

VIOLENCE CONTAINMENT SPENDING IN THE UNITED STATES

A NEW METHODOLOGY TO CATEGORIZE AND ACCOUNT
FOR THE ECONOMIC ACTIVITY RELATED TO VIOLENCE



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EXECUTIVE SUMMARY

It has been well established that violence has a marked effect on economic activity with many studies demonstrating the negative economic impacts of crime, incarceration, insurgencies and especially war. However, there have been no studies to systematically aggregate the economic costs of all forms of violence, including the costs of prevention and protection, to understand how much of an economy is captured by violence and violence containment.

For the purposes of classification, this form of economic activity has been defined as the violence containment industry (VCI). Aggregated as an industry sector it would be the single largest in the United States.

The Institute for Economics and Peace (IEP) has developed a new methodology to quantify the cost of violence and the economic gains associated with peace for the U.S. economy. All expenditure that is related to violence containment, whether performed by the military on the international stage or domestically through the provision of services to fight crime, has been classified together as the Violence Containment Industry or alternately, as violence containment spending. This provides a framework to classify and better understand a substantial part of the U.S. economy as well as providing a platform for future research. Given the sheer size of the U.S. economy that is dedicated to containing violence, quantifying the expenditure as a discrete industry creates a unique basis for further analysis and debate.

IEP defines violence containment spending as economic activity that is related to the consequences or prevention of violence where the violence is directed against people or property. This includes all expenditures related to violence, including but not limited to medical expenses, incarceration, police, the military, insurance, and the private security industry. It is divided into local, state, and federal government expenditure as well as private spending by corporations, households, and individuals.

While expenditures on containing violence are an important and necessary public good, the less a nation spends on violence related functions the more resources a nation can allocate to other, more productive areas of economic activity. Expenditure on violence containment is economically efficient when it effectively prevents violence for the least amount of outlay. However, money that is spent on surplus violence containment, or money that is spent on inefficient programs has the potential to constrain a nation's economic growth. This is simply because much of this type of expenditure is fundamentally unproductive, and if redirected toward productive pursuits, would improve government balance sheets, company profits and ultimately, the productivity and wellbeing of society.

The research presented in this report shows that in 2010, VCI accounted for \$2.16 trillion or around 15% of U.S. gross domestic product. This figure is considered conservative due to the difficulties of accounting for all private and public sector spending. Having not conducted an analysis of the size of the violence containment spending in other countries it is difficult to assess independently how the U.S. fares compared to other countries. Given the size of its defense and associated homeland security spending, the final size of the VCI in the U.S. is likely higher than other developed nations.

THE KEY FINDINGS OF THE STUDY ARE:

- Violence Containment spending in the U.S. amounted to \$2.16 trillion in 2010 equivalent to just over \$15,000 for each taxpayer or \$7,000 per year for every man, woman and child.¹
- If violence containment spending was represented as a discrete industry, it would be the largest industry in the United States economy, larger than construction, real estate, professional services or manufacturing.
- If violence containment spending was represented as a discrete national economic entity, it would be the seventh largest economy in the world - only slightly smaller than the UK economy.
- Violence containment spending is four times higher than the national defense budget.
- Public sector spending on VCI accounts for 10.8% of GDP while private sector spending is 4.2% of GDP.²
- If U.S. federal violence containment spending was reduced by \$326 billion or 25%, i.e. to the same relative levels as in 2001, then in one year the saved funds would be sufficient to entirely update the energy grid, rebuild all levies and renew the nation's school infrastructure.

Violence containment spending has been broken down into both the public and private sectors, and is represented in terms of net value added.³ It shows that the Federal Government spends over \$1.3 trillion or approximately 9% of GDP on violence containment. This is more than was spent on pensions and more than double what was spent on infrastructure in 2010.

National defense spending includes the Department of Defense, Homeland Security, Veterans Affairs and the debt servicing on these expenditures which is based on the proportion of military related government expenditure.⁴ Private sector spending on violence containment is conservatively estimated to be \$605 billion or 4.2% of 2010 GDP. The remaining amount is spent by state and local government on police, justice, corrections and other security related measures.

The approach presented in this report enables a new and novel approach to understanding the international economic competitiveness of a nation, based on calculating the percentage of GDP spent on violence containment. The less a nation spends on violence containment, providing it is also more peaceful, then the more competitive the economy should be, due to the ability to deploy its resources more efficiently. This evidently is only one dimension of national competitiveness, but a uniquely original and important one.

For business, higher violence containment spending can result in unaccounted costs such as higher taxes, increased sunken costs and increased ancillary costs such as investing in security systems, security guards or even higher insurance premiums. Additionally, the higher the level of violence in a corporation's area of operations then the more management time is devoted to responding to security rather than market development or competitive issues. This represents 'lost' opportunity which could be transferred into developing capital and expanding profits.

Given the enormity of the number of items that needed to be counted in this exercise, it is inevitable many much smaller items were excluded given the difficulty of obtaining data on the true value-added figure. As an illustrative example some of the more meaningful items excluded have been included on page ten.

The sheer size of spending on the Violence Containment Industries very clearly illustrates the enormous benefits of investing in the prevention of violence. If policymakers clearly understood the economic burden of non-productive violence containment then improving the levels of peacefulness would be seen as central to long term structural reforms.



¹ Based on IRS figures for number of individuals to lodge a tax return in 2009.

² The private sector figure is conservative.

³ Net Value Added is the sum of gross wages, pre-tax profits net of depreciation, and indirect taxes less subsidies.

⁴ The interest portion is calculated by taking the proportion of related defense and military expenditure (including homeland security and veterans affairs) as a percentage of NIPA Federal Government Consumption and Gross Investment Expenditure. The resulting percentage is applied to the net interest payments. Brauer, J. "Data, Models, Coefficients: United States Military Expenditure." *Conflict Management and Peace Science*. Vol. 24, No. 1 (2007), pp. 55-64.

INTRODUCTION

This report outlines the conceptual framework underpinning violence containment and provides initial research on accounting and costing the VCI in the United States.

“The definition of violence containment spending is *Economic activity that is related to the consequences or prevention of violence where the violence is directed against people or property.*”

While many studies have focused on a variety of aspects relating to the social consequences of violence there have been no systematic attempts by economists or policymakers to comprehensively account for the total economic cost of containing and dealing with the consequences violence. In light of this particular gap in research, the Institute for Economics and Peace has developed a methodology for categorizing and accounting for spending on violence containment by the U.S. regardless of whether the violence is in the U.S. or outside of its borders.

Based on estimations, in 2010 the United States private and public sectors spent approximately 15% of gross domestic product on violence containment. This is equivalent to \$1 out of every \$7 of value produced by the U.S. economy. The methodological approach that has been used is conservative and it is likely the ‘true’ figure would be much higher. While there has been substantial national debate in the United States regarding the Department of Defense’s (DoD) expenditure as a proportion of the Federal Government budget, what is often overlooked is the larger category of violence-related expenditures which are four times greater than the DoD budget projected to be \$670.9B in 2012.⁵ While we often discuss the portion of GDP devoted to defense and its effects on the economy the magnitude of the entire VCI is, to date, uncharted territory. Through combining offshore and domestic spending and including many types of violence-related expenditure it can be thought of as one distinct category. This should enable policymakers to think of the effects of violence in a more comprehensive and holistic way.

Determining whether certain types of expenditure form part of the VCI is in some cases very clear while in others the distinction may be more blurred. Despite this, the majority of expenditure is based on conceptually clear foundations and generally where distinctions become blurred or if data is not available no figure has been used or conservative assumptions have been made. The approach that has been adopted in counting the costs of violence is to take the current year’s costs only.

