clustered. Only Mississippi and Washington D.C. have higher levels of children living in single parent families than would be expected by their respective USPI scores.
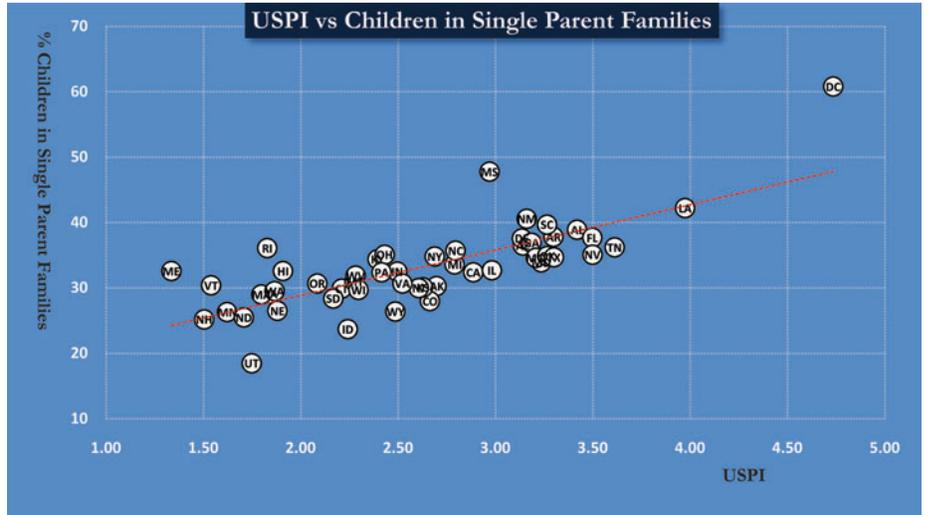
Chart 12 – Prior to 2008 voter turnout was correlated to peace

Voter turnout looks at the percentage of eligible voters who cast a ballot in the 2008 U.S. presidential election. Although the relationship is not above the statistically significant threshold at (r= -.43), this is the first election in the 19 year time series where it did not significantly correlate. This could be explained by a 10% or greater increase in voter turnout from over half of the bottom 20 states when compared to the 2004 election. It will be interesting to see whether this is a fundamental change or peculiar to the 2008 election.
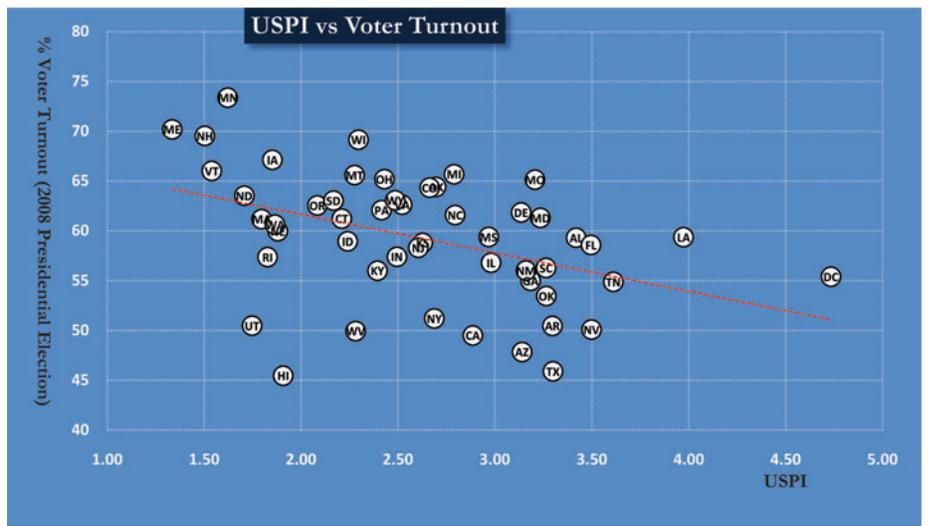
This is the strongest of all the political factors, much stronger than political affiliation or party voting patterns. This suggests that the key political relationship between peace and politics is the level of voter engagement. Over time, the correlation between voter turnout and the USPI has tended to be stronger in years that have mid-term rather than presidential elections, refer to chart 23 graphically illustrating the changes over time. This also shows the large differences between states on voter engagement, with close to a 30% difference between the highest voter engagement in Minnesota and the lowest in Hawaii.

Chart 11

Chart 12

Trends in Peace – 1991 to 2009

Chart 13 illustrates the changes in the peace score within the United States from 1991 to 2009. A decreasing score is positive and denotes improvements in peace.

The U.S. is a relatively more peaceful place today than it was in 1991.

Through analyzing the scores at different periods of the time series, three distinct trends emerge which show the relative changes in peacefulness over the last nineteen years. The percentage change in indicators reveals peace is not static, but rather constantly in flux.

From 1991 to 1995, there was a decrease in peacefulness where the USPI score increased from 2.70 to 2.78. The largest declines in this four year period were seen in the states of Oklahoma, Louisiana, and Nevada where the decline in peacefulness was greater than 10%. Increases in both the homicide rate and violent crime rate accounted for the steep declines.[16] Nevada for instance had the highest rate of growth in violent crime out of any state and the fourth largest growth in homicide over the four years.

The decrease in peace ended in 1995 when the score trended progressively downwards until 2000. This five year period in declining violence is one of the more striking aspects of the USPI's trend analysis as reductions in homicide and violent crime rates were experienced across the nation accompanied by large increases in the incarceration rate. In the five years from 1995 to 2000, 45 states had falling homicide rates, and 43 states had falling violent crime rates, reflecting the general decline in both of these indicators. This is seen in the national homicide rate which fell from 8.22 per 100,000 in 1995 to 5.52 per 100,000 in 2000 and the violent crime average which fell from 676 per 100,000 to 499 per 100,000.
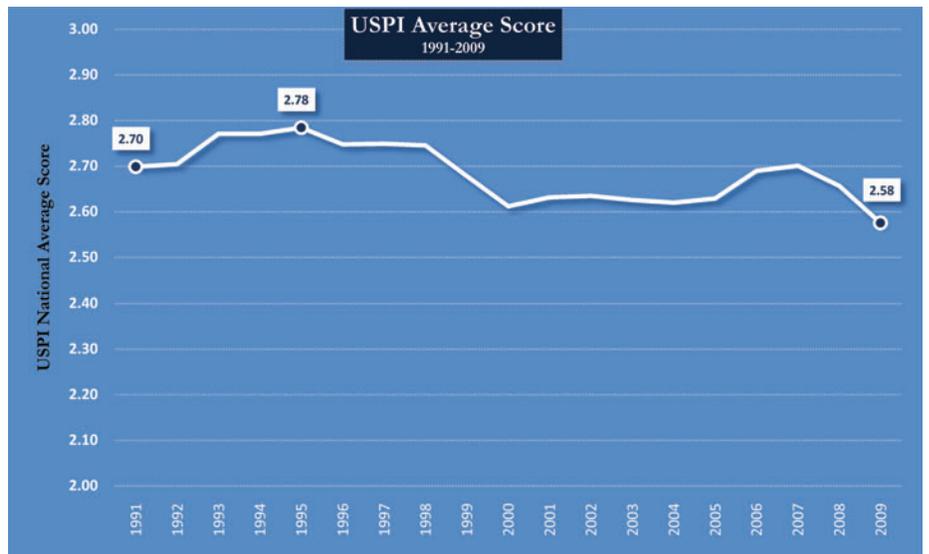

Chart 13 - The overall national trend in peace

While both of these falls were offset by increases in both the incarceration rates and in the number of police employed, the greater weighting given to homicide and violent crime meant USPI scores generally fell. The average level of small arms availability also fell moderately during the period.

From 2000 to 2005, there was a 'peace plateau', with a brief period of increasing violence in 2005 and 2006 followed by increasing peace from 2007 to 2009. The increase in peace in recent years has been driven by sustained falls in violent crime and homicide, with the latter falling 13% to 4.96 homicides per 100,000. This is the lowest level recorded over the period of analysis. This has been accompanied by no increases in police numbers, a slight decrease in incarceration rates and the same levels of availability of small arms. Although it is hard to extrapolate on two years of data it would appear that a new positive trend towards peacefulness may be emerging.

In total, 28 states had increases in their peacefulness between 1991 and 2009, while the other 22 states experienced decreases in peacefulness during this period. Ten states experienced

significant increases in peacefulness of more than 15%.

The states that made the largest percentage improvement on their USPI score from 1991 to 2009 are shown in Table 15 overleaf. Interestingly, these show two of the most populous state in the U.S., California with the highest population and New York which is the third most populous state, have made the largest gains. New York was the most dramatic improver with a 32% improvement in peace.

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16   It should be noted Oklahoma's spike in homicide coincided with the 1995 Oklahoma City Bombing which killed 168 people. This one-off event had the effect of throwing the State's score out for that year. Deaths caused by the September 11 terrorist attacks are not included in the 2000 figures as they were not included by the Bureau of Justice statistics.

Largest improvers

The ten states with the biggest improvements include six of the top ten most populous states in the United States indicating that the country's major populated centers have become relatively more peaceful.

The states with large populations that recorded the highest increases in peace in population order are California, Texas, New York, Illinois, Michigan and Georgia.

New York tops the list improving its peacefulness by 32% over the 19 year period. New York is discussed in more detail on page 29.

California's large increase in peace has been due to the significant fall in the homicide and violent crime rate from 1991 to 2000. The homicide rate halved from over 12 per 100,000 people to just over 6 per 100,000 in 1999 while violent crime fell from over 1100 incidents per 100,000 people to just over 600 per 100,000 people. These gains in peace were achieved by only very moderate increases in the number of police officers while this was offset by a 48% increase in the incarceration rate from 1991 to 2000, after which the incarceration rate has remained the same. Meanwhile, gun availability declined from 54% in 1991 to 40% in 2009, a rate of decline of 14% and ahead of the national average which experienced an 8% decline.

Massachusetts managed to significantly lower its violent crime and homicide rates from 1991 to 2009 while also maintaining its incarceration rate as one of the lowest in the country, helping the state achieve the third largest improvement in peace.

Largest fallers

North Dakota and South Dakota experienced statistically the largest falls in peace whereby both states fell approximately 47%, from 1991 to 2009. These changes were driven by large increases in the incarceration, homicide and police employee rate.

| State	1991	2009	% Change	Rank Change
New York	3.97	2.69	-32.3%	20
California	3.78	2.89	-23.6%	9
Massachusetts	2.30	1.80	-22.0%	12
Michigan	3.48	2.79	-19.8%	8
Illinois	3.65	2.98	-18.4%	5
Maryland	3.95	3.24	-18.2%	7
Georgia	3.85	3.18	-17.2%	5
South Carolina	3.92	3.26	-16.7%	3
New Jersey	3.12	2.61	-16.4%	5
Texas	3.95	3.30	-16.4%	2
North Carolina	3.27	2.79	-14.5%	2
Washington	2.09	1.87	-10.9%	6
Florida	3.92	3.50	-10.8%	-1
Rhode Island	2.04	1.83	-10.5%	7
Alaska	3.01	2.70	-10.3%	0
Ohio	2.70	2.43	-9.9%	3
Alabama	3.79	3.42	-9.9%	-3
Connecticut	2.45	2.21	-9.8%	6
Virginia	2.75	2.52	-8.4%	2
Louisiana	4.28	3.97	-7.1%	0
Arizona	3.38	3.14	-7.1%	0
New Mexico	3.38	3.16	-6.5%	0
Nevada	3.70	3.50	-5.5%	-7
Oregon	2.19	2.08	-4.8%	4
Wyoming	2.59	2.49	-3.9%	0
Missouri	3.29	3.21	-2.4%	-5
Colorado	2.71	2.66	-1.8%	-2
Kentucky	2.41	2.39	-0.8%	0
Mississippi	2.96	2.97	0.2%	-5
Indiana	2.48	2.50	0.7%	-2
Kansas	2.59	2.63	1.3%	-3
Oklahoma	3.19	3.27	2.3%	-10
New Hampshire	1.46	1.50	3.0%	2
Nebraska	1.81	1.88	3.8%	1
Utah	1.67	1.75	4.9%	3
Minnesota	1.54	1.62	5.1%	3
Arkansas	3.14	3.30	5.1%	-12
Maine	1.27	1.34	5.5%	1
Hawaii	1.78	1.91	7.2%	-2
Delaware	2.91	3.14	7.8%	-8
Tennessee	3.30	3.61	9.3%	-13
Pennsylvania	2.19	2.42	10.1%	-3
Vermont	1.34	1.54	14.7%	0
Wisconsin	1.98	2.30	16.2%	-5
Iowa	1.54	1.85	20.1%	-3
Idaho	1.84	2.24	21.9%	-3
West Virginia	1.79	2.28	27.5%	-7
Montana	1.62	2.28	40.3%	-9
South Dakota	1.47	2.17	47.2%	-9
North Dakota	1.16	1.71	47.7%	-4

Table 15 Percentage change in peace score from 1991 to 2009 – highest to lowest (negative percentage is an improvement in peace)

For South Dakota, most significant was a doubling of the jailed population over the period, from under 200 to over 400 per 100,000 people, to a large extent reflecting South Dakota's precipitous fall from quite high in the Index to just below the national average.

Similarly, while North Dakota had one of the lowest violent crime rates in the country in 1991, it progressively increased to be more than three times greater in 2009 than in 1991. However at a rate of 199 per 100,000 people, it is still one of the lowest in the country. North Dakota was the most peaceful state in the country and is now ranked fifth, and as mentioned, the decline can be traced to the large relative increase in violent crime.

Montana, West Virginia, Idaho and Iowa all became between 20% to 40% less peaceful over the 1991 to 2009 period.
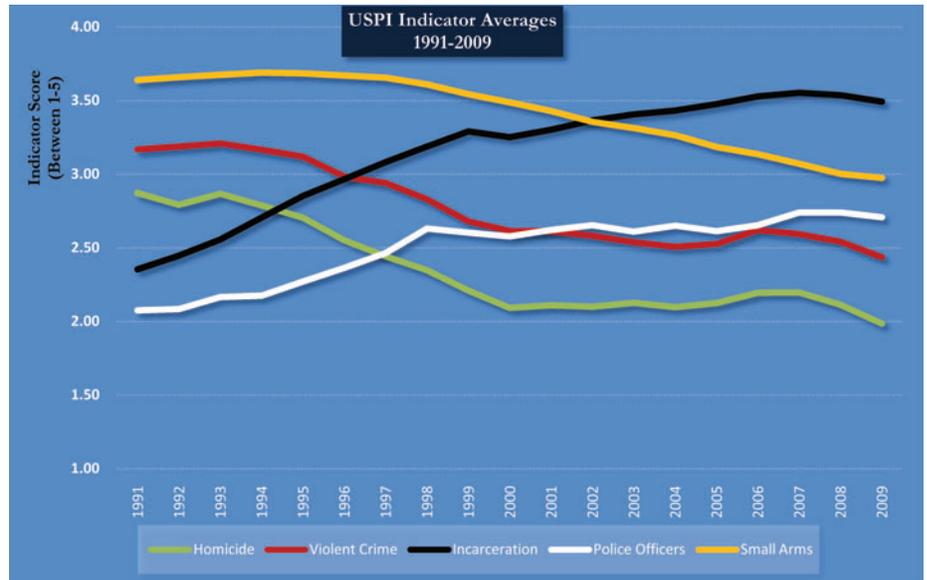
Changes in USPI Indicators, 1991-2009

Chart 14 illustrates the changes in each of the five indicators used to construct the USPI from 1991 to 2009. The improvement in peacefulness can be attributed to substantial falls in the average homicide and violent crime scores, the two indicators with the heaviest weighting in the Index. There was also a fall in the national average level of firearm suicides as a percentage of total suicides, indicating a fall in

Chart 14 - Changes in indicator levels over time

small arms availability over this period. There was an increase in the average number of police employees, while the only large increase was in the incarceration score, which rose sharply until the year 2000, before continuing to increase at a slower rate till 2007. Since then it has experienced a slight decrease. The increase in incarceration rates has had a significant impact on the overall peace scores nearly

offsetting the falls in homicides and violent crimes during this period.