This means future expenditure on violence where the violence has occurred in the current year is not counted, whereas past violence which causes expenditure in the current year is counted. An example would be injuries that occurred in a prior year but needed medical treatment in the current year.

THERE ARE TWO TYPES OF ECONOMIC GAINS ASSOCIATED WITH REDUCTIONS IN VIOLENCE AND INCREASES IN PEACE:

- The direct benefits associated with the absence of violence, such as reduced corrections, justice expenditure, lower medical costs, smaller insurance premiums, fewer security guards, etc.
- The flow-on effects of the realized expenditure reductions of unproductive violence containment into more productive areas.

This study has aimed to comprehensively account for the first category but not the second. This second category also includes the productivity loss that occurs as a result of violence. Some direct examples of this would include the lost wages from injuries, death or incarceration.

Given the many limitations related to data availability and the apparent size and importance of this category of expenditure, a more comprehensive approach to understanding the cost of violence is needed. This would require the large task of restructuring the national accounts as well as business accounting standards to accurately track violence related expenditure. It would be a difficult and lengthy undertaking but given that this study has conservatively isolated 15% of the economy as being violence related expenditure then properly accounting for VCI would likely yield valuable insights for policymakers and business.

In recognizing the larger concept of violence containment the discussion should be broadened to account for the total cost that violence has on the economy regardless of its source. As it is in the economic self-interest of the U.S., there is a significant opportunity for business leaders and civil society to develop a public debate around how policymakers can best develop an environment that leads to improved peace both domestically and internationally.

⁵ Office of the Under Secretary of Defense (Comptroller) Overview, February 2011
http://comptroller.defense.gov/defbudget/fy2012/FY2012_Budget_Request_Overview_Book.pdf

WHAT IS PEACE?

The Institute for Economics and Peace has conducted extensive research to better understand the types of environments associated with peace. This research has focused on analyzing a rich set of quantitative and qualitative data and has identified the mechanisms that help nurture and sustain peace. This shows peace is more than just security and demonstrates that peaceful environments are associated with a particular set of cultural, political, and economic characteristics.

IEP research has demonstrated peace is more likely to be associated with a particular set of formal and informal institutions, structures, and social attitudes. When these elements flourish they provide many other benefits for society and help create an optimal environment for human potential to flourish. These structures have been described as the **Pillars of Peace**⁶ and consist of the following elements;

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

In practical terms there are many benefits for societies which perform well in these categories. These factors can help create higher per capita incomes, lower levels of business risk, high levels of social cohesion, and greater resilience when affected by external shocks.

While safety and security are integral to peace, protection from violence does not complete the picture of a peaceful society. The ideal society would have the least amount of violence while spending the least amount of money to contain what violence there is within the society. While violence containment spending may reduce violence, there are other indirect investments which can reduce violence in a cost effective way and build a lasting peace.

WHY IS PEACE IMPORTANT FOR SOCIETY AND THE ECONOMY?

Quantifying the size of the Violence Containment Industry is an important first step in enabling a deeper understanding of the interactions between investments in activities that reduce violence and their potential economic flow-on effects. While it may be necessary, the purchase of security comes at the expense of investment in other potentially productivity-enhancing assets.

The key policy question is ‘how can a society spend the optimal amount to contain violence while cost effectively investing in future reductions in violence?’ Ultimately, a society that manages to create the appropriate social attitudes and norms facilitates the conditions under which the likelihood of violence arising is substantially reduced. Work performed by IEP on the United States Peace Index (USPI) which measures the peacefulness of the fifty states of the U.S., has found several statistically significant social and economic correlates with peace. Peace is strongly associated with economic mobility and access to basic needs and health.⁷

By understanding the social and economic drivers of violence, policymakers and business leaders can better understand the costs and benefits of particular social and economic investment programs. By directing resources towards addressing the root causes of violence, and away from some forms of short term violence containment spending, policymakers and business can begin to make long term strides towards creating a virtuous cycle of peace and economic prosperity.

As government spending becomes more constrained by budgetary limitations, the cost of police wages, capital costs for jails and the ongoing burden of incarceration necessitates a relative decline in spending in other areas. Under these conditions, programs that alleviate the need to contain violence and are more economically viable over the medium term become important for improved financial management. Many violence alleviating programs also have spin-off effects such as education, which when appropriately targeted improves human capital as well as reducing recidivism rates. This then helps in reducing the need for policing, judiciary and incarceration costs, as well as adding to the labor market and increasing the government’s taxation receipts.

⁶ Refer to (2011) The Structures of Peace, IEP Research Brief, August 2011.

⁷ United States Peace Index, Institute for Economics and Peace, Sydney, April 2012.

METHODOLOGY

IEP defines violence containment spending as public or private sector economic activity that is related to the consequences or the prevention of violence where the violence is directed against people or property.

Table one provides a number of examples of the types of expenditures or activities included in violence containment.

Public sector spending includes government expenditures, at the federal, state, and local (county or municipal) levels. At the federal level, the most obvious component is the U.S. armed forces or military expenditure in general. This includes the cost of the Afghan and Iraq wars, U.S. bases and troop deployments, ongoing military-nuclear activity, the military use of outer space, the intelligence agencies, arms procurement, military-aid to foreign powers, virtually all of homeland security, veterans affairs, and more. Because the U.S. federal government budget is usually in deficit, the shortfall must be debt-financed.

Table One Examples of the Violence Containment Industry

Public Sector (federal, state, and local level)

- National Security and Defense: military, counterinsurgency, counterterrorism, transportation security, air transport security, maritime security, border control, etc
- Law Enforcement and Intelligence Agencies: FBI, CIA, ATF, DEA, etc
- Prison system including federal and state penitentiaries, the court system and local jails.

Private Sector

- Household, Personal and Corporate - capital costs: locks, alarms, fences, guards, metal detectors, vehicle security, victims shelters, patrol services, controlled access systems, private investigators, etc
- Security Services: Estimated size of private sector spending includes private security officers, cyber security market, self-defense industry, private security guard and schools, etc
- Consequences of Violence: legal costs, compensatory and punitive payments, medical and counseling costs, repairs, remediation, restorations, non-profit sector committed to violence containment, insurance premiums and payouts
- Private defense: defense exports and small arms manufacturing.

Thus, in proportion to the violence containment industry's contribution to the federal debt, a portion of the interest paid should be counted as a legacy cost coming due in the present budget year.⁸

Law enforcement includes police protection, judicial and public sector legal expenses, and correctional facilities at the federal, state, and local levels. 'Corrections' refers to the cost of operating prisons and jails, even if contracted out to the private sector prison industry, and the cost of dealing with parole, probation, and the court system. In addition, security-related expenditures for labor, services and equipment associated with infrastructure and events such as municipal airports, public schools and universities and publicly sponsored or supported events.

The private sector consists of activities in private households and businesses, such as deadbolt locks, building and car alarms, security guards, insurance premiums paid to insure against loss of life, limb, or property, and so on.

According to estimates made by the 'Small Arms Survey 2011', the private security sector employs some 20-25 million people worldwide and 2 million people in the United States. This compares to approximately 11 million police personnel worldwide of which 883,600 were employed in the United States in 2007.⁹ In addition, there are the security costs at passenger and commercial transportation hubs, which, in the U.S., are mostly privately owned and operated. There are also the private sector legal costs associated with violence against property or persons. While mostly captured in the legal services industry, these costs are also partly captured by large corporations' internal legal departments, making them difficult to count and therefore have not been included in this study. Additionally, there are the costs imposed on the health, medical, and rehabilitation sectors which are associated with violence.