Most and Least Peaceful Ranking Trends

Chart 15 demonstrates the movement over time in the ranks of the most peaceful states. The table contains only those states that had a achieved a top 10 ranking at any time between 1991 and 2009. It shows the highly

Chart 15 - Movement in rankings of most peaceful states over time

RANK	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009
Maine	2	2	2	2	2	2	2	2	2	1	1	1	1	1	1	1	1	1	1
New Hampshire	4	3	3	4	3	4	4	4	3	3	3	3	2	2	2	2	2	2	2
Vermont	3	4	4	3	4	3	3	3	4	4	4	4	4	4	4	4	3	3	3
Minnesota	7	7	5	6	6	6	5	5	5	5	5	5	5	5	5	6	5	5	4
North Dakota	1	1	1	1	1	1	1	1	1	2	2	2	3	3	3	3	4	4	5
Utah	9	8	9	8	10	11	9	11	9	11	13	9	13	8	8	7	9	6	6
Massachusetts	19	20	20	19	21	18	17	17	14	10	15	15	8	10	12	13	11	11	7
Rhode Island	15	13	15	14	13	10	10	10	8	13	10	10	6	6	6	5	6	7	8
Iowa	6	6	6	7	8	7	7	8	6	7	7	7	7	7	7	8	7	10	9
Washington	16	18	17	18	17	17	16	14	10	14	12	13	12	11	13	10	8	8	10
Nebraska	12	12	12	12	12	13	14	16	17	15	11	14	14	12	9	12	12	12	11
Hawaii	10	10	11	11	11	9	12	7	12	9	9	8	11	9	10	9	10	9	12
Oregon	17	16	16	16	15	15	11	13	13	12	14	12	9	13	11	11	13	13	13
South Dakota	5	5	7	5	5	5	6	6	7	6	8	11	10	15	16	16	16	19	14
Montana	8	9	8	9	9	12	13	12	16	17	21	20	22	21	17	23	17	15	17
West Virginia	11	11	10	10	7	8	8	9	11	8	6	6	15	14	14	14	14	14	18

clustered nature of historical USPI rankings, and the range of movement at the top of the index.

Between 1991 and 2009, only two states have held the number one ranking. North Dakota was the most peaceful state from 1991 to 1999, while Maine has been the most peaceful state ever since. In total, 16 states have featured in the top ten at least once between 1991 and 2009. Maine, New Hampshire, Vermont, Minnesota, North Dakota, and

Iowa have never been ranked out of the top ten.

Chart 16 demonstrates the movement over time in the ranks of the least peaceful states. The table contains only those states that have been in the bottom 10 of the USPI at sometime between 1991 and 2009.

The ten least peaceful states have not been as tightly clustered over time as the most peaceful states. In total, 18

states have featured in the ten least peaceful states at least once. Only Louisiana, Florida, South Carolina, Texas, and Maryland have never been ranked outside the ten least peaceful states. Louisiana has been at the bottom of the table every year since 1991.

Chart 16 – Movement in rankings of least peaceful states over time

HISTORICAL RANK	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009
New York	49	49	48	43	42	39	36	37	37	37	34	32	28	31	29	30	29	29	29
California	42	43	42	41	43	41	38	35	35	35	35	37	36	33	35	35	33	34	33
Delaware	28	28	31	27	28	28	28	29	36	39	36	34	40	40	40	42	40	44	36
Mississippi	29	30	30	35	34	35	41	43	33	38	39	42	39	38	34	37	32	35	34
New Mexico	38	36	32	34	33	36	31	45	40	33	28	36	29	37	32	29	36	33	38
Arizona	37	39	39	39	40	40	42	41	45	41	41	43	42	43	43	44	43	42	37
Maryland	48	48	49	46	48	48	46	46	46	47	47	48	47	46	47	45	44	43	41
Missouri	35	35	34	36	30	32	32	33	30	32	38	38	35	41	41	39	39	39	40
Georgia	44	45	44	42	41	44	40	44	42	45	42	39	43	42	38	40	41	40	39
Oklahoma	33	33	35	32	47	37	35	36	38	36	37	35	37	36	39	36	38	38	43
Texas	47	46	43	48	46	45	44	42	41	43	43	44	44	44	44	41	42	41	45
South Carolina	45	42	45	45	45	47	47	47	49	49	49	47	49	49	49	48	49	47	42
Arkansas	32	32	28	33	32	30	33	31	28	30	30	29	34	34	37	38	37	37	44
Florida	46	47	47	47	44	46	48	49	47	48	45	45	46	48	45	47	48	49	47
Nevada	41	41	46	49	49	49	49	48	48	40	46	46	45	45	46	49	47	45	48
Alabama	43	44	41	40	38	42	45	38	44	44	44	40	41	39	42	43	45	46	46
Tennessee	36	34	33	31	37	38	37	40	43	46	48	49	48	47	48	46	46	48	49
Louisiana	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50

Case Study: New York and South Dakota

As shown in chart 17a, over the period 1991-2009 the state with the largest increase in peace was New York which improved its peacefulness by 32% from 3.97 in 1991 to 2.69 in 2009, while the state with the biggest fall in peacefulness was South Dakota where peace decreased by 47% or from 1.47 in 1991 to 2.17 in 2009.

Charts 17a and 17b –New York has made the most gains in peace while South Dakota has made the largest fall in peace

Charts 18a and 18b explore the rise and fall of these two states in more detail, showing how they shifted in relative rank and absolute score during the period.

Charts 18a and 18b – New York and South Dakota's peacefulness went in opposite directions from 1991 to 2009
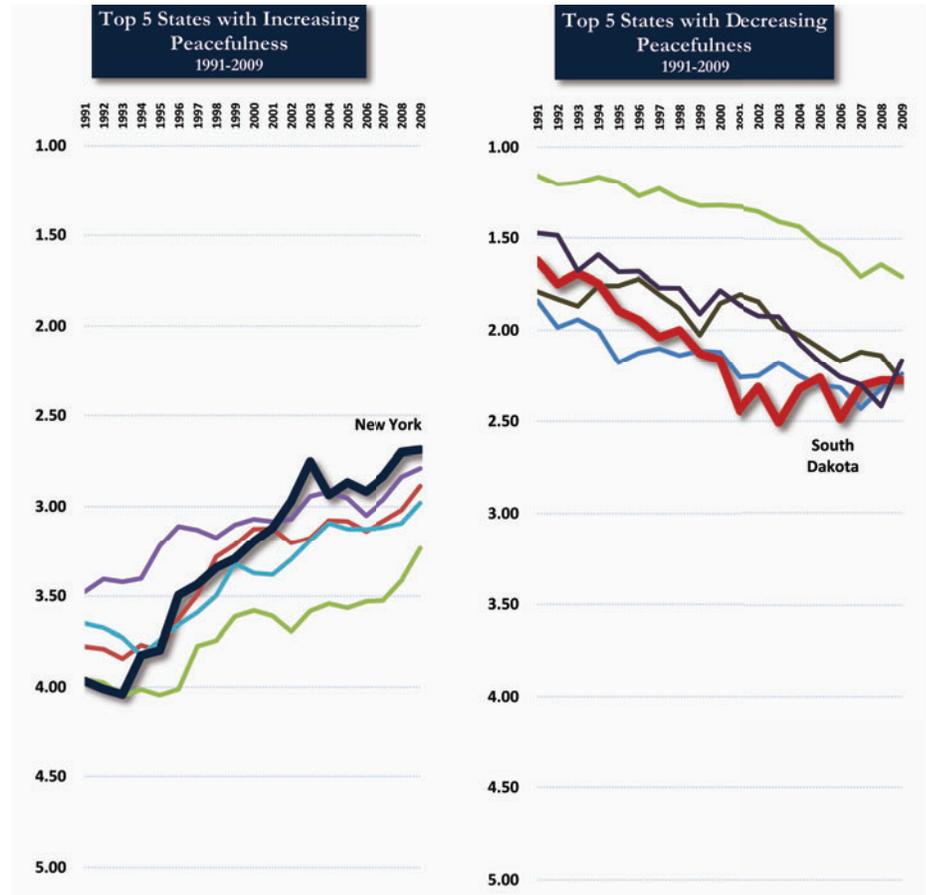
Chart 17a

Chart 17b
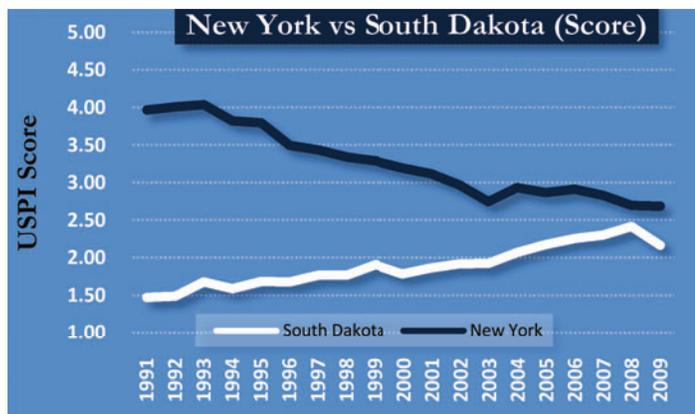
Chart 18a
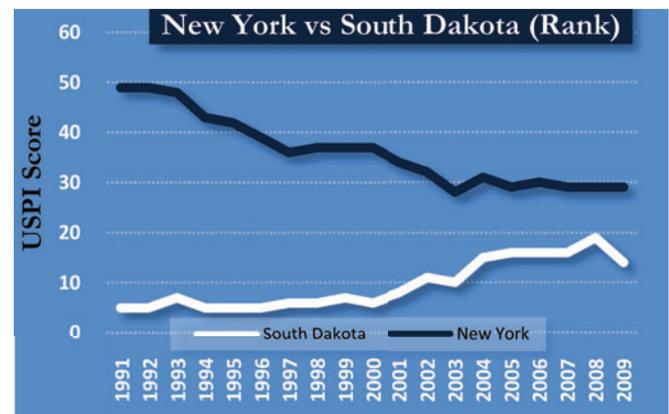
Chart 18b

New York

As shown in chart 19 overleaf, the increase in peacefulness in New York was the result of a drop in all five indicators, most notably in violent crime and homicide.[17] Whilst the incarceration rate initially rose, New York was one of the first states to decrease the percentage of its population in jail from 400 per 100,000 people in 1999, to 300 per 100,000 people in 2009. It is interesting to note both the homicide and violent crime rates also decreased during this period, with the homicide rate falling over 400% from a peak of 13.34 per 100,000 in 1993, to 3.98 per 100,000 in 2009, while violent crime fell from 583 per 100,000 persons in 1999 to 394 per 100,000 persons in 2009.

The cause of the decrease in the violent crime and homicide rate has been the source of much speculation in the social sciences and popular culture, focusing in particular on demographic trends[18], drug trends[19], and more efficient policing methods.[20]

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17   Note - the FBI did not count September 11 deaths as homicides.
18   This refers to the controversial 'impact of legalized abortion on crime' argument by Donohue and Levitt, suggesting a causal link between legalized abortion and the drop in crime during the 1990s.
19   Some argue the decrease in violent crime and homicide after the mid-1990s is related to decreasing availability of crack cocaine in major American cities.
20   Policing methods in New York City from the mid-90s have also been identified as an example of the type of policy interventions that have resulted in reductions in crime.

Chart 19 – Indicator Trends, New York (1991-2009)

Regardless of the causes of the increase in peacefulness, the success of New York in reducing the score of all indicators suggests that a sustained, uniform increase in peacefulness is possible. Reducing the homicide and violent crime rate is not necessarily dependent on vastly increasing police numbers or on ever-increasing incarceration rates.

Whilst historical data does not exist for all secondary factors for New York, it is available for the poverty rate and the household income Gini coefficient. Chart 20a and Chart 20b below shows how New York's increase in peacefulness has been closely tracked by a reduction in the poverty rate. However the Gini coefficient shows a different trend. A potential explanation for this is the dramatic increase in compensation paid to some workers in the financial sector, coupled with a fall in the poverty rate.

Charts 20a and 20b – New York's increase in peacefulness has been closely tracked by a reduction in the poverty rate while income inequality has increased - Poverty Rate vs. USPI Score, New York (1991-2009)

South Dakota

Whilst New York's increase in peacefulness has been well documented, South Dakota's decline in peace has not
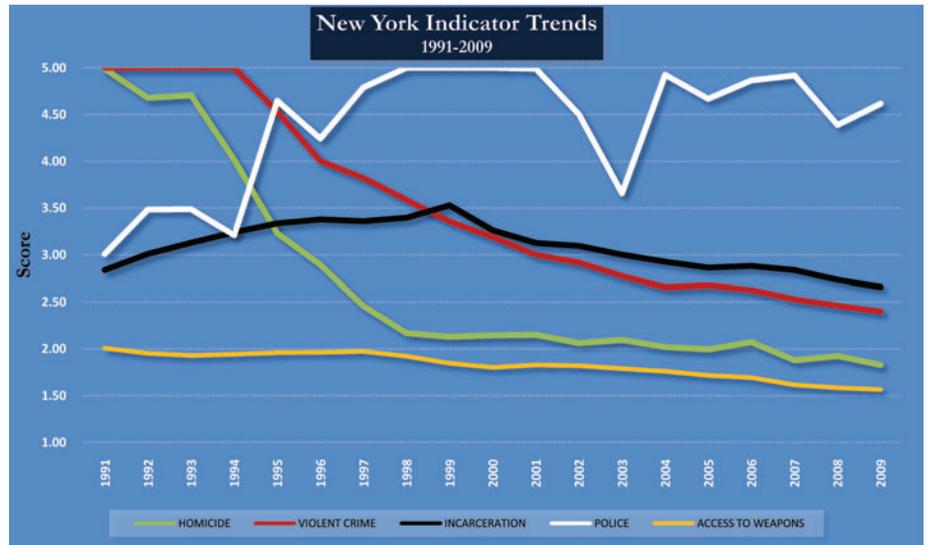
Chart 19

drawn a comparable level of attention.

Since 1991, South Dakota's peace score has dropped by 47%. Its near neighbor North Dakota also experienced a decline of the same magnitude, although it had a smaller increase in score. Their Midwestern counterpart Montana also experienced a significant decrease in peacefulness. This means that all three of these Midwestern states experienced the highest falls in peacefulness. A comprehensive study of the similarities of these three states is beyond the scope of this project so the commentary is limited to just South Dakota.

Although South Dakota still scores fairly well on the U.S. Peace Index it has dropped in rank from 5th place in 1991 to 14th place in 2009. This fall has

been brought about by an increased homicide rate of 1.71 per 100,000 of population in 1991 to 2.58 in 2009. During the same period violent crime has remained constant while the incarceration rate has increased from 191 persons per 100,000 people to 422.