The private sector also covers arms producers, both of major conventional weapons and weapons of mass destruction. When weaponry is manufactured for and sold to the U.S. Department of Defense (DoD) this is captured in the federal government budget. Small arms such as bladed weapons, handguns, long-guns and associated accessories and supplies such as gun sights, night scopes, and ammunition, accouterments, shooting ranges, and the gun magazine/publishing industry are also included in the cost accounting, but these make up a very minor component of the final figure.

Neither public nor private accounting systems are set up to separate security from non-security items, and it would take a major change in government and corporate accounting standards to capture the correct numbers.

⁸ The interest portion is calculated by taking the proportion of related defense and military expenditure (including homeland security and Veterans Affairs) as a percentage of NIPA Federal Government Consumption and Gross Investment Expenditure. The resulting percentage is applied to the net interest payments. Refer to Brauer (2007), which highlights the importance of counting legacy costs.

⁹ Small Arms Survey, 2011, chapter 4, Table 4.1 (p. 106).

DEFINING COST

It is important to reemphasize that the VCI is a necessary common good for all members of society, however without being able to estimate the size of spending it is difficult to understand its overall effect on the economy. Without being able to compartmentalize the costs, it is difficult to evaluate other mechanisms for reducing violence which may be more cost effective for society.

Given the shortcomings in accounting methods and the difficulty of obtaining value-added data, many items that should be included have been left out. For this reason, the final figures presented in this report can be considered conservative. For instance, some items that have not been counted in this study relate to:

- Business alarm systems to protect against theft
- Private household fire alarm systems to protect against arson
- The self-defense training equipment market
- The security passes systems industry (except bio-metrics)
- Security functions at Port Authorities¹⁰ (other than the New York Port Authority)
- The market for passive security including protective fences and gates (except for locks)
- The private market for taser guns, pepper spray, bullet proof glass, bullet proof vests, tear gas
- The private market for armed vehicles
- The private market for personal security aids, night lights, etc.
- Defense exports other than the top ten major exporters. Given the dominance of the ten largest exporters other arms exports were excluded due to the difficulty of counting.

The method adopted for this study is to total expenditures related to violence containment in the 2010 fiscal year.¹¹

Importantly, this includes expenditures on legacy costs¹² that fall due in the current year due to violence or past security-related events. For example, the medical treatment of a U.S. soldier permanently injured during an army exercise in the former West Germany imposes a burden on the U.S. health care system today. Likewise, debt incurred to finance past military budgets creates interest payments for the current year. This study pursues current expenditures as the method for totaling the costs of violence containment.

In practice, neither private nor public accounting systems are set up to make the necessary differentiations for many items and the lines of distinction may not be easy to define. Where there is ambiguity, a conservative approach has been taken; therefore many items related to private expenditure that may have been relevant have been excluded. To identify the VCI there is a need to bring together several levels of spending that have not been previously combined.¹³ Two rules that have been consistently applied to the data collection are consistency and comprehensiveness.¹⁴ For a more detailed explanation of the methodology for each sub-item please refer to Appendices A to C and for further information on the net value approach refer to Appendix D.

¹⁰ These have not been counted due to data difficulties, and some security functions at public transport hubs cannot be completely accounted for due to difficulties disaggregating state and federal transport budgets.

¹¹ The 2010 U.S. Fiscal year runs from 1 October 2009 to 30 September 2010.

¹² Legacy costs are costs incurred today for purchases made in the past. These may be the cost of pensions for labor purchased in the past, or debt service payments made today for prior loans.

¹³ Ideally, the final output of this research would look to something like the U.S. national income and product accounts (NIPA), as if in addition to being structured along agriculture, mining, manufacturing, business services, government, and other rubrics it were structured with separate "security" and "non-security" line items for each of the rubrics. One would then know what percentage of GDP is approximately due to the economic activity of "protecting ourselves from ourselves." Because of serious accounting difficulties this presents, a conservative indicative figure is provided which is a conceptual starting point for understanding just how much is spent on violence containment. Ideally, the final output of this research would look to something like the U.S. national income and product accounts (NIPA), as if in addition to being structured along agriculture, mining, manufacturing, business services, government, and other rubrics it were structured with separate "security" and "non-security" line items for each of the rubrics. One would then know what percentage of GDP is approximately due to the economic activity of "protecting ourselves from ourselves." Because of serious accounting difficulties this presents, a conservative indicative figure is provided which is a conceptual starting point for understanding just how much is spent on violence containment.

¹⁴ See Bozzoli, Brück, and Sottas (2010).

FINDINGS AND DISCUSSION

Table two summarizes the expenditures associated with the Violence Containment Industry. It is conservatively estimated that the private and public sectors together spend approximately 15% of GDP, or \$7,000 per person on violence containment. This could be alternatively expressed as \$15,000 for every tax payer or \$1 out of every \$7 of the U.S. economy. The major component of accounted expenditure is related to public sector spending which is 10.8% of GDP. This compares to 4.2% of GDP for private sector spending.

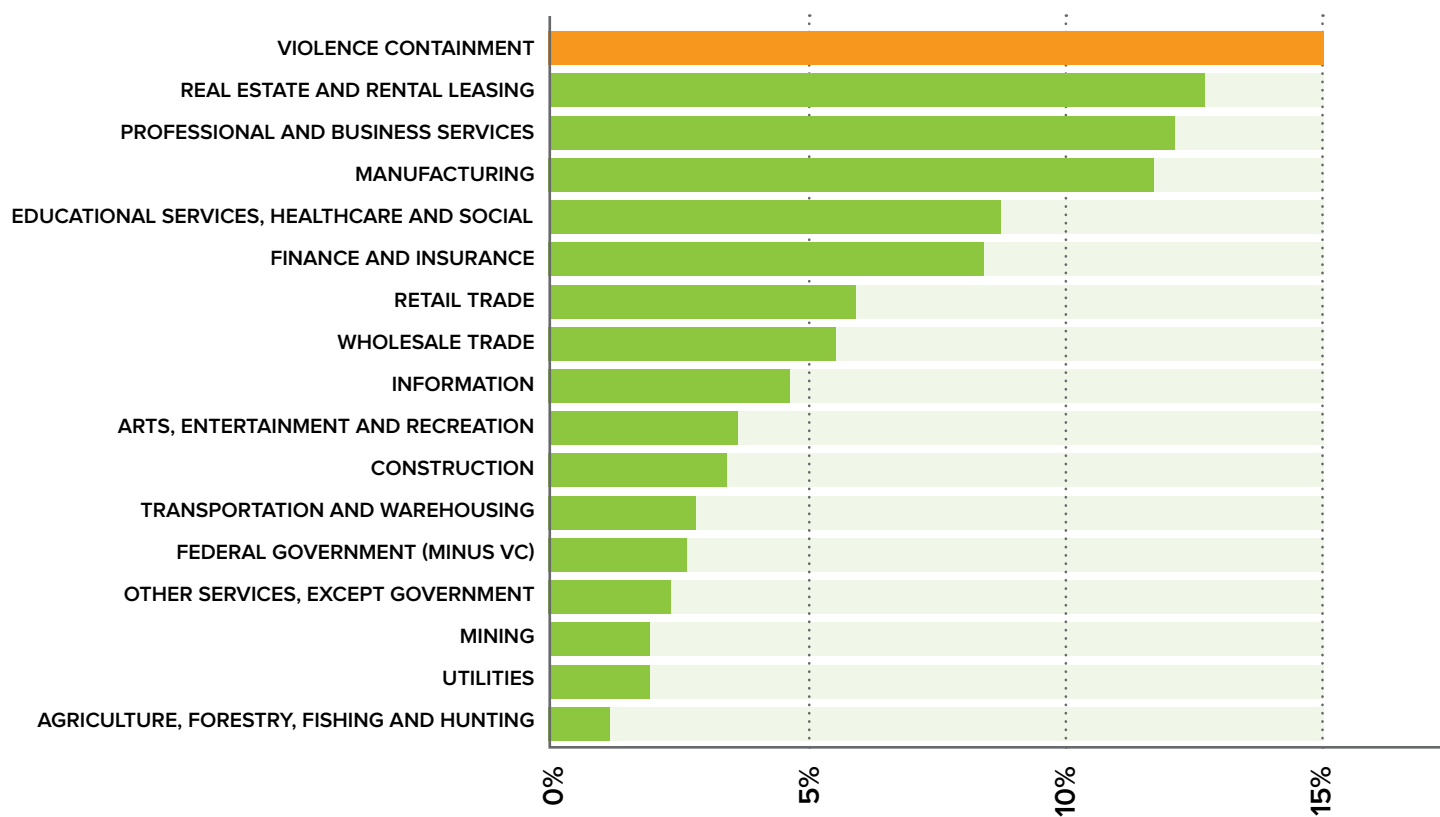
Table two Size of Violence Containment Industries