What is striking is that the incarceration rate has increased well above the national average and the number of police officers has also increased by over 40% without a fall in homicides or violent crimes. However it is important to remember that both the violent crime rate and the homicide rate dropped sharply between 2008 and 2009 and that South Dakota is still a relatively peaceful state.
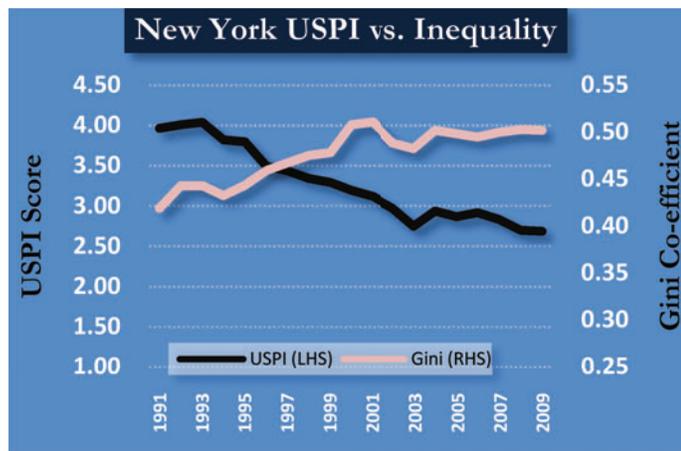
Chart 20a
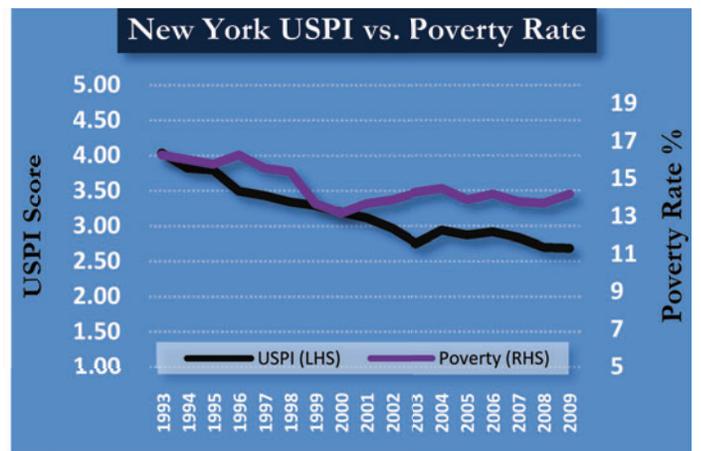
Chart 20b

Chart 21 – The steady increase in incarceration and the number of police has driven the decrease in peace

Charts 22a and 22b – USPI has increased very close in line with the rate of poverty and income inequality-poverty rate and Gini coefficient vs. USPI score, South Dakota (1991-2009)

Charts 22a and 22b below shows the change in South Dakota's USPI score over time, showing a consistent upward trend between USPI, the state's Gini coefficient and the poverty rate.
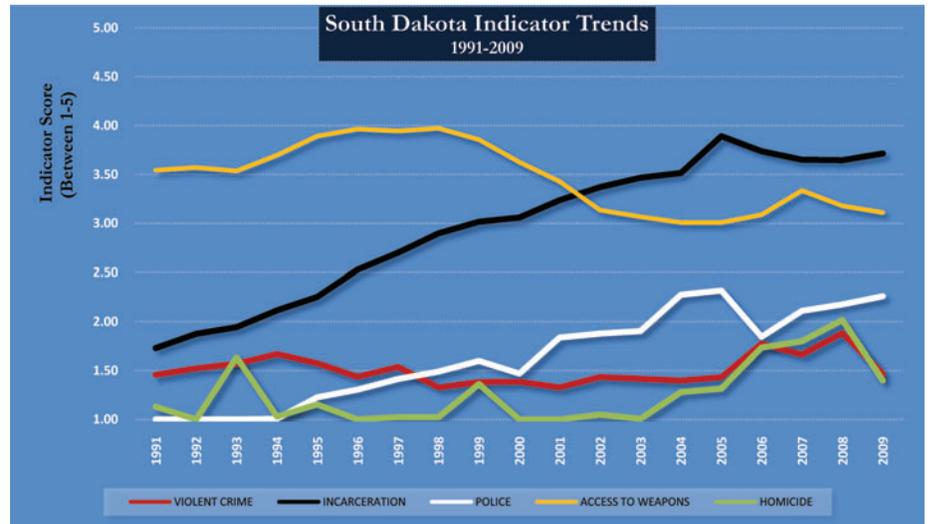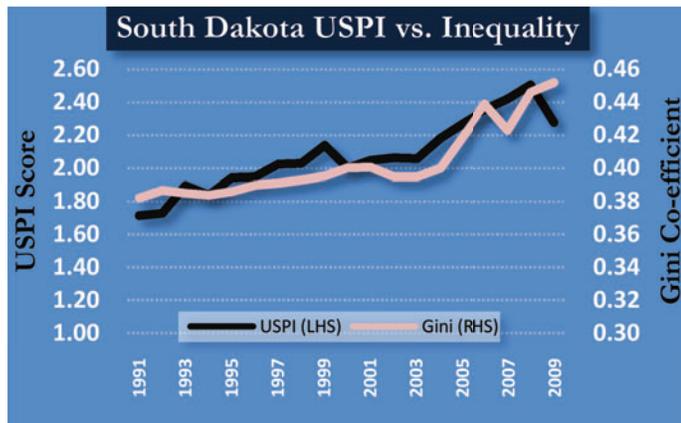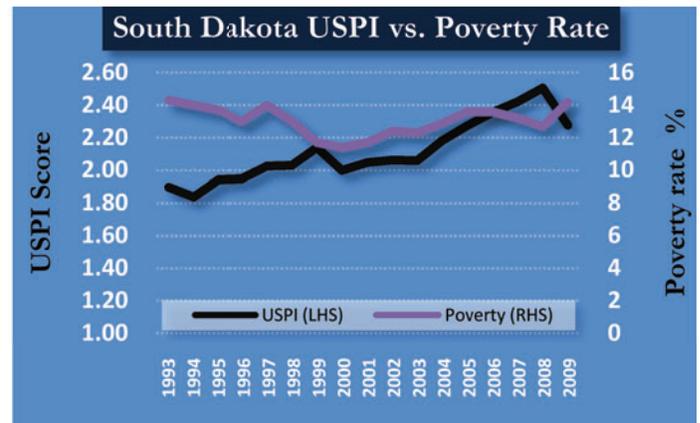

Chart 21

Chart 22a

Chart 22b

Historical Correlation Trends

Although historical data is not available for all the factors that the USPI has been correlated against, it is available for some of the factors, as shown in chart 23 below.[21]

Chart 23 – Correlations against the USPI over time

Although data is only available on an intermittent basis for teenage pregnancy and infant mortality, both of these factors correlate strongly in all the years that data is available. It is expected that data for these two indicators will be released periodically in the future.[22]
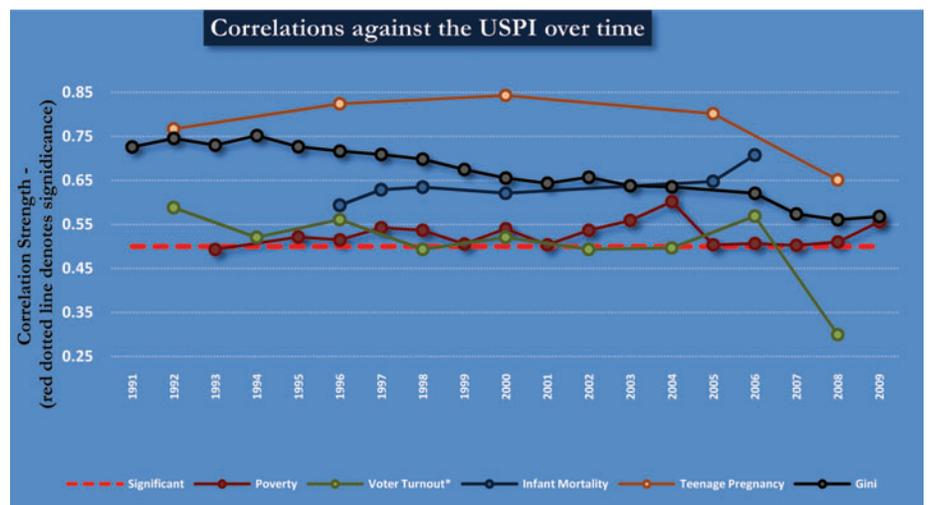
Chart 23

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21 Note: voter turnout would normally be negatively correlated with the USPI, but has been inverted for the purposes of this graph.
22 Data for teenage pregnancy is sourced from the Centers for Disease Control and Prevention (CDC), National Vital Statistics Reports. There is roughly a two year lag on data release. Data for infant mortality is also sourced from the CDC National Vital Statistics Reports.

Data is also available for voter turnout for every second year from 1992, which corresponds with U.S. federal and midterm elections. Voter turnout correlated fairly significantly with the USPI until 2008, which suggests that voters in more peaceful states feel more empowered. However, in the 2008 presidential elections, states with low levels of peacefulness had greatly increased voter turnout which is why voter turnout did not correlate as strongly in 2008. This is especially true for states which had significant increases in voter turnout, such as North Carolina (8.3% increase), Virginia (6.9% increase), Mississippi (5.7% increase), South Carolina (5.5% increase) and Georgia (5.3% increase).

The poverty rate has been the most consistent correlating factor over time, with a high of r=.64 in 2004 and a low of r=.54 in 2008. However, the correlation between the Gini coefficient and the USPI has shown a significant fall in strength since 1991.

Social attitudes associated with peace

To examine how people's attitudes and beliefs in different states may be related to their peacefulness, the IEP commissioned the Program on International Policy Attitudes (PIPA) at the University of Maryland to gather multi-national attitude research and correlate it with the U.S. Peace Index. Attitudinal differences between peaceful and less peaceful states can help clarify the cultural attitudes that may underpin peace.

It should be pointed out that while there has been a vast quantity of attitudinal research conducted in the United States, most surveys poll only about 1,000 respondents. This makes correlating the USPI on a state-by-state basis unfeasible as too few respondents are polled per state to achieve reliable statistical significance. To address this issue, states were organized according to their USPI rank into groups of approximately equal size with large enough samples to make statistically meaningful comparisons.

Additionally, it should be noted that there is a high degree of internal homogeneity of opinion in the United States. This means differences in public attitudes between states within the U.S. tend to be much slighter than the differences between nations.

Sources of national public opinion research

PIPA focused on research conducted in the last two years, though some questions tested were conducted earlier. The following organizations that produce research surveys were the sources of the datasets used as the basis of this analysis:

- WorldPublicOpinion.org (WPO)
- Chicago Council on Global Affairs (CCGA)
- CBS News (CBS)
- ABC News/Washington Post (ABC/WP)

WPO and CCGA provide their datasets via website, and there are search functions to assist in locating the wording of specific items if desired. The polling conducted by ABC/WP and CBS were obtained from the University of Connecticut's online database, iPoll, which is a proprietary database; the findings are not fully open source material.

Results of attitudinal research

Table 17 – The attitudes statistically significant with peace vs. those that are not

Attitudes statistically significant with peacefulness	*Attitudes NOT statistically significant with peacefulness*
Attitudes about when torture should be used	Attitudes about international institutions and the U.S.'s role in international affairs
Attitudes about a Manichean Worldview, i.e. the world divided into good and evil forces	Support for the death penalty
Attitudes about whether wealth distribution in society is equal	Attitudes about a variety of political and social rights, including freedom of religion, association, the press and the right to protest
	Attitudes about government's role in healthcare and education
	Attitudes about the economic status of the next generation

The results of the analysis are summarized in table 17 above, showing the attitudes which were statistically significant[23] with the relative peacefulness of a state. While the research broadly showed the homogeneity of opinion in the U.S., it did show some interesting results about different views on the appropriate use of torture, whether there is a Manichean worldview and whether wealth is distributed equally in society. Each statistically significant attitude is discussed overleaf.

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23 "Weak" or "no correlation" was used to describe correlations with values less than 0.1 and "meaningful" correlations are those between 0.1 and 0.25. Differences are described as "significant" if they are statistically significant at the generally accepted 0.05 level of significance (and in a few cases significance was found at the more stringent 0.01 level). Differences described as "not significant" do not meet the 0.05 level of significance. Note these thresholds are different to that in the rest of the USPI.

Attitudinal themes related to a state's peacefulness

In reviewing the survey research data available for the U.S. in the open source literature, a variety of survey questions items were found to be related to state rankings on the U.S. Peace Index. Each of those reported below had statistically significant correlations between a state's attitude score and its rank on the USPI.

Torture

Questions about torture produced some of the most significant results. In addition to more general principles, concrete questions about torture methods were tested. To phrase the findings in terms of peacefulness, people in states rated more peaceful on the USPI tended to be less in favor of:

• bending the rules/international laws against the use of torture

• using loud noise for long periods or electric shocks or stress positions

Manichean Worldview: World Divided into Good and Evil Forces

There were definite effects on a rather abstract question about respondents' general worldview, as follows:

Q: Do you believe that the world is clearly divided into forces that are good and forces that are evil, or do you believe that the world is more complex than that?

The most peaceful states were significantly less likely to agree with the Manichean view than the least peaceful states.

Distribution of Wealth

People in the most peaceful areas were somewhat more likely to perceive the distribution of wealth in the country as becoming less fair. This relationship requires significantly more research to better understand the role, if any, unrealized expectations potentially have with the creation of violence.

Violence is costly and the cost can be measured in many ways, either physically, emotionally or financially. This report has limited itself to only estimating the economic impact of violence so that a better understanding of the financial benefits of peace can be reached.

The economic impact of peace is substantial but is seldom analized with a holistic approach. The aim of this section is to estimate the costs associated with four of the five indicators used in constructing the U.S. Peace Index and to also estimate the additional productivity that would flow from reductions in violence. The costs which have been included in the analysis are associated with homicide, violent crime, incarceration, policing and judicial expenses.

To further clarify what the likely impact of improvements in peace would mean for each state, the cost of violence per capita income has also been calculated and is highlighted in table 21.

To aid in the analysis of the economic benefits the economic impact has been broken down in two ways. Firstly, savings that are directly associated with reductions in violence, and secondly the additional economic activity that would be generated from these reductions in violence. Cost estimates are mainly based on data from the Centers for Disease Control and Prevention (CDC) and the U.S. Bureau of Justice Statistics (BJS) and were used to calculate the cost of homicide, violent crime, incarceration, the judiciary and policing. These costs are not exhaustive and there are additional costs that have not been accounted for in this study due to empirical limitations.

The economic benefits that would flow from greater peace can also be divided into two categories titled the *static peace dividend* and the *dynamic peace dividend.*

The static peace dividend is defined as the transfer of economic activity from violence-containment industries to other forms of economic activity. These are savings that accrue from reductions in violent crime, incarceration, homicide and policing and represent expenditure which could be transferred into more productive investments. Examples of possible changes in spending that could be initiated by state governments are: redirecting expenditure from prison guards to teachers and reducing taxes which would then flow through to individuals. Static savings mean that there are shifts in expenditure but the overall economic pie remains constant.

The dynamic peace dividend is defined as the additional economic output that would be created from the liberation of human capital from reductions in violence as well as the additional productive capacity generated by the transfer of resources associated with the static dividend. Simply put, the dynamic peace dividend is the additional economic value generated by releasing the productivity trapped by violent activities.

Some illustrations of activities that generate a dynamic peace dividend are listed below:

• If there were fewer homicides then there would be additional economic activity generated from the lifetime earning capacity of the victims.

• State governments could redirect funds from violence containment to education and business stimulation in areas of national competitive advantage, such as computer software, solar energy, or bio-technology.

• State government could invest in transport infrastructure to reduce the costs and time involved in transporting goods and people. This would then result in additional economic activity.

• Governments could reduce taxes to drive economic stimulus from the private sector.

- Investment could be made in basic healthcare which reduces child mortality rates and improves chronic health issues, thereby improving the productive capacity of individuals.

- When a skilled person is placed in prison, there is decay in their skills during the term of their incarceration, affecting their productivity. Similarly, if an employed person is placed in prison then their earning capacity is lost to society.

Additional economic activity also has a flow on effect through the economy and has been calculated using a one-for-one multiplier. This would mean that for every additional dollar added to the economy, another dollar would be counted. To illustrate the point, if a person is not placed in prison then the model would count that person's salary as additional economic activity, however when they spend that salary, there is a flow on effect through the economy where this also gets counted in other economic activity. The one-for-one multiplier can be considered to be conservative.

There are also other factors that make the model reasonably conservative as there are many costs that have not been included, such as: higher insurance premiums, surveillance cameras, security doors and grills, lost management time, the private legal costs associated with police and judicial proceedings for violent crime and homicides and the costs of emotional trauma.

All dollar values used from previous research have been adjusted to 2010 dollars.

The Static and Dynamic Peace Dividends

Table 18 shows the costs that have been measured in the USPI. Costs for each category are based on existing literature. The data sources for each of these items are detailed in the corresponding section.

The static peace dividend consists

Table 18 – The Static and Dynamic peace dividends calculated in the U.S. Peace Index

Static Peace Dividend – Costs to society and government	Dynamic Peace Dividend – Costs that affect economic activity
Medical cost of homicide to society	Productivity loss from assault
Medical costs of violent crime to society	Productivity loss from rape[24]
Incarceration cost per prisoner[25]	Productivity loss of lost work days from homicide
Policing services including judiciary costs[26]	Individuals in the workforce rather than jail[27]

of costs that mainly accrue to state and federal government budgets and represent a subset of the actual costs. This can be seen as the taxpayers' burden of violence. Alleviation of these costs will theoretically lower the taxation burden and allow state governments to either issue tax cuts, increase spending on necessary public goods, or simply pay down state government debt.

To help illustrate the savings that can be generated through reductions in violence Canada has been used as a benchmark to compare to the U.S. The aim is to demonstrate the savings and additional economic activity that would ensue if the U.S. had the same level of peacefulness as its neighbor Canada. Canada was chosen simply because of its close geographic proximity as well as its similar level of economic development. Comparisons have been made to the indicators used in the U.S. Peace Index.

To realize the peace dividend there will be a need for governments to invest in policies that actively reduce or minimize violence. Estimating the costs of these programs is beyond the scope of this study, but lessening the rate of incarceration of low risk non-violent offenders who are employed, would have immediate benefits to state government budgets as well the economy. For each person imprisoned the value of their wage is lost to the economy, additionally tax receipts are lost to the government while the state also has to fund their imprisonment.

It is important to note that while

many states lag behind the international comparators, the best performing states in the U.S. actually fare much better than Canada and many European countries. This demonstrates that these improvements are realistic and achievable.

Homicide

There are wide variances in the homicide rate across the U.S. with the most violent state, Louisiana, having a homicide rate fifteen times greater than the state with the lowest homicide rate, New Hampshire. Nationally, the homicide rate in the U.S. has been declining since the early nineties, and has now dropped to a level not seen since the late 1960s, with the homicide rate for 2009 at 4.96 per 100,000 people.

The decline in homicides plateaued for most of the 2000s before resuming the decline in 2008. Although the average rate since 2000 has only decreased slightly, there have been different trends between the states, for example;

- Minnesota - homicides decreased from 3.06 per 100,000 in 2000 to 1.41 in 2009

- Rhode Island - homicides decreased from 4.28 per 100,000 in 2000 to 2.94 in 2009

- Ohio - homicides increased from 3.68 per 100,000 in 2000 to 4.5 in 2009

- South Dakota - homicides increased from 0.93 per 100,000 in 2000 to 2.58 in 2009

New Hampshire is the state with the lowest homicide rate at 0.75 having decreased from 1.77 in 2000.

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24 Cost from lost productivity from lost work days and emotional distress.

25 Incarceration costs include the cost of corrections as identified by the BJS.

26 Note: The policing services section includes the judicial costs associated with criminal cases. Calculation method is detailed in the police costing section. For the full definition of what is included in policing services refer to the Bureau of Justice Statistics website at: http://bjs.ojp.usdoj.gov/dataonline/Search/EandE/definitions.cfm.

27 Based on calculation of 70% of prisoners attaining employment, each providing $75,000 per annum to the economy.

It is interesting to note that the five states with the highest levels of homicide have a rate approximately five times as high as the five states with the lowest homicide rates. The homicide rates in the five lowest states are lower than those of Canada.

Comparison with other countries

While the U.S. has homicide rates lower than other countries with a similar Global Peace Index rank, they are still much higher than in other highly developed countries. As chart 26 demonstrates, the U.S. homicide rate is more than three times higher than the United Kingdom's. What is striking about the UK comparison is that the UK has a higher level of violent crime than the U.S.

Chart 26 – Homicide rate per 100,000 population (2009)

Costs

Although the full cost of homicide is almost impossible to capture due to empirical limitations, some clear areas of economic loss resulting from homicide can be easily identified. These include the initial medical costs and lost productivity resulting from a homicide. A study by the Centers for Disease Control and Prevention (CDC)[28] has been used as the basis for the cost estimates. The CDC report does not incorporate police, coroner and judicial costs. Judicial costs are covered in the costs of policing services detailed later in the report.

According to the CDC, the total medical cost of homicide in the year 2000 was approximately $83 million, or $5,000 per victim. The associated costs resulting from lost lifetime productivity are much higher, at an estimated $22 billion in total, an average of $1.3 million per victim.[29] These costs can be further decomposed into those savings that accrue to the general economy and those which would generate more economic activity.
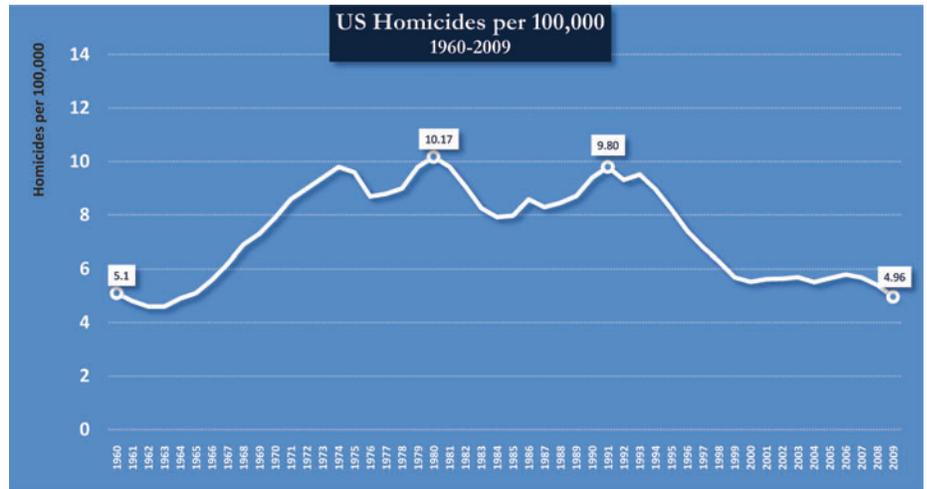
Chart 24 – U.S. murder and non-negligent manslaughter rate, per 100,000 population (1960-2009)
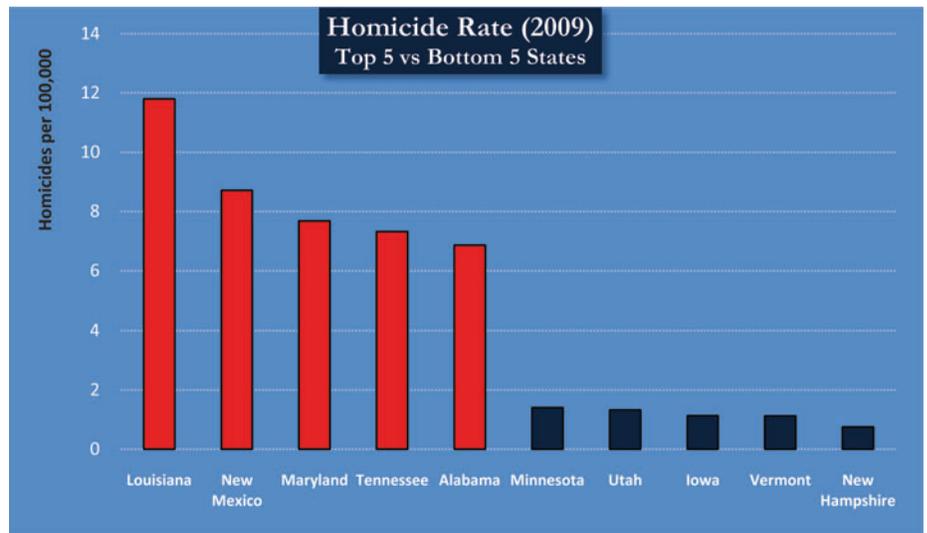
Chart 25 – U.S. homicide rate per 100,000 population, 5 highest and 5 lowest states (2009)
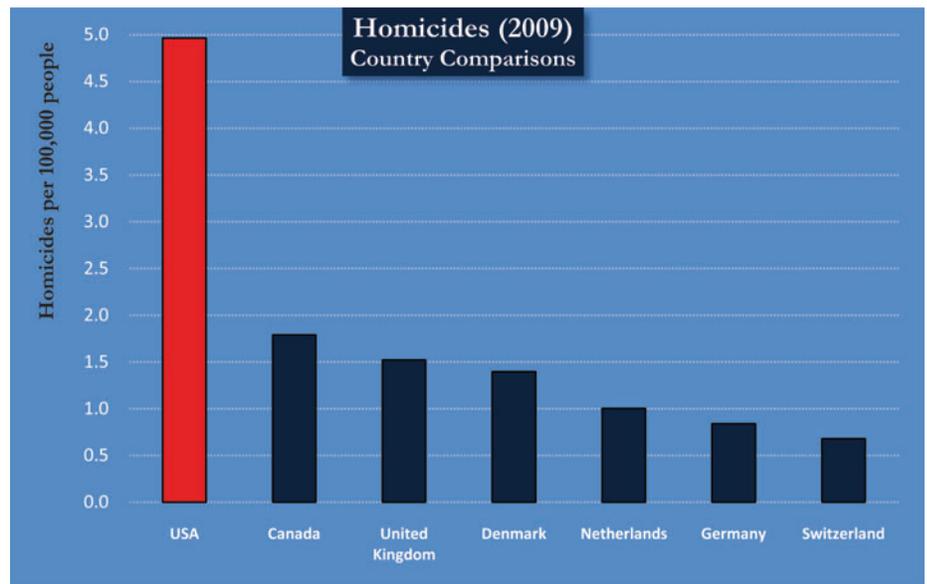
Chart 26

28   Corso, P., Mercy, T., Simon P., Finkelstein E., and Miller, T. (2007). "Medical Costs and Productivity Losses Due to Interpersonal and Self-Directed Violence in the United States." American Journal of Preventive Medicine 32(6). Authored by CDC economists.

Costs to government and the community

The medical costs of homicide consist of ambulance transport, coroner/medical examiner costs, emergency department and immediate in-patient hospitalization.[30] This is the only cost that has been assigned to homicides due to the difficulty in finding accurate estimates of the costs that are associated with the crime. Therefore the costs associated with homicide, particularly the medical estimates, are considered conservative.

The medical costs of homicide accrue to both state and federal governments as well as the general community. The CDC estimates the average medical cost of a homicide to be $6,212 in 2010 dollars. The component of this cost that accrues to state and federal government is assumed to be half, at $3,106 per homicide.[31]

With the U.S. recording 15,241 homicides in 2009, the cost to government can be calculated by using the figure of $3,106 a homicide adding to a total of $47,338,546. This figure does not include policing or judicial costs which would include prosecutions on behalf of the state. Policing and judicial costs have been included in the section on policing costs. However the largest cost that is excluded from this approach is the tax receipts that would have been gained from the life-long employment of the victims as well as the lost productivity to the broader economy. If the U.S. had the same number of homicides as Canada then there would have been 9,746 fewer homicides in 2009. This would have resulted in $61,542,000 fewer medical costs.

Cost of productivity loss

The total cost of homicide will be significantly higher than the costs borne by government because of the lost work days that result from homicide. This represents a huge productivity loss to the wider economy and CDC calculates that for each life cut short by homicide, the economy loses $1,652,000.

In order to calculate the potential economic savings that could be made, the U.S. can be benchmarked against other comparable nations. Chart 27 below shows the additional dollars that would be added to U.S. GDP if it had a homicide rate the same as Canada and several European countries. It should be noted that not only are the police, judicial and medical costs not included in this figure, but other economic costs are also not taken into account, such as defensive measures against crime, less productive investments, expenditure on funeral services, or higher life insurance premiums. It is therefore reasonable to suggest actual economic returns from a reduction in the homicide rate would likely be much higher as only the medical costs mentioned earlier and the value of lost life-time work have been included.

Chart 27 - Savings to the economy if the U.S. had the same homicide rate as Canada and several European Countries

If the U.S. managed to reduce its homicide rate to that of Canada, it would potentially add $16 billion to the U.S. economy. This notably, does not include any multiplier effect for additional economic activity, which would effectively double this figure to $32 billion. Even greater economic gains would be made if the homicide rate fell to that of Germany. This would result in over 12,000 less murders and an additional $21 billion added to the economy, $42 billion if including the multiplier.

Incarceration

Data sourced from the U.S. Bureau of Justice Statistics shows incarceration rates[32] in the U.S. have dramatically increased from 1981 to 2007. However this trend seems to have reached a plateau and the incarceration rate has even slightly decreased over the last two years. Chart 28 shows the average national incarceration rate from 1980-2009.
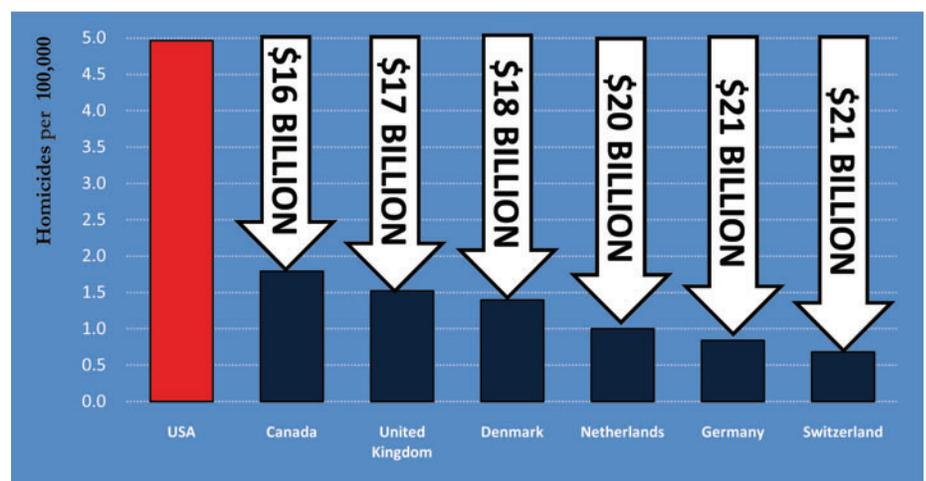
Chart 27

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29 In year 2000 US dollars.

30 Corso et. al. (2009:475)

31 Medicaid is partly funded by the state and federal governments, with the respective amounts varying across states, it is difficult to decompose how much would be shared by state and federal. It is also not possible to decompose what proportion of the cost is carried by the general community versus the government as the CDC data does not provide further breakdowns. For this reason the CDC $6,212 number is halved to $3,106 as half is assumed to be paid for by the general community through health insurance funds.

32 The incarceration rate is expressed as the number of jailed population per 100,000

*Chart 28 –Incarceration Rate per 100,000 population (1980-2009)*

The increase in the incarceration rate is a source of significant debate and interest within the U.S., with a large body of literature focusing on the effect of mandatory minimum sentences, the proliferation of legislation as well as an increased focus on drug offenders after the declaration of the 'War on Drugs' in 1973. Reasons for the increases aside, it is well known that the dramatic increase in the level of incarceration has significant economic costs associated with it and a reduction in the prison population can be a source of significant potential savings for both the state and federal governments providing that released individuals do not create greater costs to the community.

Costs

The U.S. Bureau of Justice Statistics has kept detailed records on the prison population and the associated costs of imprisonment since 1982 up until 2005.[33] The total cost of incarceration has been estimated from 2006 onwards using the number of prisoners from the BJS statistics and using the cost of incarceration from 2005 in 2010 dollars. A close examination of these figures reveals that from 1982 to 2009, the prison population has increased by 269%, while the total cost of imprisonment has increased by approximately the same rate. The total cost per prisoner has not fluctuated much since 1982, and was estimated as being $42,173 in 2005 in 2010 dollars. Of this cost, $34,727 was the result of costs associated with incarceration in correctional facilities, while the remaining $7,446 was the results of costs associated with arrest, conviction, and judicial costs.