Public Sector	US\$ (bn)	% of GDP ¹⁵
National Defense, VA, HS, and Debt Service	1,203.00	8.327%
Police, Justice & Legal, Corrections (PJC) (not including local government)	130.80	0.905%
Total Other Public Sector Spending	226.51	1.568%
Total Public Sector	1,560.31	10.800%
Private Sector	US\$ (bn)	% of GDP
Household, Personal and Corporate - capital costs		
Household Security Market and Spending (locks, car alarms, safes, biometrics)	15.19	0.105%
Security Services Market		
Estimated Size of Private Sector Spending on Private Security Services	87.40	0.605%
Cyber Security Market	130.00	0.900%
Security Sector Training companies	11.00	0.076%
Consequences of Violence		
Victim Compensation Programs	0.47	0.003%
Property Loss from Intentionally Set Fires	0.67	0.005%
Mental Health Care and Welfare Services for Children of Abuse	27.81	0.192%
Private Legal (e.g., in-house corp. counsel)	25.00	0.173%
Medical Costs of Violent Crime (Upper)	24.81	0.172%
Repair/restoration - Vandalism	48.00	0.332%
Nonprofit Sector - Violence Containment Related	82.10	0.568%
Insurance (net premiums written - assumed VCI component 25%)	106.55	0.738%
Private Defense		
Defense Exports	37.20	0.257%
Small Arms Manufacturing (non-military)	5.00	0.035%
Ammunition Sales	0.50	0.003%
Total Private Sector	601.70	4.166%
Total, Public and Private	\$2.162 Trillion	15.0% of U.S. GDP
Per Household	\$18,830	
Per Taxpayer	\$15,004	
Per Person, per Year	\$7,003	

¹⁵ 2010 GDP amount of US\$14.447 trillion is taken from OECD Statistics. http://www.oecd-ilibrary.org/economics/gross-domestic-product-in-us-dollars_2074384x-table3

As shown in **figure one**, if the \$2.16 trillion of violence containment spending was represented as a discrete industry, it would be the largest industry in the United States economy, larger than government, real estate, professional services and manufacturing.¹⁶ The approach taken in this study is conservative and the final private sector value added figure would likely be much higher. Nonetheless, the government component of VCI spending on its own is still the fourth largest industry, behind real estate, professional and business services and manufacturing.¹⁷

INDUSTRY SHARE AS A % OF GDP (2010)



Source: Bureau of Economic Analysis, IEP

Figure one If Violence Containment Spending was Represented as a Discrete Industry, it Would be the Largest in the U.S. Economy.

¹⁶ Because of the issues associated with calculating the percentage of private sector spending that is value added, this part of VCI cannot be reasonably assumed to be completely 100 per cent value added. Counting of non-value added activity in the final figure is somewhat compensated due to the likelihood various categories of private VCI spending is left out because of accounting difficulties.

¹⁷ This does not disaggregate the contribution of VCI spending to the various other industries, so if VCI was truly represented as a separate line item the size of the other industries would be smaller. State and Local Government have also been taken out, including the Federal Government share of spending in the military.

03

RESULTS & FINDINGS

The enormous comparative size of this spending is shown when comparing the \$2.16 trillion of violence containment spending to the world's largest economies, as shown in **figure two**. In nominal terms, U.S. violence containment spending is the size of the seventh largest economy in the world, marginally smaller than the United Kingdom and larger than Brazil.

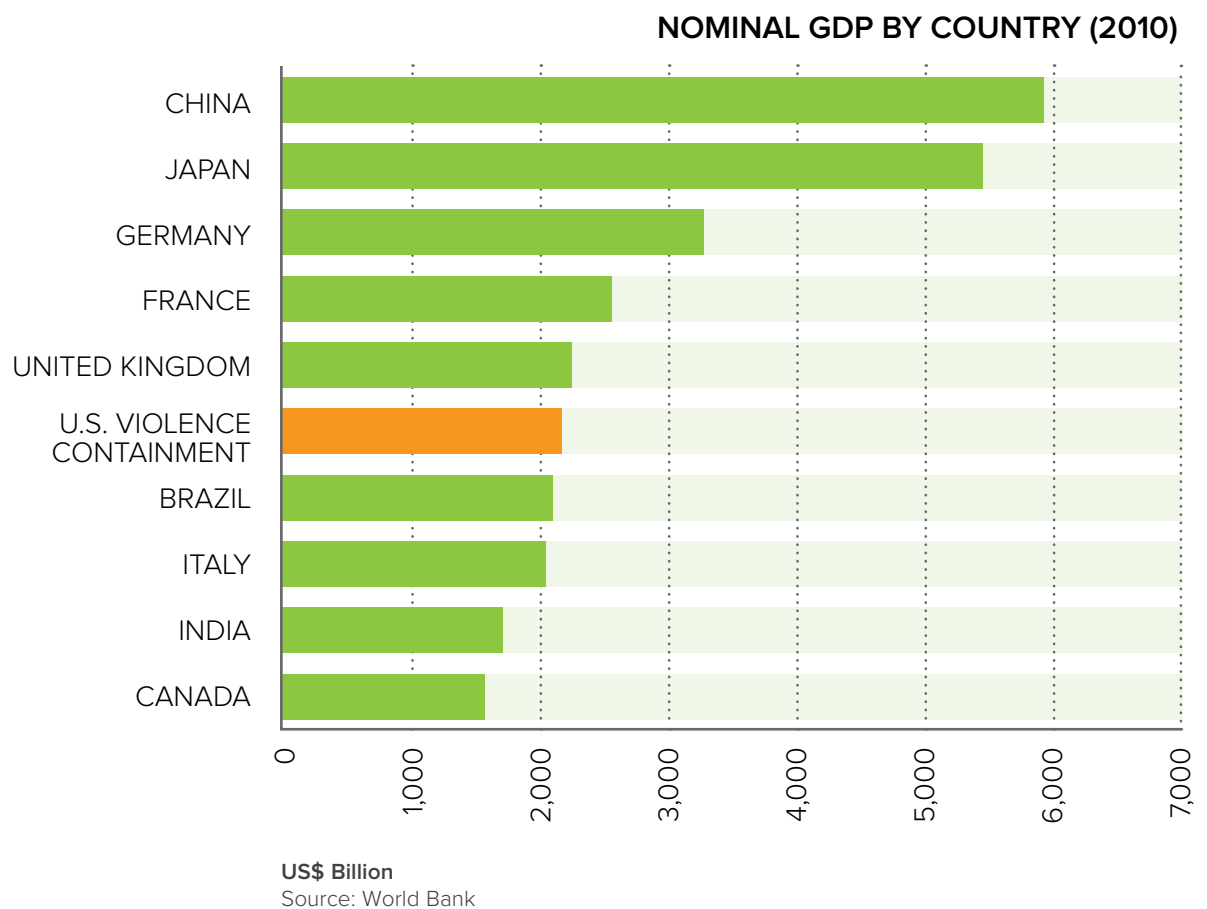


Figure two Violence Containment Spending Compared to the Largest GDPs in the World in 2010¹⁸

¹⁸ For purposes of visualization, U.S. GDP has been excluded from the chart.