Chart 28
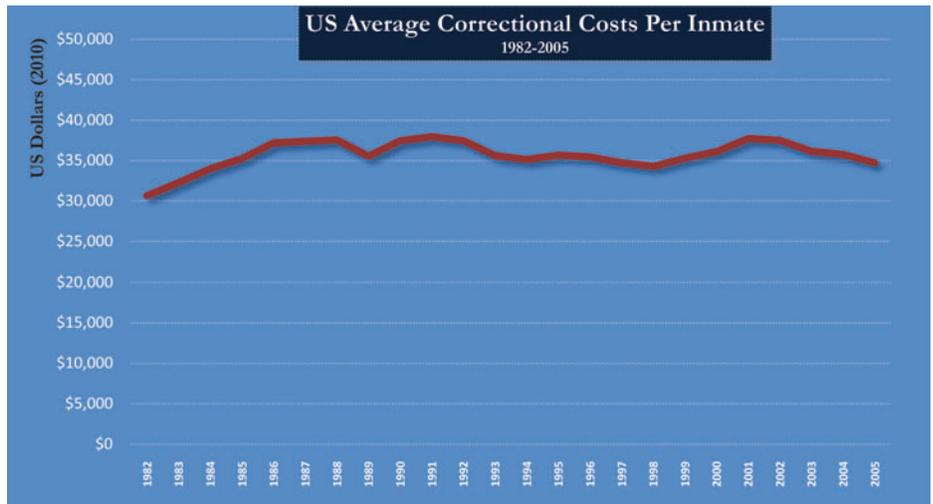
Chart 29

Chart 29 – Real cost per inmate, 1982-2005 (Thousands of dollars, 2010 adjusted)

Since 1982 the prison population has increased dramatically, with the cost of imprisonment per inmate rising from $30,673 in 1982 to $37,997 in 1991 representing an increase of 24%, while the average cost to 2009 has come down marginally, to $34,727 per inmate. The resulting effect of this has been a large increase in state and federal government's expenditure on incarceration. This increasing

expenditure means that larger portions of state budgets are devoted to criminal justice spending.

Chart 30 – Total correctional and judicial system spending, 1982-2005 (Billions of dollars, 2010 adjusted)

Chart 31 below, illustrates the relationship between GDP growth and total criminal justice expenditure growth, with criminal justice expenditure on average constantly increasing since 1981 while concurrently outpacing GDP growth during the period.

Chart 31 – Correctional spending growth vs. GDP growth, 1981-2005

The relationship between GDP growth and Criminal Justice Spending (CJS) has changed over the years with CJS growth vastly outstripping GDP growth up until 1994. This trend somewhat slowed from 1995 to 2004, where the average CJS growth was only slightly higher than GDP.

Comparison with other countries

The incarceration rate in the U.S. is markedly different to that of other developed countries. In 2009, the U.S. incarceration rate was 760 persons per 100,000, compared to 138 in Canada, 151 in the United Kingdom, 89 in Germany, 76 in Switzerland, and 64 in Denmark.

Chart 32 – Inmates per 100,000 population (2009)

Costs to government and the community

The possible savings to U.S. states and the federal government can be calculated by estimating the savings that would result if the U.S. managed to lower its incarceration rate to that of Canada and other selected European nations.

Chart 33 - Savings if the U.S. had the same incarceration rate as Canada and other selected European Nations

If the U.S. could reduce its incarceration rate to the same level as Canada (138 per 100,000) the total
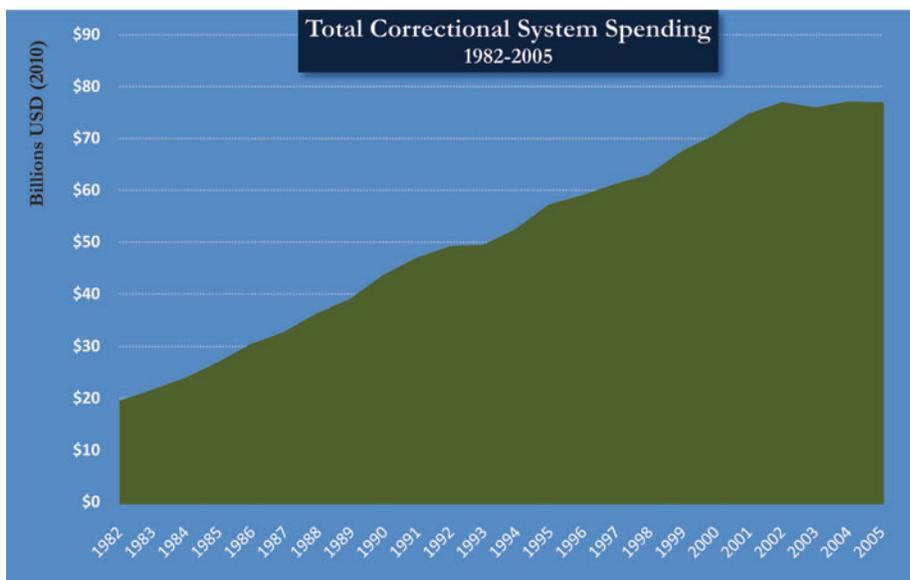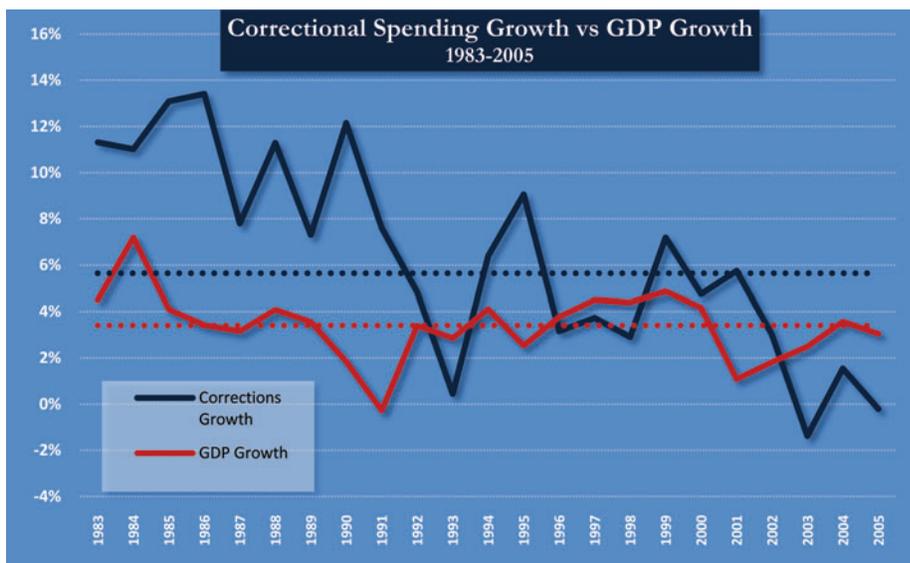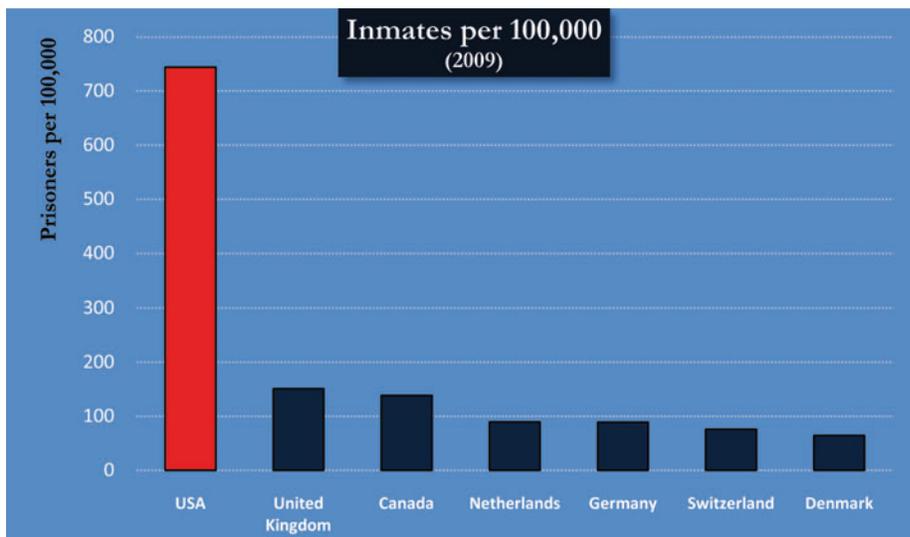

Chart 30

Chart 31

Chart 32

correctional population would fall to 424,590 persons. This would mean that total costs of incarceration would fall to around 10 billion dollars meaning total potential savings would exceed $64 billion per annum.[34] However, in the best case scenario, if the U.S. could reduce its incarceration rate to the same level as Denmark (64 per 100,000), the potential savings would be greater than $72 billion.

A substantial proportion of these savings would flow to state governments and could help to alleviate the significant pressure on their budgets providing policymakers with a greater range of options to trim budgets or stimulate the economy. The savings could also be directed into policies targeted at young offenders or ex-prisoners to reduce recidivism rates, thereby driving further increases in future savings.

Cost of productivity loss

The size of the economic pie could be increased if a proportion of the prison population were part of the labor force rather than in correctional facilities. While prisoners tend to have lower levels of educational attainment, the majority have held employment prior to entering prison. Research from the Urban Institute,[35] shows that 70% of prisoners had held a job for at least one year before entering prison.[36]

The average value added of each worker can be reasonably calculated. It can be assumed that their average wage is $37,500 per annum and working on the proposition that 70% would have stayed employed if they had not gone to prison. The salary used is a smaller salary than the median wage which was calculated at $49,777 in 2009 by the U.S. census as it is assumed that people entering the criminal justice system are on lower average wages than other members of the workforce.
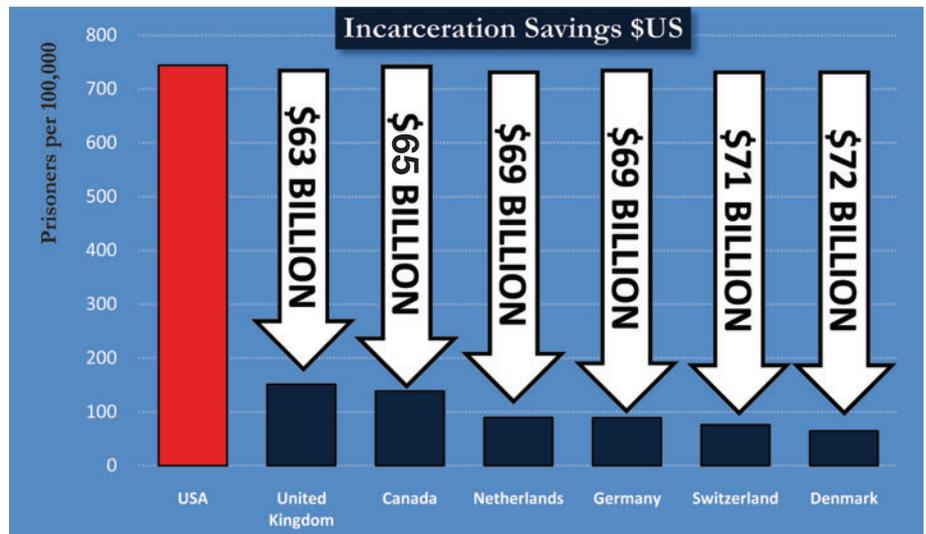
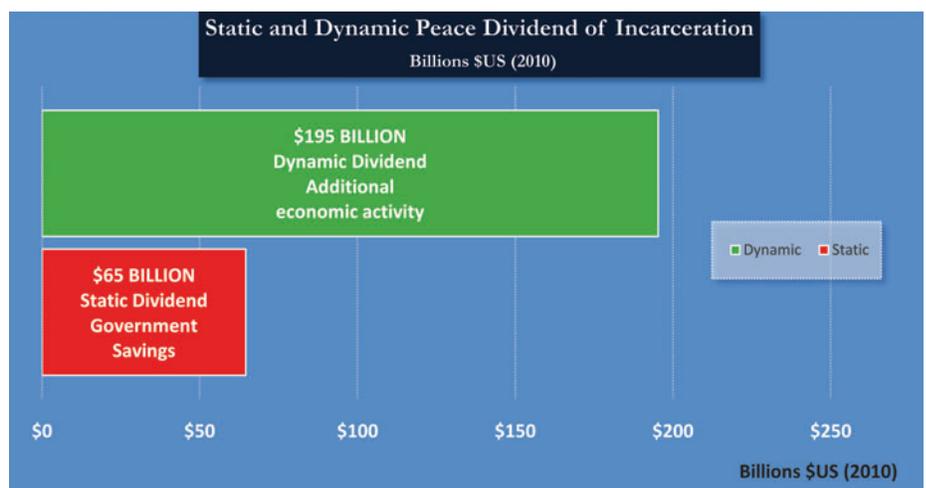The total cost of this lost productivity

Chart 33

Chart 34

figure is $97,666,954,421 or approximately $97.7 billion. This additional economic activity has a flow on effect through the economy for which it is assumed a one for one multiplier, resulting in the total additional economic activity of $195.4 billion.

Chart 34 illustrates the potential savings and subsequent economic boost to the U.S. economy if its incarceration rate was the same as Canada. The initial savings of $65 billion in red accrues to state governments, as they no longer have to share the burden of the cost of maintaining those prisoners. The $195 billion however, is the amount of additional economic

activity that would flow to the general economy.

Chart 34 – Additional economic benefits of lowering the incarceration rate to the same level as Canada

Evidently states with higher levels of incarceration have more to gain. The total costs borne by each state are detailed on page 44.

This report has focused on the cost savings and benefits from reductions in incarcerations, however there will be a need to invest in programs to supplant imprisonment or to reduce the recidivism rate. Estimating the costs of these programs is beyond the scope

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34   It is acknowledged that in order to realize this total amount a number of employees associated with the criminal justice system (prison guards, police officers etc.) would be losing their jobs. Given most of the employment burden is carried by state governments, the savings would accrue to the relevant governments, either enabling them to lower taxes or hire workers in other sectors. Even if a smaller savings rate was achieved without a loss of jobs, this could potentially still free up criminal justice system resources, resulting in better quality service delivery and the ability to focus on more serious crimes.
35   Non-partisan economic and social policy research think tank based in Washington D.C.
36   Visher, C., S. Debus, et al. (2008). "Employment after Prison: A Longitudinal Study of Releasees in Three States " Urban Institute, Justice Policy Centre October. (pp2)

of this study, but lessening the rates of incarceration of non-violent offenders who are employed would have immediate benefits to state government budgets as well the economy. For each person imprisoned their wage is lost to the economy, tax receipts are lost while the state has to also fund their imprisonment as well. This also has flow-on effects as their spending provides the stimulus to help employ others.

Violent Crime

In the U.S., the definition of violent crime encompasses four categories: homicide, assault, rape, and aggravated robbery.[37] Since homicide is included as a separate indicator, it has been excluded from the calculations of violent crime. As shown in chart 35, the violent crime rate in the U.S. has been falling steadily since the mid-90s and after a slight increase in 2007, dropped in both 2008 and 2009. It has now reached a level not previously seen since the early 1970s.

Chart 35 - U.S. violent crime rate per 100,000 population (1960-2009)

Whilst this drop has been remarkable, the violent crime rate in the U.S. is still higher than most European countries, as shown in chart 36.

Chart 36 - Violent crime rate, U.S. vs. selected countries

As with homicide, the full economic cost of violent crime is very difficult to capture and only the following items have been included;
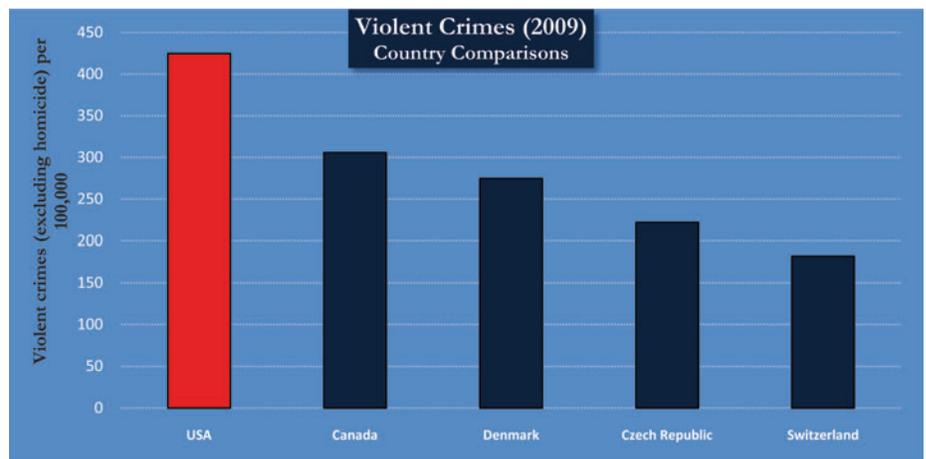
For assault, the economic costs consist of the medical costs as well as the lost productivity.

For rape, the economic costs consist of the medical costs and lost productivity costs, as well as costs associated with pain and suffering.

For aggravated robbery the average value of property stolen was used to calculate the cost of robbery.
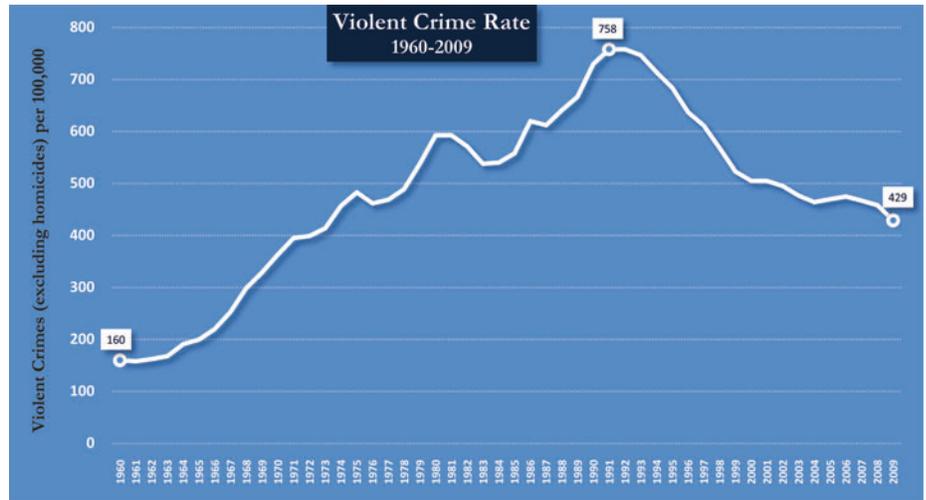
Chart 35

Chart 36

It can be seen that there are many other costs associated with violent crime that have not been captured in this study. Police and judicial costs associated with violent crime have been estimated later in the report under costs of policing.

The total cost of violent crime in this model is $94 billion for the U.S. in 2009. Productivity cost of assault accounts for the great majority of this total cost at $58 billion, while the productivity costs associated with rape totals $11 billion and robbery half a billion. In order to conceptualize the relevant total cost of violent crime in America, comparisons can be made to several countries as in chart 37 overleaf. This is not including any multiplier effect.

Another study, Anderson (1999), estimates three per cent of all medical expenses in the U.S. are related to violent crimes, while four out of five gunshot victims end up on public assistance and uninsured, costing the government $4.5 billion annually.[38] Based on U.S. Government estimates of the total expenditure on health care which surpassed $2.3 trillion in 2008,[39] it can be assumed violent crime has a very significant cost via medical expenses. Three per cent of total healthcare costs is $69 billion.

Furthermore, victim and child protection services are another source of expenditure not included in this analysis.[40]

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37 FBI Definition of Robbery: The taking, or attempting to take, anything of value under confrontational circumstances from the control, custody, or care of another person by force or threat of force or violence and/or by putting the victim in fear of immediate harm.

38 David A. Anderson (1999) "The Aggregate Burden of Crime." The study was published in the October 1999 issue of the Journal of Law and Economics. Dollars have not been adjusted to 2010.

39 Centers for Medicare and Medicaid Services, Office of the Actuary, National Health Statistics Group, National Health Care Expenditures Data, January 2010.

40 'Victim Services Agencies and Child Protective Services agencies, as well as foster care for maltreated children removed from their homes, special education for maltreated children, and services aimed at reintegrating families with maltreatment problems are further costs...Victim service costs for child abuse are much larger ($1,000 to $2,000 per incident). However, like victim services for adults, these estimates are based on little hard data and several reasonable and conservative assumptions...' Miller et al. (1996, p13).

The possible additional savings and economic activity to society can be calculated by estimating the savings that would result if the U.S. managed to lower its violent crime.

Chart 37 – Potential economic impact from a reduction in the total violent crime rate[41]

The total violent crime rate in the U.S. is 424 incidents per 100,000 people. A reduction in this rate to the same level as Canada, which is just over 300 per 100,000 people, would have an economic impact of approximately $27 billion, while reductions to the level of Denmark with a violent crime rate of 275 per 100,000 people, would result in economic benefits of over $26 billion.[42] If the U.S. could reduce its violent crime rate to that of Switzerland (180), then the benefits would be worth over $53 billion. This aggregate cost includes the cost to both governments and the general community.

The cost of lost productivity from violent crime mainly consists of work days lost that result from violent crime and rape. Canada's assault rate is 305 per 100,000 people compared to the U.S. at 430 with the incidence of rape dramatically lower at 1.5 per 100,000 compared to the U.S.'s 28.7 per 100,000. If the U.S. had the same assault rate as Canada in 2009 then over 150,000 fewer assaults would have occurred.

Police Services

Police protection is defined by the BJS as the function of enforcing the law, preserving order and traffic safety, and apprehending those who violate the law.[43]

The estimate of cost per police officer is determined by dividing policing
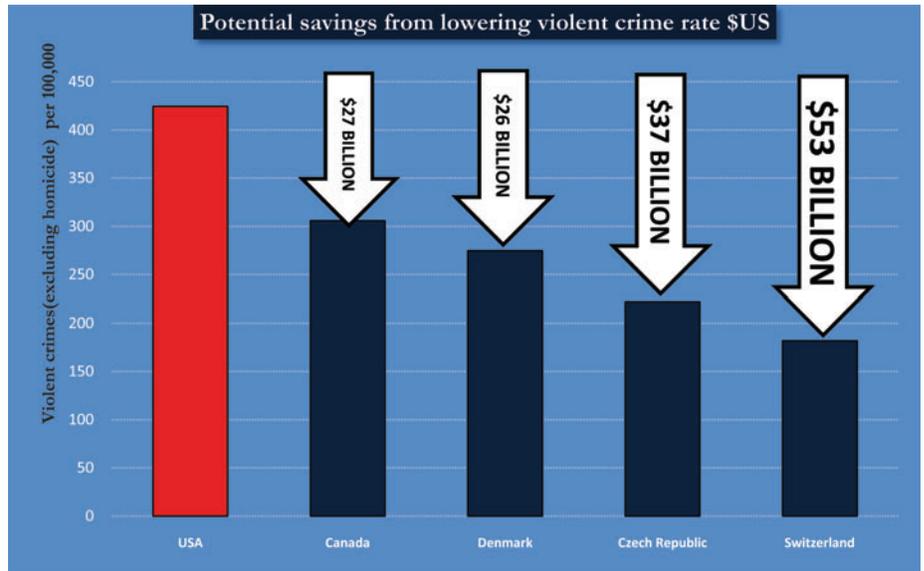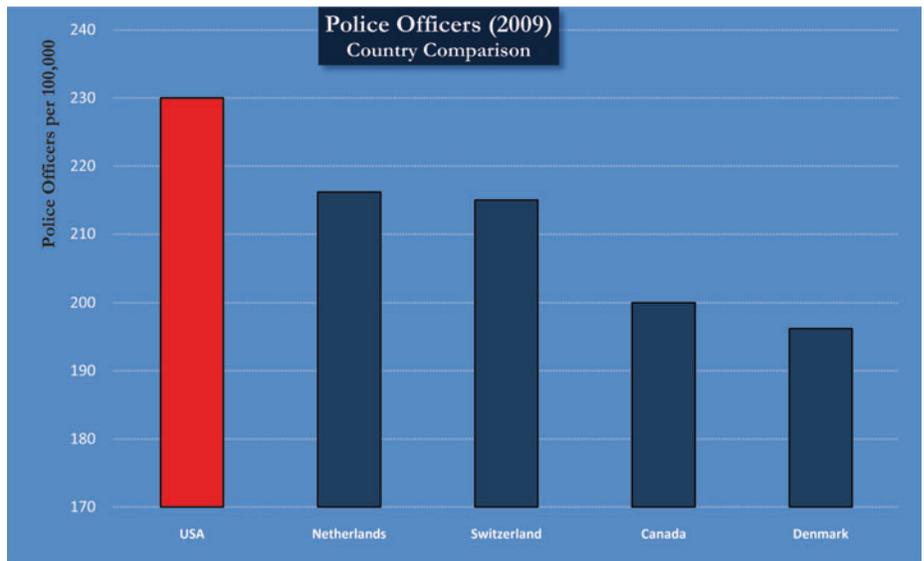

Chart 37

Chart 38

services costs, as identified by the BJS, by the number of police to arrive at a cost per police officer. The difference in police numbers per 100,000 people is then multiplied by the population and the cost per police officer to arrive at a total cost.

The number of police officers per 100,000 people had increased by 13% between 1991 and 1998 and has remained at the same level since. In 1991, there were approximately 191 police officers for every 100,000 people, in 2009 that figure was approximately 232 police officers for every 100,000 people. This rate is 15% higher than Canada's.

Chart 38 – Police officers per 100,000 of population

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41 Figures are from the following sources: Assault sourced from the CDC, Robbery from the FBI UCR 2009. All sources are listed in the appendix. Rape comparisons between the United States and Canada are drawn from the UN Office on Drugs and Crime, sexual assault data: http://www.unodc.org/unodc/en/data-and-analysis/crimedata.html. It is noted the vast differences in reported levels of rape between the two nations. The UN figure has been used because these are the figures reported by the Canadian and US Governments. Rape is defined by the UN as sexual intercourse without consent, while the Canadian definition includes sexual assault with a weapon and aggravated sexual assault that may or may not involve sexual intercourse, whereas the FBI defines rape as; 'the carnal knowledge of a female forcibly and against her will;' does not include offenses perpetrated against males. further costs...Victim service costs for child abuse are much larger ($1,000 to $2,000 per incident). However, like victim services for adults, these estimates are based on little hard data and several reasonable and conservative assumptions...' Miller et al. (1996, p13).

42 The relative closeness of savings between Canada and Denmark reflect the different composition of violent crime in each of the countries. While Denmark has fewer incidents of rape and robbery, it in fact has higher number of assaults than Canada, which carries a higher cost.

43 Costs associated with policing services account for the following activities and capital items; patrols and communications, crime prevention activities, temporary lockups, traffic safety and engineering, vehicular inspection and licensing, all building used exclusively for police purposes, medical examinations and coroners, law enforcement activities of sheriff offices, and any unsworn school crossing guards, parking meter readers, animal wardens that are employed by a police agency.

Chart 39 – Government savings[44] from reductions in policing services

The potential total savings from a reduction in the use of policing services are shown in chart 39.

Evidently, this analysis does not advocate wholesale reductions in the employment of police and policing services for the sake of cost only, but to purely show the cost of violence from another perspective. There are positive aspects to policing over and above just arresting criminals. Having a well-funded police force means that proactive activities can be undertaken such as community policing, where the police spend more time in the communities to gain trust and act as a deterrent to crime or become engaged in rehabilitation programs.

Judicial and legal costs

Total costs related to judicial and legal services include all civil and criminal courts and activities associated with courts such as law libraries, grand juries, petit juries, medical and social service activities, court reporters, judicial councils, bailiffs, the activities of attorney generals, state attorney's and indigent cases.[45] For the purposes of this study judicial expenses of related crimes[46] are calculated on the basis of 30% of the total criminal justice system expenditure. Violent crime, weapon and related property offenses constitute a relatively notable percentage of the total civil and criminal caseload, being approximately 22.4% at the federal level and more at the local and state level. Therefore the 30% figure is a reasonable one to use.

To determine the savings that could result from decreases in the use of the judicial system, a comparison is made to Canada. The U.S. has 37% more violent crimes than Canada; therefore it could be expected that a 37%
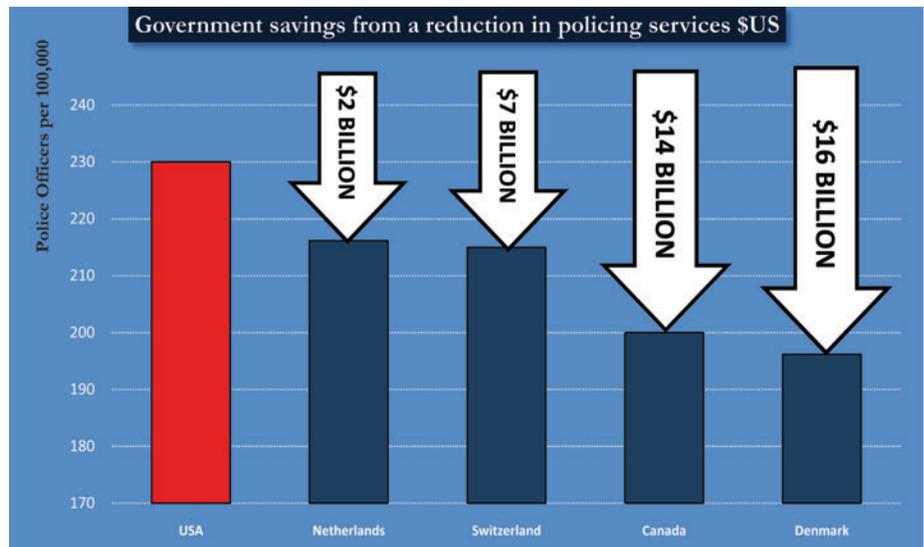

Chart 39

reduction in judicial costs associated with violence, weapons and related property offenses, could be estimated as the judicial savings if the U.S. had the same level of peacefulness as Canada.

According to the BJS, total federal, state, local judicial and legal spending in 2005 totaled approximately $53 billion in 2010 dollars. It is therefore assumed that the total judicial and legal costs associated to related crimes is in the region of $16 billion. A reduction in judicial expenditure to bring the U.S. in line with Canada would yield $5.8 billion in savings.

Furthermore, it is worth noting that aspects of judicial spending on criminal cases are proportionally much higher than for civil cases. Both state and local governments carry a large burden of the spending on indigent criminal defenses which requires employment of counsel attorneys, public defenders and court expenses. The resources committed to these functions are therefore much greater for criminal cases. So much so, the BJS found in a 2002 study there is a strong correlation (r=0.635) between general

crime rates and judicial expenditure, as states with high crime rates tend to have higher than average expenditures and employment devoted to criminal and civil justice.[47]

Total Aggregated Cost to Society

To illustrate the potential gains that could be made from improving the peacefulness of the U.S., a scenario was envisaged where reductions are made in the homicide, violent crime, and incarceration rates to the same levels as Canada, as outlined in previous sections. In this scenario, the collective economic savings to U.S. society would total $361 billion. One of the interesting facts to emerge from this study is that many U.S. states already have rates of homicide and violent crime lower than those of Canada and their incarceration rates are similar. Reductions in violence to the same level as Canada are therefore achievable and if these reductions could be realized then substantial savings and additional economic growth would result.

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44 It should be highlighted these savings only accrue to respective state governments and the federal government, and not into the general economy, as these savings if not put back into the economy in some other form, would effectively represent an extraction of capital from the economy. Economic gain would only flow if the respective monies went into the employment of more productive investments, whether they are tax cuts or investment in particular public infrastructure. It is for this reason savings from reductions in police officers is not included in the static dividend. This chart also assumes an equivalent proportional reduction in federal law enforcement officers and all police employees.

45 Bureau of Justice Statistics (2002) Justice Expenditure and Employment in the United States, 1999

46 Related crimes include all violent offenses, weapon offenses and property offenses. More detail on these categories is available in the Compendium of Federal Justice Statistics, 2004. U. S. Department of Justice, Washington, D.C. 20531, Office of Justice Programs.

47 BJS Ibid (2002 page 6)

Of the total amount listed above, approximately $89 billion can be attributed as savings to government and society. This is composed of the average cost of a violent robbery, the cost of incarcerating an individual, as well as the associated judicial costs and policing services which includes most aspects of police work. As a result, the overwhelming majority of these savings would accrue to state governments.

The additional economic activity of approximately $136 billion would represent an additional economic stimulus to the economy. This additional economic stimulus would have a multiplier effect through the economy and a corresponding job-creation effect. Based on an economic multiplier of one-for-one, the total economic gain would be approximately $272 billion. This is what is referred to as the dynamic peace dividend. The total savings and additional economic activity to flow to the economy would be in the region of $361 billion.

It should be noted that using this model the largest savings and productivity gains come from incarceration. This is mainly due to the fact that excellent statistics are available allowing full costing estimates for this indicator. If better statistics were available for all of the costs associated with violent crime and homicides then their costs would rise, resulting in the proportion of total costs for incarcerations dropping.