Not having conducted an analysis of the size of the violence containment spending in other countries it is difficult to assess independently how the U.S. fares compared to other countries. Given the size of its defense and associated homeland security spending, the final size of the VCI is likely higher than other developed nations.

In terms of the composition of violence containment, the majority, 60% is borne by Federal government, with the next largest share spent by the private sector at approximately 28%. The rest is comprised of state and local government expenditure at 12% of VCI or \$101 billion and \$154 billion respectively. This breakdown is shown in **figure three**.

COMPOSITION OF TOTAL VIOLENCE CONTAINMENT

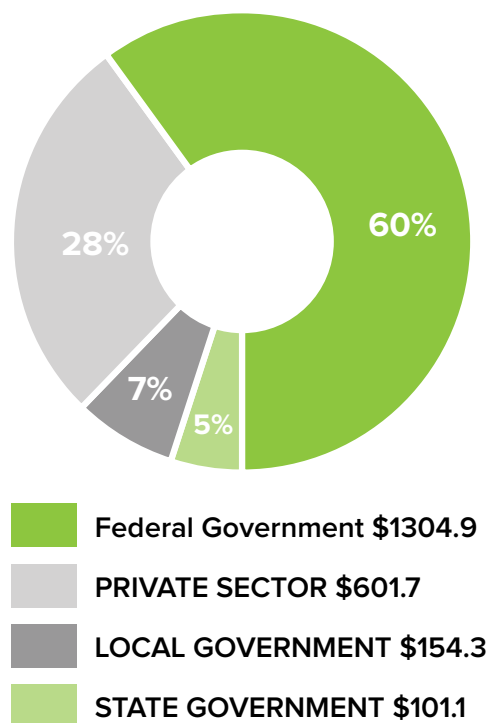


Figure three The Majority of Violence Containment Spending is by Federal Government

Public Sector Composition of Violence Containment

As has been shown, the majority of Violence Containment Spending is by government, some \$1.56 trillion in total. This is equivalent to 10.6% of GDP. Within the public sector, the great majority of this, 77% or \$1,203 billion is apportioned to the federal government's spending on national defense, Veteran Affairs, Homeland Security and debt repayment on military related debt. A full breakdown of the public sector violence containment is presented in Appendix A.

PUBLIC SECTOR VIOLENCE CONTAINMENT EXPENDITURE

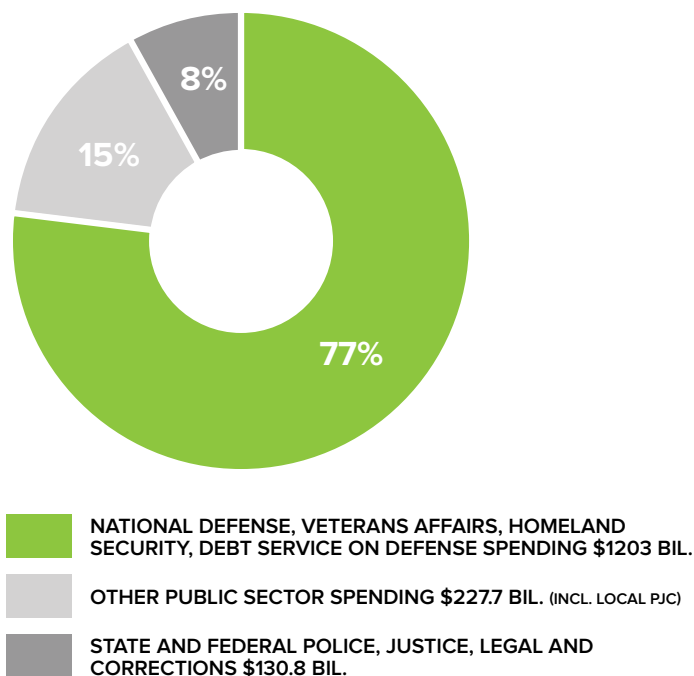


Figure four National Defense, Veteran Affairs, Homeland Security and Interest on Military Related Debt Dominate Public Sector Violence Containment Spending

Private Sector Composition of Violence Containment

The private sector violence containment figures include private security and private military companies, the major conventional arms and small arms and ammunition industries, victim compensation programs, property loss from violence and vandalism, spending on cyber security and the insurance, legal, medical, and nonprofit sectors dealing with violence containment.

Private sector spending on violence containment has been broken into four main categories of expenditure;

- Household, personal and corporate spending on capital equipment for security;
- General private sector spending on security services;
- Spending on the repercussions or consequences of violence;
- Spending and revenue of private defense and small arms companies.

The methodology for the private sector is outlined in Appendix B.

PRIVATE SECTOR VIOLENCE CONTAINMENT EXPENDITURE

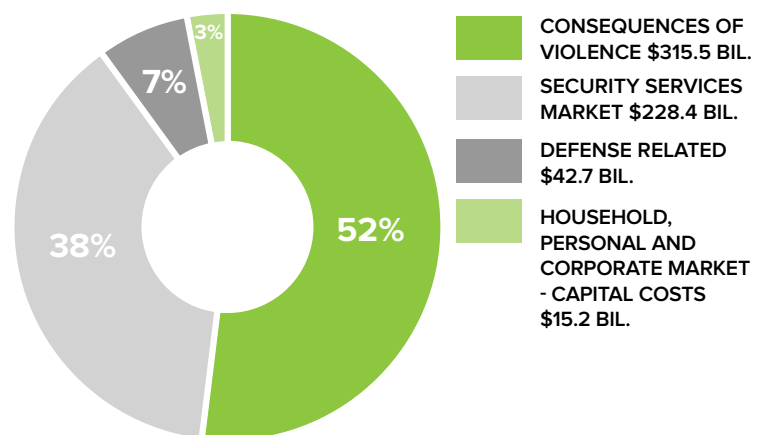


Figure five Composition of Private Sector Spending – the majority of private sector spending deals with the consequences of violence

Hypothetical Case Studies of Reducing Violence Containment

Given that violence containment spending totals 15% of the U.S. economy, the opportunity cost and economic implications of reducing violence are potentially very significant. This is shown in **table three** which illustrates the very substantial amount of money that could be available to spend on other forms of economic production. This illustrates very clearly the enormous fiscal and economic benefits of reducing violence. It can be seen that a 25% reduction in violence containment spending would result in \$390 billion of funds being available to local, state and federal governments for redirection into other potentially more productive areas. Additionally, \$150 billion would be available for the private sector.

Table three Total Additional Public Funds and Private Sector Money from Reductions in Violence Containment

% Reduction	% of 2010 GDP	Additional Money in the Economy (Bn)	Additional Public Funds for Local, State and Federal Government (Bn)	Approximate Money the Private Sector Could Direct into Other Expenditure (Bn)
No reduction	15.0%			
5% reduction	14.2%	108.26	78.0	30.2
10% reduction	13.5%	216.53	156.1	60.5
15% reduction	12.7%	324.79	234.1	90.7
20% reduction	12.0%	433.06	312.1	120.9
25% reduction	11.2%	541.32	390.2	151.1
30% reduction	10.5%	649.58	468.2	181.4
35% reduction	9.7%	757.85	546.3	211.6
40% reduction	9.0%	866.11	624.3	241.8
45% reduction	8.2%	974.38	702.3	272.1
50% reduction	7.5%	1082.64	780.4	302.3
55% reduction	6.7%	1190.90	858.4	332.5

Because the federal government accounts for the great majority of violence containment spending at 72%, it is useful to estimate the impact of possible reductions in this expenditure. Federal spending¹⁹ in 2010 on violence containment is calculated at \$1,304 billion in total, or approximately 9% of GDP.

Federal expenditure has expanded in the past ten years increasing by 25% in real terms. **Table three** demonstrates that if total federal violence containment had remained at the same percentage of GDP that it was in 2001, the federal government would have been able to save approximately \$326 billion from its 2010 budget which could be used on other investments, to reduce debt, or provide tax cuts to stimulate the economy.

Table four What if Just Federal Government Violence Containment Spending was Lower?

% Reduction	Expenditure US\$ (Bn)	% of 2010 GDP (Figures from OECD)	Federal Government Savings US\$ (Bn)
No reduction	1304.90	9.0%	
5% reduction	1239.66	8.6%	65.25
10% reduction	1174.41	8.1%	130.49
15% reduction	1109.17	7.7%	195.74
20% reduction	1043.92	7.2%	260.98
25% reduction close to 2001 levels ²⁰	978.68	6.8%	326.23
30% reduction	913.43	6.3%	391.47
35% reduction	848.19	5.9%	456.72
40% reduction	782.94	5.4%	521.96
45% reduction	717.70	5.0%	587.21
50% reduction	652.45	4.5%	652.45
55% reduction	587.21	4.1%	717.70

¹⁹ Federal Government spending is composed of National Defense spending (including the Department of Defense), Veteran Affairs, Homeland Security, interest payments on national defense debt, federal police, justice, corrections and the Central Intelligence Agency (CIA).

²⁰ In 2001, these components of spending were in the region of US\$644 (in 2001 dollars) or 6.27% of 2001 GDP.

Even small redirections of expenditure could have a meaningful flow on effect. **Figure six** illustrates the growth in violence containment spending as a percentage of GDP. The estimated value of total violence containment spending is shown below.²¹ This demonstrates the growing constraint that violence containment has had on economic productivity. The 2% growth in real terms, while seemingly small, is in fact large when considering it is equivalent to almost \$300 billion of value added 2010 dollars, or greater than the \$288 billion of tax cuts contained in the American Recovery and Reinvestment Act of 2009.

Small increases in violence containment can result in the potential crowding-out of more productive economic activity. To imagine the tangible opportunity cost of violence containment, the reductions identified above can be translated into alternative policy options.

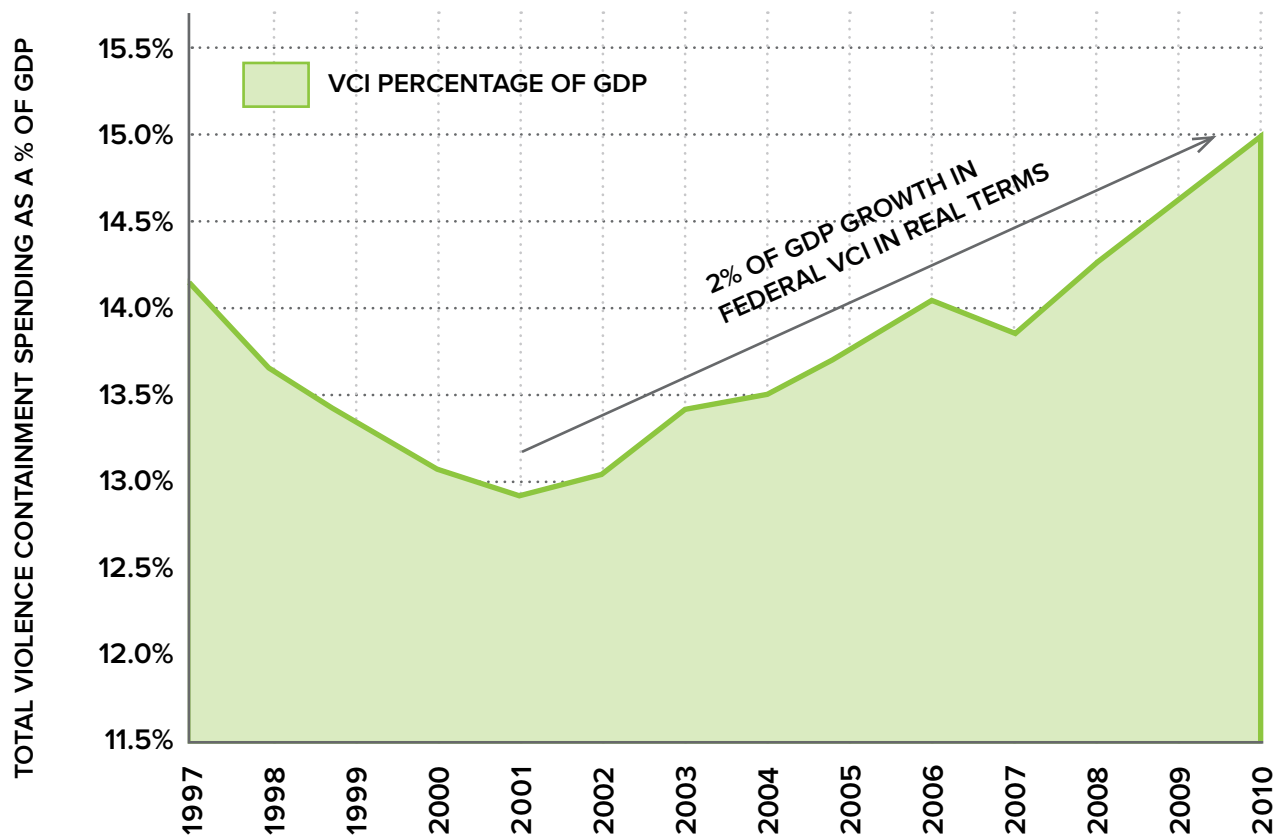


Figure six Violence Containment as a Percentage of GDP has been Increasing

²¹ This uses available data on the increasing size of federal government military outlays and police, justice and corrections spending, while holding private sector and other public sector spending constant. Local Police, Justice, and Corrections spending and other public sector is held constant at 1.06% of GDP and 0.502% of GDP respectively. Private sector VCI held constant at 4.187% of GDP.

Table five is a list of the cost for key infrastructure projects taken from the American Society of Civil Engineers (ASCE). They have calculated the total funding required to adequately update the nations' roads, bridges, rail, mass transit, levees, dams, energy, water, and waste networks.²²

Even modest reductions of 5% or 10% would result in significant investments in updating the U.S.'s system of levees, energy infrastructure, and inland waterways. Spending on levees could significantly increase protection for flood prone areas, while investments in energy networks could clear transmission bottlenecks and protect against productivity inhibiting power blackouts and outages.²³

% Reduction in Federal Violence Containment Spending	Money Accrued in 1 year that could be Redirected into Other Expenditure	Infrastructure Opportunity Cost	Current Federal Budget Allocation over Five Years	Current Estimated Budget Shortfall over Five Years
5% reduction	\$65.3 Billion	Fund the necessary \$50 Billion for updating the nation's system of levees	\$1.1 Billion	\$48.9 Billion
10% reduction	\$130.5 Billion	Fund the necessary \$75 Billion for updating energy infrastructure and the \$50 Billion for updating the nation's inland waterways	\$74.9 Billion	\$50 Billion
15% reduction	\$195.7 Billion	Fund the necessary \$160 Billion to update the nation's school infrastructure	\$125 Billion	\$35 Billion
20% reduction	\$260.9 Billion	Fund the majority of the \$265 Billion needed to update the nation's transit systems	\$74.9 Billion	\$190.1 Billion
25% reduction close to 2001 levels	\$326.2 Billion	Fund one-third of the total \$930 Billion needed to update the nation's roads	\$380.5 Billion	\$549.5 Billion
25% reduction of federal VC in one year		\$326.2 Billion	\$656.4 Billion	\$873.5 Billion
Savings generated from 25% reduction in federal VC over five years		\$1631 Billion	Total Required \$1529.9 Billion	

The opportunity is highlighted when the savings from one year of a 15% reduction in federal government spending on violence containment would be enough to fully fund the updating of the nations' school infrastructure over a five year period. Notably, these scenarios do not take into account the longer-term productivity boost that would flow from these various investments.