Based on the work of Brauer and Tepper-Marlin[48] nominal U.S. GDP in 2008 amounted to $14.4 trillion when actual employment totaled 143.3 million jobs. By dividing the number of people employed by the size of the U.S. economy yields 9,928 jobs for each billion dollar of U.S. GDP. This would mean that the additional economic activity of having a level of peacefulness similar to Canada would generate additional economic stimulus to create approximately 2.7 million jobs. This would have the effect of reducing the

Items representing savings to government and society	
Costs associated with violent robbery, homicide, rape and assault	$10,310,152,877
Total cost of incarceration	$64,603,434,784
Police services	$14,439,486,669
Judicial and legal costs of related crimes	$5,825,830,000
Total savings to society	**$89,353,074,330**
Items to generate additional activity - dynamic peace dividend	
Productivity loss from homicide	$16,103,561,475
Productivity loss from rape and assault	$22,100,405,311
Adding prisoners to the workforce	$97,666,954,421
Additional economic activity to society	$135,870,921,206
Multiplier effect on general assumption one for one	$135,870,921,206
Total savings and additional economic activity	**$361,094,916,743**

Table 19 – Total aggregated savings and additional economic potential to society if U.S. had the same violence as Canada

unemployment rate in the United States by some 20%, from 8.9% to 7.1%.

Total Economic Effect by State

The table overleaf is a state based breakdown of the economic effect that would be derived from improvements in peace. Each state's peace dividend has been calculated by summing the total savings and additional economic activity if there were no violence within the state. The economic value was also calculated if there was a 25%, 50% and 75% reduction in violence. This was done by uniformly reducing each of the categories of measurement by the respective percentage.

The figures were calculated by summing the entire cost of violent crime, assault, robbery, associated judicial and legal costs, corrections, lost productivity from violence and police services in each state. An economic multiplier was not used in these calculations. The per capita cost is derived by dividing the cost of violence by the population in each state as of 2009.

The economically large states of California, Texas and Florida have significantly more to gain in outright terms than smaller states. However, the less peaceful states of Louisiana, Florida and Nevada have the most to gain on a per capita basis, with Louisiana standing out with violence costing $400 more per person per year than the next nearest state. There is evidently a very strong inverse correlation between a state's ranking and the economic cost of violence per capita (r=-0.92). Louisiana recorded the most to gain, and Maine the least.

This report illustrates only some of the immediate costs associated with homicide, violent crime and incarceration. These costs do not fully encompass all costs associated with violence and have excluded many items that could have been included if better data was available.

Due to the different costs associated with the different categories of violence, the savings to states on a per capita basis do not exactly match the rankings in the U.S. Peace Index.

Employment effect of the peace dividend	
Total additional economic activity to society - dynamic peace dividend	$ 271,741,842,413
Equivalent job creation effect	2.7 Million Jobs

Table 20. The employment effect of the dynamic peace dividend from reducing violence to Canadian levels – Total Economic Effect by State

48   Brauer, J. and Tepper-Marlin, J. (2009). "Defining Peace Industries and Calculating the Potential Size of a Peace Gross World Product by Country and by Economic Sector." Report for Economists for Peace and Security and for the Institute for Economics and Peace.

Table 21 – Total economic effect of 100%, 75%, 50% and 25% reductions in violence

State	25% reduction in violence	50% reduction in violence	75% reduction in violence	100% reduction in violence	Total cost of violence per person
Louisiana	$2,760,563,792	$5,521,127,584	$8,281,691,376	$11,042,255,168	$2,458
Florida	$9,329,440,981	$18,658,881,962	$27,988,322,942	$37,317,763,923	$2,013
Nevada	$1,318,766,900	$2,637,533,799	$3,956,300,699	$5,275,067,599	$1,996
Alaska	$345,726,768	$691,453,536	$1,037,180,304	$1,382,907,072	$1,980
New Mexico	$981,443,223	$1,962,886,447	$2,944,329,670	$3,925,772,893	$1,953
South Carolina	$2,167,540,759	$4,335,081,518	$6,502,622,277	$8,670,163,036	$1,901
Delaware	$408,294,866	$816,589,732	$1,224,884,598	$1,633,179,464	$1,845
Tennessee	$2,903,193,352	$5,806,386,705	$8,709,580,057	$11,612,773,410	$1,844
Oklahoma	$1,662,121,899	$3,324,243,799	$4,986,365,698	$6,648,487,597	$1,803
California	$16,489,687,601	$32,979,375,201	$49,469,062,802	$65,958,750,402	$1,785
Maryland	$2,491,418,879	$4,982,837,757	$7,474,256,636	$9,965,675,515	$1,749
Michigan	$4,318,571,941	$8,637,143,882	$12,955,715,823	$17,274,287,764	$1,733
Arkansas	$1,250,941,804	$2,501,883,609	$3,752,825,413	$5,003,767,218	$1,732
Texas	$10,559,824,574	$21,119,649,149	$31,679,473,723	$42,239,298,297	$1,704
Alabama	$1,935,253,344	$3,870,506,688	$5,805,760,032	$7,741,013,376	$1,644
Arizona	$2,710,658,095	$5,421,316,190	$8,131,974,285	$10,842,632,380	$1,644
Missouri	$2,458,409,854	$4,916,819,707	$7,375,229,561	$9,833,639,415	$1,642
New York	$7,481,939,961	$14,963,879,921	$22,445,819,882	$29,927,759,843	$1,532
Wyoming	$208,206,826	$416,413,651	$624,620,477	$832,827,303	$1,530
Georgia	$3,648,451,973	$7,296,903,947	$10,945,355,920	$14,593,807,894	$1,485
Mississippi	$1,059,466,088	$2,118,932,176	$3,178,398,265	$4,237,864,353	$1,436
Illinois	$4,618,690,807	$9,237,381,613	$13,856,072,420	$18,474,763,226	$1,431
Pennsylvania	$4,448,674,850	$8,897,349,699	$13,346,024,549	$17,794,699,398	$1,412
Colorado	$1,748,283,527	$3,496,567,054	$5,244,850,581	$6,993,134,107	$1,392
Kansas	$953,623,887	$1,907,247,773	$2,860,871,660	$3,814,495,546	$1,353
North Carolina	$3,125,993,072	$6,251,986,144	$9,377,979,217	$12,503,972,289	$1,333
New Jersey	$2,779,261,296	$5,558,522,592	$8,337,783,888	$11,117,045,184	$1,277
Ohio	$3,639,539,442	$7,279,078,885	$10,918,618,327	$14,558,157,770	$1,261
Indiana	$2,022,617,932	$4,045,235,864	$6,067,853,797	$8,090,471,729	$1,260
Massachusetts	$2,047,277,896	$4,094,555,792	$6,141,833,688	$8,189,111,584	$1,242
Connecticut	$1,084,351,025	$2,168,702,050	$3,253,053,075	$4,337,404,100	$1,233
Virginia	$2,420,287,266	$4,840,574,532	$7,260,861,798	$9,681,149,064	$1,228
Oregon	$1,156,595,519	$2,313,191,039	$3,469,786,558	$4,626,382,077	$1,209
Wisconsin	$1,680,351,961	$3,360,703,923	$5,041,055,884	$6,721,407,845	$1,189
Idaho	$456,915,929	$913,831,859	$1,370,747,788	$1,827,663,718	$1,182
Kentucky	$1,269,405,997	$2,538,811,993	$3,808,217,990	$5,077,623,987	$1,177
Montana	$286,727,875	$573,455,749	$860,183,624	$1,146,911,499	$1,176
West Virginia	$529,800,424	$1,059,600,848	$1,589,401,272	$2,119,201,697	$1,165
Washington	$1,882,412,598	$3,764,825,196	$5,647,237,794	$7,529,650,392	$1,130
Rhode Island	$288,679,458	$577,358,916	$866,038,373	$1,154,717,831	$1,096
Hawaii	$349,614,285	$699,228,571	$1,048,842,856	$1,398,457,141	$1,080
Iowa	$776,579,594	$1,553,159,189	$2,329,738,783	$3,106,318,377	$1,033
South Dakota	$202,545,028	$405,090,056	$607,635,085	$810,180,113	$997
Nebraska	$430,429,916	$860,859,833	$1,291,289,749	$1,721,719,666	$958
Minnesota	$1,195,354,615	$2,390,709,230	$3,586,063,844	$4,781,418,459	$908
Utah	$625,650,835	$1,251,301,670	$1,876,952,506	$2,502,603,341	$899
North Dakota	$137,250,589	$274,501,179	$411,751,768	$549,002,358	$849
Vermont	$126,372,733	$252,745,466	$379,118,199	$505,490,932	$813
New Hampshire	$248,716,284	$497,432,568	$746,148,852	$994,865,136	$751
Maine	$216,233,996	$432,467,992	$648,701,987	$864,935,983	$656

Note these figures do not include any multiplier effect.

Table 22 – A 25% reduction in violence would reap $190 billion a year

Per cent reduction in violence	Cost each year (2010 adjusted)
25% Reduction in Violence	$190 billion
Total Cost of Violence per capita (National Average)	$1,425 per year

Table 22

As seen in table 22, aggregating the total costs for every form of violence measured in the USPI shows a 25% reduction in the total cost of violence is worth at least $190 billion each year, with the total average cost for every man, woman, and child to be $1,425 [49] per person, per year. Future studies could further the analysis to break down the potential additional economic activity possible in each state and run cost benefit studies on various violence reduction programs.

Indicator	Original Weight	Economic Weight
Number of homicides per 100,000 people	0.24	0.10
Number of violent crimes per 100,000 people	0.24	0.32
Number of jailed population per 100,000 people	0.18	0.36
Number of police officers per 100,000 people	0.18	0.17
Availability of small arms	0.18	0.04

Table 23
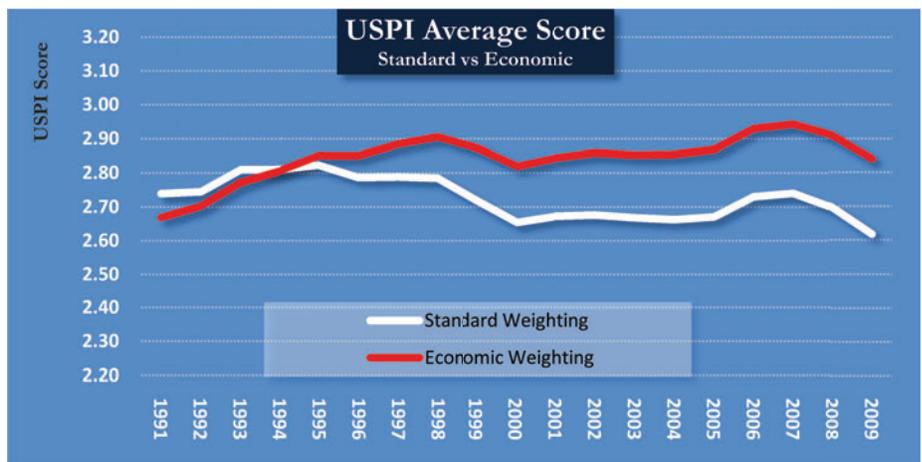
An Economic Weighting of Peace

To further understand the sensitivity of the U.S. Peace Index and to better understand the changes in economic costs over time, another index was created which used the same indicators; however the weight of each indicator was altered to reflect the differential in the economic value of each indicator.

An analysis was also carried out against the same factors that were correlated against the U.S. Peace Index to determine how the economic-weighted index would correlate. This was done to determine the sensitivity of the weightings used in the U.S. Peace Index. It was found that the same factors remained significant regardless of which index was used; thereby helping to validate the methodological robustness of the approach.

To produce an economic weighting, the ratio of the total cost of the five indicators was used as a base measure of importance:

Table 23 – Indicators weighted on the basis on their economic cost

As shown in table 23, the relative weights of incarceration and violent crime have increased, owing to their greater total economic impact, whilst the relative weights of the other three indicators have decreased.

Chart 40 – The structural shift in the cost of violence is due to incarceration

Chart 40 shows the difference in the average USPI score and the economic-weightings index. While the standard weighting (in white) decreased over time, showing increases in peace, the economic weighting (in red) increased over time showing how, if peace is quantified in economic terms, it has not increased. The gains achieved in reducing violent crime have in fact been offset by the burgeoning cost of incarceration.

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49 Note this figure does not include multiplier effects that would apply to lost productivity from homicide, incarceration and assault as this calculation simply represents the cost to accrue per individual in one year.

KEY FINDINGS

1. From 1995 to 2009, the United States has become more peaceful

Peace improved by 8% from 1995 to 2009, driven by a substantial decrease in the rates of homicide and violent crime. However these improvements have been largely offset by large and progressive increases in the incarceration rate, which has seen a slight decline only in the last two years.

There have been three trends; the first was from 1997 to 2000 when there was a dramatic decrease in homicides and violent crime. This was followed by a plateau effect with no change in homicides and violent crime from 2000 to 2007, and finally the improving trend resumed from 2008 onwards.

From 1991 to 2009, 28 states improved their peacefulness while 10 of these states experienced an increase in peacefulness beyond 15%. Overall, the average USPI score moved from an average of 2.74 in 1991, to 2.62 in 2009, with most of the improvement coming from the bottom 30 ranked states.

2. The five most peaceful states are Maine, New Hampshire, Vermont, Minnesota and North Dakota

The Northeast is the most peaceful region in the U.S., with all of its states ranking in the top 30 of the U.S. Peace Index, including the heavily populated states of New York, Pennsylvania, and New Jersey. The least peaceful states are Louisiana, Tennessee, Nevada, Florida and Alabama.

3. Peace is linked to opportunity, health, education and the economy

Statistically significant correlations were found with fifteen different social and economic factors. These related to health, education, demographics and economic opportunity, but not to political affiliation. The key correlants were:

- % with at least high school diploma (2009)
- High school graduation rate (2007)
- PEW State of the States - Educational Opportunities
- % without health insurance (2008-2009)
- % with diabetes (2008)
- Life expectancy at birth (2007)
- Teenage pregnancy rate (2008)
- Infant mortality rate (2007)
- Teenage death rate (2007)
- Household income Gini coefficient (2009)
- % households in poverty (2009)
- Gallup State of the States (2009) Basic Access
- Labor force participation rate (2009)
- % children in single parent families (2009)
- % females in Labor force (2009)

Many of these factors can be seen as measures of opportunity. States that ranked higher on these social and economic factors tended to have higher scores in peace - indicating access to basic services, having an education, good health, and ultimately the opportunity to succeed, are key pre-requisites to a more peaceful society.

4. Peace is not linked to political affiliation

Neither the groupings of Republican or Democratic states had a discernable advantage in peace. Although the top five states are predominantly Democratic and the bottom five states are predominantly Republican, once the other states were included in the analysis they neutralized out any effect.

5. The potential economic gains from improvements in peace are significant

Improvements in peace would result in the realization of substantial savings for both governments and society. If the U.S. reduced its violence to the same levels as Canada then the general community and state governments would collectively save in the region of $89 billion while the same reductions in the level of violence would provide an economic stimulus of approximately $272 billion. The release of trapped productivity through the abatement of violence would create a stimulus that could generate an additional 2.7 million new jobs, effectively lowering the U.S. unemployment rate by 20% from 8.9% to 7.1%.

6. On a per capita basis, the top five states with the most to gain from reductions in violence are Louisiana, Florida, Nevada, Alaska and New Mexico

The total economic effect of violence tends to be greatest in the most violent states; however several states have a structurally higher cost of violence because of the composition of their violence. For instance, lost productivity from assault and lost productivity from incarceration are the largest shares of the total cost of violence, so states with high levels of incarceration and assault tend to have a higher per capita cost. In outright

dollar terms, the large populous states with high levels of incarceration have the most to gain, such as California, Florida and Texas.

7. Growing incarceration is a drag on the economy and in recent years has not had a significant effect on violent crime

While homicide and violent crime rates have fallen, the economic benefits to flow from these decreases have been largely offset by the costs associated with the increase in the incarceration rate. In recent years there has been no statistically meaningful relationship between increases in incarceration rates and decreases in violent crime. While from 1991 to 1999 increases in incarceration were met with falls in violent crime, from 2000 to 2007 increases in the incarceration rate had no significant impact on the level of violent crime. Furthermore for 2008 and 2009 both the violent crime and incarceration rates dropped.