Table five Infrastructure Investments which Could be Made with Redirected Federal Violence Containment Spending

²² American Society for Civil Engineers (ASCE) <http://www.infrastructurereportcard.org/>

²³ Ibid

03

RESULTS & FINDINGS

An alternative method of understanding the opportunity cost is in terms of job creation. Using research from Pollin & Garrett-Peltier²⁴ which analyzed the employment effect of military and domestic spending priorities, it is possible to conduct an indicative analysis of the effectiveness of military or violence containment spending versus federal government spending in other areas on job creation. This approach looks at the effectiveness of \$1 billion of federal government spending on the military versus money

spent in other areas, such as education and tax cuts for personal consumption. By applying the results of this input-output model to associated reductions in violence containment spending, it is possible to create indicative figures of the effect on unemployment by diverting federal expenditure to other forms of spending.

This is shown in **table six**, below.

% Reduction in Violence Containment Spending	Money that could be Redirected into other Expenditure (Bn)	Job Effect of Directing VCI reduction into Tax Cuts for personnel consumption (Number of Jobs)	Job Effect of Directing VCI reduction into Education (Number of Jobs)	Average Number of Jobs created by channelling VCI reductions equally into tax cuts and education	New Unemployment Rate*
5% reduction	54.68	174,976	956,900	565,938	8.14%
10% reduction	109.36	349,952	1,913,800	1,131,876	7.78%
15% reduction	164.04	524,928	2,870,700	1,697,814	7.41%
20% reduction	218.72	699,904	3,827,600	2,263,752	7.04%
25% reduction close to 2001 levels	273.40	874,880	4,784,500	2,829,690	6.67%
30% reduction	328.08	1,049,856	5,741,400	3,395,628	6.30%
35% reduction	382.76	1,224,832	6,698,300	3,961,566	5.94%
40% reduction	437.44	1,399,808	7,655,200	4,527,504	5.57%
45% reduction	492.12	1,574,784	8,612,100	5,093,442	5.20%
50% reduction	546.80	1,749,760	9,569,000	5,659,380	4.83%
55% reduction	601.48	1,924,736	10,525,900	6,225,318	4.47%

*based on December 2011 unemployment figure of 8.5%

Table six Job Effect of Redirecting Related Violence Containment Spending into Tax Cuts or Education²⁵

²⁴ Pollin & Garrett-Peltier (2009) The U.S. Employment Effects of Military and Domestic Spending Priorities: An Updated Analysis, Political Economy Research Institute (PERI) University of Massachusetts. http://www.peri.umass.edu/fileadmin/pdf/published_study/spending_priorities_PERI.pdf

²⁵ Table six shows a simple static application of the results of the Pollin & Garrett-Peltier study with several key assumptions. Because Veteran Affairs employment and economic activity is qualitatively different to that modeled in the military, it has been excluded. It has been assumed that Homeland Security, interest payments and military expenditure have the same effects on employment as that directly spent on the military.

As can be seen, transferring spending into tax cuts and education creates more jobs per \$1 billion of investment than violence containment spending.²⁶ Tax cuts for personal consumption have a smaller effect than education. Both scenarios also create jobs of equal or higher average wages. While military spending is generally labor intensive, it does not result in the same level of indirect job creation and results in lower levels of domestic spending.

On average, military personnel spend only 43% of their income on domestic goods and services, compared to 78% for the civilian population.²⁷

A reduction in violence containment to early 2000 levels would yield a 25% reduction in expenditure. Based on the preceding table this would result in 2.8 million more jobs and a lowering of the unemployment rate from the December 2011 level of 8.5% to 6.67%. This is a significant opportunity for policymakers and business.

% Reduction	New Unemployment Rate Based on December 2011 Unemployment Rate of 8.5%	% Reduction in Unemployment
No change	8.50%	0%
5% reduction	8.14%	4%
10% reduction	7.78%	9%
15% reduction	7.41%	13%
20% reduction	7.04%	17%
25% reduction close to 2001 levels	6.67%	22%
30% reduction	6.30%	26%
35% reduction	5.94%	30%
40% reduction	5.57%	35%
45% reduction	5.20%	39%
50% reduction	4.83%	43%
55% reduction	4.47%	48%

Table seven Reductions in Violence Containment Spending, if Channeled into Education and Tax Cuts will Reduce Unemployment

²⁶ The basic data for the input-output tool used in this analysis is taken from the U.S. Department of Commerce and takes account of three factors; (1) direct effects, that is the direct jobs created by such investment (2) indirect effects, the jobs associated with the industry that supply the intermediate goods associated with the industry and (3) induced effect, which is the expansionary effect resulting from people spending wages earned from their work. Differences in output between industries arise because of varying labor intensity, domestic content and average wages per worker.

²⁷ Pollin & Garrett-Peltier (2009) The U.S. Employment Effects of Military and Domestic Spending Priorities: An Updated Analysis, Political Economy Research Institute (PERI) University of Massachusetts.

Figure seven shows the impact on the unemployment rate in the U.S. of shifting government spending away from violence containment and into education spending and tax cuts, assuming that all other factors are held constant. Halving federal government Violence Containment spending and then spending these savings on either education or tax cuts would reduce the unemployment rate by almost four percentage points in the medium term, from 8.5% in December 2011 to 4.83%.