8. The *Gallup Basic Access sub-index* is the strongest correlating qualitative measure, linking the perception of how satisfied people are with their access to basic services to peace

The *Gallup Basic Access sub-index* has a correlation of r=-.75. This sub-index is based on 13 questions gauging access to basic needs for a healthy life – specifically, access to clean water, medicine, a safe place to exercise, and affordable fruits and vegetables; enough money for food, shelter, and healthcare; having health insurance, having a doctor, having visited a dentist recently, satisfaction with the community, the community getting better as a place to live, and feeling safe walking alone at night. This strong correlation shows further research into qualitative attitudinal factors such as feeling comfortable in a community and feeling optimistic about the community one lives in are also important factors not necessarily captured in quantitative studies.

9. Six of the top ten most populous states were also in the top ten percentage improvers of peace

These states included New York, California, Texas, Georgia, Illinois and Michigan. This is an interesting finding which requires further qualitative research and potentially provides a novel insight into why Pennsylvania as the sixth most populous state, also ranked in the bottom ten for declines in peace. Further research could perhaps better reveal common demographic, economic and governance related trends in these populous states.

10. The three Midwestern states, North Dakota, South Dakota and Montana, all experienced the three most significant declines in peacefulness

This result stands out as the three Midwestern states all declined in peacefulness by over 40%. However, these states are still relatively peaceful states and in the top half of the USPI. Understanding commonalities between them may improve understanding as to why these states have declined in peacefulness and what they can do to improve.

CONCLUSION

The Institute for Economics and Peace has produced the U.S. Peace Index with the aim of improving the measurement and the understanding of peace within the U.S. The report illustrates a generally positive story of a nation whose peace in many aspects is improving.

The U.S. proved to be an excellent choice for the first national peace index due to the quality of data available on many of the indicators used to build the Index. The size and diversity of the country also makes for some interesting comparisons. Because the U.S. is the largest economy in the world and its peacefulness lags that of other developed nations, the potential economic opportunity of improving peace is in fact greater in the U.S. than in any other nation in the world.

While peace is self-evidently socially desirable in its own right, this report has shown the potential economic benefits from peace to be substantial and therefore of significant interest to business, government and civil society.

The USPI has found that peace varies significantly in and between states showing the United States is far from homogenous in terms of its relative levels of peacefulness. Historic trends over the last 19 years show that while peace has improved, the rate of improvement in peace has been highly disparate, with some states making large strides, and other states falling behind. This has been driven by significant movements in the key indicators, and while there is a general trend towards peace, some states dramatically deviate from this trend.

The clearest national trend is the sustained fall in the homicide and violent crime rates to the year 2000 followed by a steady state until 2007 and a resumption of the falling trend from 2008 onwards.

Increasing incarceration rates during the 1990s did coincide with falling violent crime and homicide. However, as the incarceration rate continued to grow during the early to mid-2000s, the rises resulted in substantial increases in government budgets to house the additional inmates while there was no strong discernable relationship between the incarceration rate and violence from 2000 onwards. This is highlighted by the states which recorded the largest decreases in violence also experiencing falling incarceration rates.

Many factors were correlated against the U.S. Peace Index to better understand the types of environments that are associated with peace. The statistically significant correlations were those grouped by health, education and opportunity with health being the highest correlating group of factors.

The estimation of the economic benefit to society was made up of two components; the static peace dividend and the dynamic peace dividend. The static peace dividend is the monetary value that would be saved by reductions in violence. A large proportion of these savings would accrue to government. The dynamic peace dividend is the additional economic activity that would be generated by freeing up productivity which is trapped by violence. If the United States achieved the same levels of peace as Canada then the economic effect on the U.S. economy would be $361 billion, comprised of $89 billion from the static peace dividend and $272 billion from the dynamic peace dividend. Many additional costs and factors were knowingly not taken into account in estimating this figure, as such the true benefits of an improvement in peace would likely be significantly greater.

APPENDIX A

Sources of the secondary indicators

Factor	Year	Source
Unemployment Rate	2009	Bureau of Labor Statistics, Geographical Profile of Employment and Unemployment
Life Expectancy at Birth	2007	Social Science Research Council, American Human Development Project
Teenage Death Rate	2007	Annie E. Casey Foundation , "Kids Count National Data"
GSP Per Capita	2009	Bureau of Economic Analysis, Gross Domestic Product by State
% With Diabetes	2008	Centers for Disease Control and Prevention, Behavioral Risk Factor Surveillance System
% Adult Obesity	2008	Centers for Disease Control and Prevention, Behavioral Risk Factor Surveillance System
Infant Mortality Rate	2007	Centers for Disease Control and Prevention, "Deaths: Final Data for 2007"
Teenage Pregnancy Rate	2008	Centers for Disease Control and Prevention, "Births: Final Data for 2008"
High School Graduation Rate	2009	Digest of Education Statistics, National Center for Education Statistics (2009)
2008 Election (% Voted Republican)	2008	Federal Electoral Commission, 2008 Official Federal Presidential Election Results
2008 Election (% Voted Democrat)	2008	Federal Electoral Commission, 2008 Official Federal Presidential Election Results
Gallup State of the States, Wellbeing	2009	Gallup, State of the States
Gallup State of the States, Basic Access	2009	Gallup, State of the States
Reported Political Affiliation (% Conservative)	2009	Gallup, State of the States
Reported Political Affiliation (% Moderate)	2009	Gallup, State of the States
Reported Political Affiliation (% Liberal)	2009	Gallup, State of the States
% Without Health Insurance	2008	Kaiser Family Foundation, Kaiser State Health Facts, http://www.statehealthfacts.org
2008 Election (Voter Turnout)	2008	McDonald, Michael P. "Voter Turnout 1980-2010" United States Election Project <http://elections.gmu.edu/index.html>
Average Teacher Salary	2009	National Education Association. "Rankings and Estimates" (2009)
Educational funding (per student average)	2008	Public Education Finances Report, U.S. Census Bureau (2008)
U.S. Human Development Index	2008	Social Science Research Council, American Human Development Project
PEW State of the States - Government Management	2008	The PEW center on the states, Grading the States
PEW State of the States - Educational Opportunities	2008	The PEW center on the states, Grading the States (2008)
PEW State of the States - Campaign Finance	2008	The PEW center on the states, Grading the States
% of Children with Immigrant Parents	2005-2006	Urban Institute, "Children of Immigrants: National and State Characteristics, Urban Institute"
Labor Force Participation Rate	2009	U.S. Census Bureau , American Community Survey
Median Income	2008-2009	U.S. Census Bureau, American Community Survey
% Children in Single Parent Families	2009	U.S. Census Bureau, American Community Survey
Armed Forces Participation Rate	2009	U.S. Census Bureau, American Community Survey
Household Income Gini Coefficient	2008	U.S. Census Bureau, American Community Survey
% With at least High School Diploma	2009	U.S. Census Bureau, American Community Survey
% Bachelor's Degree or Higher	2009	U.S. Census Bureau, American Community Survey
Household Income Gini Coefficient	2009	U.S. Census Bureau, American Community Survey
% Individuals with home internet access	2009	U.S. Census Bureau, Current Population Survey
Population	2009	U.S. Census Bureau, Population Estimates
% Households in Poverty	2009	U.S. Census Bureau, Small Area Income and Poverty Estimates

Gun availability proxy

Why use firearm suicides as a percentage of total suicides as a proxy for the availability of small arms?

Due to the lack of accurate administrative data on gun statistics, several proxies for gun prevalence have been used in studies in the past. Earlier proxies used in studies in the U.S. and overseas focused on the fraction of criminal homicides committed with a gun; however this is less commonly used in studies today. Some examples of commonly used proxies are[50]:

- Fraction of criminal homicides committed with a gun (Brearley 1932) (Fisher 1976) and across nations (Etzioni and Remp).

- "Cook Index" – average of the gun per cent in homicide with the gun per cent in suicide applied to study of city robbery rates.

- Kleck and Patterson (1993) – a five item factor computed from the percentage gun use in homicide, suicide, assault and robbery, as well as the value of stolen guns relative to the total property stolen.

- Krug (1968) statistical information on participation in gun-related activities – use of data on the rate of hunting licenses issues per capita. More recent studies used county-level subscription to *Guns & Ammo* and on membership per capita in the National Rifle Association.

These proxies are based on either vital statistics mortality data or on subscription and membership information. They can then be correlated with available survey information from the General Social Survey and the CDC's Behavioral Risk Factor Surveillance System (BRFSS)[51] which are primary sources accounting for gun ownership. The reason why these surveys have not been used in
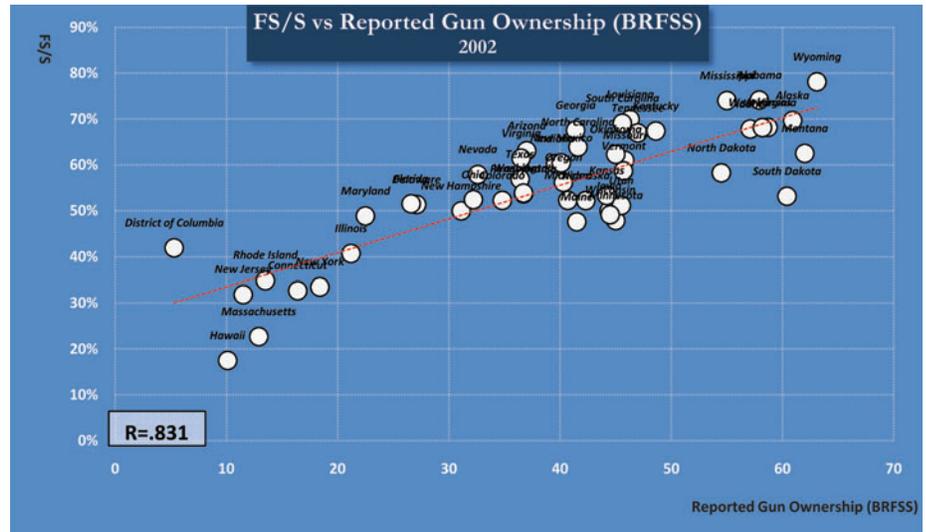

Chart 41

this study for the primary source on gun prevalence is because of limited availability over time and lack of data at the state level required by the USPI.

The USPI bases research from Azreal (2001)[52], Miller (2007), and Kovandzic (2005) which show, based on the availability of data and other proxies, percentage of suicides committed with a firearm is the best performing of all proxies. Research conducted by the IEP also reaffirm the findings of these studies that for data required at the state level, the percentage of suicides committed with a firearm is the most suitable proxy.

In order to cross-check the validity of the firearm by suicides proxy (FS/S) the USPI ran a correlation with the results of the BRFSS for the years 2001 and 2002. The USPI would have used the General Social Survey (GSS) but data is not available at the state level on questions related to firearms. As Chart 41 shows, when the percentage of suicides by gun is correlated with the results of reported gun ownership on the BRFSS[53], there is a strong correlation of r=.831 across all 50 states. Importantly, a similar result on

the national level is also reached for the GSS, while it should be noted the BRFSS has over 200,000 respondents compared to the GSS's 2,000. Changes in the national average of the FS/S from 1991 to 2006 closely track the changes in reported gun ownership in the GSS at a statistical correlation of r=.77. The ability of the FS/S to track trends in gun prevalence was also reflected in Azrael et.al.[54]

Chart 41 – Percentage of suicides by a firearm correlated with the gun ownership question

Several other studies have verified the relative strength of this proxy, as stated by Kovandzic *et.al.* in 2005, "recent research indicates [FS/S] is the best measure of gun levels for cross-sectional research"; Azrael *et. al.* from 2004 "Of the readily computed proxies for the prevalence of gun ownership, one, the percentage of suicides committed with a gun, performs consistently better than the others in cross-section comparisons". A recent study by Miller *et. al.* (2007) uses the BRFSS survey data to inform the accuracy of the FS/S statistic and addresses some of the issues associated

50   Azrael, D., P. J. Cook, et al. (2001). "State and Local Prevalence of Firearms Ownership: Measurement, Structure, and Trends " NBER Working Paper Series Working Paper 8570 (October 2001).

51   BRFSS: The Behavioral Risk Factor Surveillance System (BRFSS) is the world's largest, on-going telephone health survey system, tracking health conditions and risk behaviors in the United States yearly since 1984. Currently, data are collected monthly in all 50 states, the District of Columbia, Puerto Rico, the U.S. Virgin Islands, and Guam [http://www.cdc.gov/brfss/]

52   Azrael, (ibid).

53   The BRFSS is based on the question of 'do you have a gun in your home'.

54   Azrael (2001), page 3,4

with using the proxy. A 2008 study by Neill and Leigh showed firearm suicides decreased as a result of the Australian Government's gun buyback scheme, suggesting a relationship between gun availability and firearm suicide demonstrating the applicability of the proxy in a different context.[55] Cook and Ludwig also validated the superiority of the FS/S proxy in their 2006 study, where they also found significantly positive correlations on GSS and FS/S while subscription rate to *Guns and Ammo* "performed less well and in some cases yielded a negative coefficient estimate."[56]

Scoring ranges for each indicator in the USPI

Access to Small Arms

1	2	3	4	5
0 - 26.52%	39.30%	52.09%	64.88%	>77.65%

Police

1	2	3	4	5
0 - 211.63	271.86	332.11	392.36	>452.60

Incarceration

1	2	3	4	5
0 - 105.99	222.44	338.89	455.35	>571.80

Violent Crime

1	2	3	4	5
0 - 83.88	295.98	508.10	720.21	>932.32

Homicide

1	2	3	4	5
0 - 1.30	4.54	7.79	11.05	>14.29

APPENDIX D

Sources for Canadian and U.S. Violent Crime Data

Note: Canada defines three categories of assault, for which only category 1 and 2 were used for comparison with the U.S. as these are a similar definition to the FBI definition of aggravated assault. The IEP has used the high cost for assault from the CDC because FBI statistics used by IEP only account for aggravated assault, which is defined as; "an unlawful attack by one person upon another for the purpose of inflicting severe or aggravated bodily injury. This type of assault is usually accompanied by the use of a weapon or by other means likely to produce death or great bodily harm." It is therefore reasonable to presume these types of assaults are likely to result in hospitalization.

Form of Violence	Canadian Source	URL
Aggravated Assault	Statistics Canada	http://www.statcan.gc.ca/
Rape	UN Office for Drugs and Crime	http://www.unodc.org/unodc/en/data-and-analysis/crimedata.html.
Robbery	Statistics Canada	http://www.statcan.gc.ca/
Police Officers	Statistics Canada	http://www.statcan.gc.ca/
Homicide Rate	Statistics Canada	http://www.statcan.gc.ca/
Incarceration Rate	Statistics Canada	http://www.statcan.gc.ca/
Population	Statistics Canada	http://www.statcan.gc.ca/

Form of Violence	U.S. Source	URL
Aggravated Assault	FBI Uniform Crime Report (2009)	http://www2.fbi.gov/ucr/cius2009/index.html
Rape	UN Office for Drugs and Crime	http://www.unodc.org/unodc/en/data-and-analysis/crimedata.html.
Robbery	FBI Uniform Crime Report (2009)	http://www2.fbi.gov/ucr/cius2009/index.html
Police Officers	FBI Uniform Crime Report (2009)	http://www2.fbi.gov/ucr/cius2009/index.html
Homicide Rate	FBI Uniform Crime Report (2009)	http://www2.fbi.gov/ucr/cius2009/index.html
Incarceration Rate	Bureau of Justice Statistics	http://bjs.ojp.usdoj.gov/content/glance/tables/corr2tab.cfm
Population	US Census	http://www.census.gov/popest/states/states.html

55   Neill, C. and A. Leigh (2008). "Do Gun Buy-backs Save Lives? Evidence from Time Series Variation" Journal of the Institute of Criminology 20(2).
56   Cook, P. J. and J. Ludwig (2006). "The social costs of gun ownership" Journal of Public Economics 90: 379-397.

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