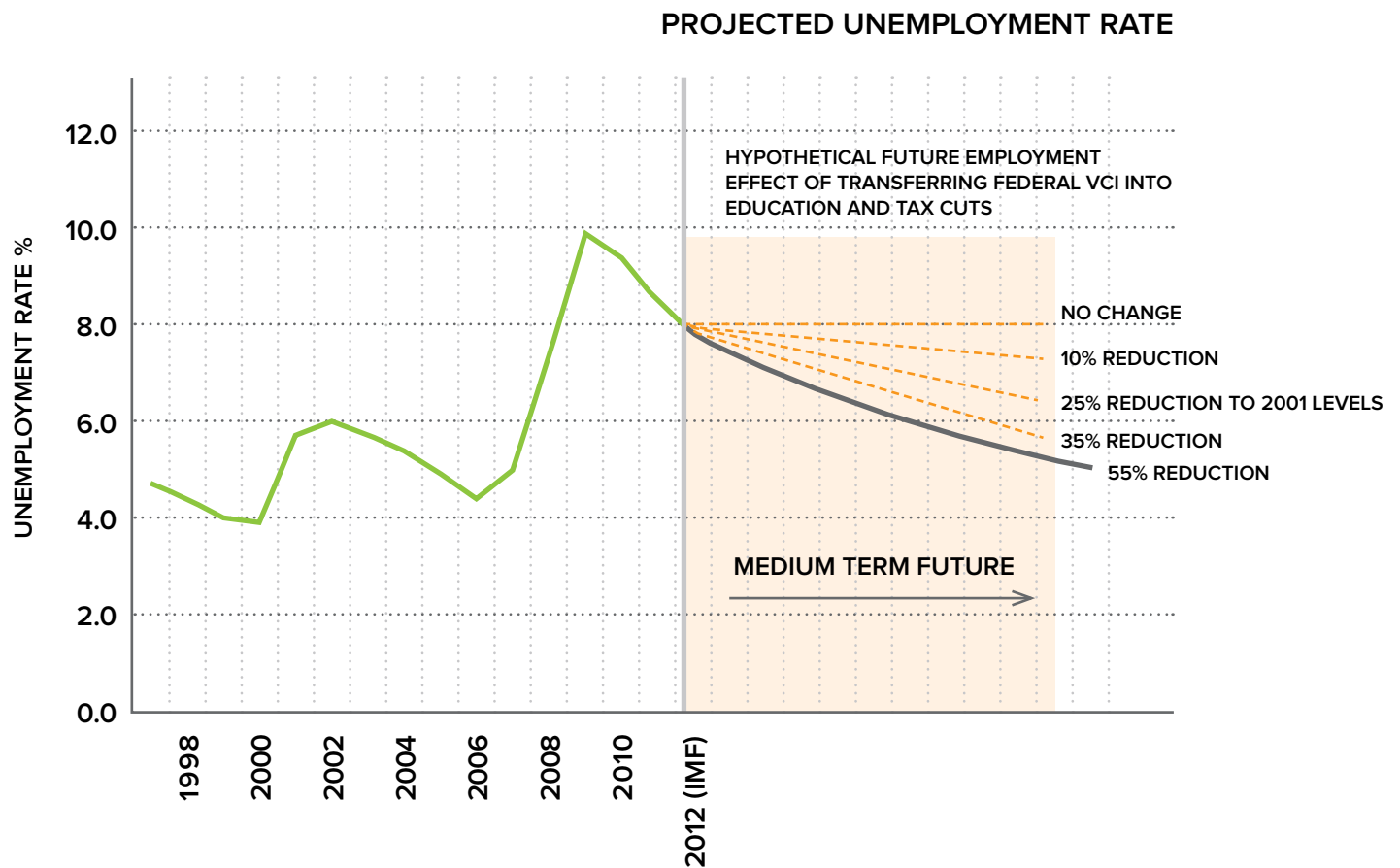


Figure seven Effect of Transferring Federal Violence Containment Spending into Education and Tax Cuts

Figure eight shows the virtuous cycle of violence reduction and Violence Containment reduction. Reducing government Violence Containment spending allows for increased investment in education, healthcare and jobs programs. Improvements in these areas are closely correlated with improved productivity, economic growth, and subsequently violence

reduction. This reduction in direct violence lessens the need for Violence Containment, which in turn decreases the need for government violence containment spending, thus allowing for additional cuts in violence related spending, and further investments in infrastructure, tax cuts, and other government programs.



Figure eight The Virtuous Cycle of Violence Reduction and Violence Containment Reduction

CONCLUSION

This report has outlined a conservative and indicative analysis of the size of private and public sector spending on violence containment in the United States.

The research found that violence containment spending in the U.S. is 15.0% of GDP or \$2.16 trillion of the \$14.4 trillion 2010 U.S. economy. The U.S. VCI is slightly smaller than the entire UK economy, and equivalent to over \$7,000 for every man, woman and child, or approximately \$15,000 for every American taxpayer. If the federal government's violence containment spending was reduced by 25% to the same level as it was in 2001 and the remaining funds channeled into national infrastructure investment then the total funding requirements for rebuilding levees, inland waterways, school infrastructure, roads and mass transit systems would be secured in five years. This demonstrates that small reductions in federal violence containment spending, if appropriately redirected, can potentially reap notable benefits.

The \$2.16 trillion spent on violence containment represents a large portion of the nations' economic activity. Clearly, these forms of economic activity are necessary, however if the need for these activities can be lessened, new and additional economic activity can be generated. Violence and violence containment is costly, not only in static terms as a percentage of current income, but also because of the lost future growth from investments in more productive activities.

Just as we would look critically at other forms of government spending or the composition of spending on a company's balance sheet, violence containment spending can and should be analyzed for its efficiency and effectiveness. Better accounting standards to accrue for violence containment would allow governments and policymakers to focus on cost effective programs to reduce violence, thereby increasing the amount of money available to invest in building the economy.

While the U.S. has become more peaceful in the last twenty years, international comparisons show that in almost every measurable category of violence the U.S. lags behind most other OECD nations. The sheer size of spending on violence containment very clearly illustrates the enormous economic and social opportunities associated with peace.



APPENDIX A

Public Sector Methodology Overview

Table eight Total Public Sector Spending

Item Number	Public Sector	US\$ (bn)	% of GDP
1	National Defense, Veterans Affairs, Homeland Security, and debt service		
1.1	Federal	1203.00	8.153%
2	Police, Justice & Legal, Corrections (PJC)		
2.1	Federal	47.40	0.321%
2.2	State	83.40	0.565%
2.3	Local	Counted below	Counted below
2	Sub-Total PJC, not including local	130.80	0.892%
3	Other Public Sector Security Spending		
3.1	Federal (National Intelligence Program – i.e. CIA)	53.10	0.360%
3.2	Federal (United States Maritime Administration, Department of Transport)	0.41	0.003%
3.3	State (State VA departments and State National Guards)	4.35	0.029%
3.4	Local PJC + Counties/Cities spending on security	154.00	1.044%
3.5	Fire (Arson)	0.34	0.002%
3.6	Public Schools (Universities and Schools)	13.20	0.089%
3.7	Critical Infrastructure (Port Authority Security)	1.00	0.007%
	Total Other Public Sector Spending	226.4	1.568%
	Total Public Sector	\$1560.2	10.800%

Item 1

For federal expenditure, the U.S. federal government budget is not necessarily the best data source, because the distribution of military-related expenditure is spread across many agencies such as the Departments of Defense, Energy, and Veterans Affairs. Instead, the National Income and Product Accounts (NIPA) produced by the Bureau of Economic Analysis (BEA), an agency of the Department of Commerce has been used.²⁸ NIPA reassigns each federal government budget item from budgetary categories into economic categories such as defense and non-defense. Additional figures were obtained from the Department of Veterans Affairs and the Department of Homeland Security as BEA does not consider these to be defense functions.²⁹ Additionally, the interest payments associated with government borrowing for military outlays is counted. For federal government defense spending, IEP has used the BEA NIPA figure for 2010 and added to this the budgets of the Department of Veterans Affairs, the Department of Homeland Security, as well as the relevant portion of interest payments on the federal debt.³⁰ The 2010 expenditure is \$1,203 billion.

Item 2

Data for the total justice function, including police, justice, legal and corrections (PJC) for the federal, state, and local governments is available for 1982 to 2005 from the Bureau of Justice Statistics (BJS).³¹ In 2005, this was \$213.7 billion. A simple linear regression was used to project the figure to 2010 and comes to \$246.9 billion. These two items (items 1 and 2) add up to \$1,464 billion in 2010 or approximately 10% of GDP.

Item 3

IEP has also calculated other public sector expenditure which has not been included in the first two categories under the heading "Other Public Sector Security Spending". This has been broken down into three separate areas of federal spending which are not included in the national defense line item. These include the budget for the National Intelligence Program (NIP), which includes the Central Intelligence Agency (CIA)³², and United States Maritime Administration (MARAD)³³ whose budget resides in the Department of Transport. To calculate the state government's expenditure for Veterans Affairs and the National Guard a sample of 17 state budgets were analyzed and extrapolated across the 50 states.³⁴ The total expenditure for Veterans Affairs and the National Guard is \$4.35 billion.

Item 3.4, is the estimate of local government expenditure on violence containment. To determine the final figure, three cities were selected; estimates made, and the results extrapolated across all fifty states. The three cities were Austin, Texas; Seattle, Washington and New York, New York. These were included because of the spread of the cities in which the states are situated on the U.S. Peace Index. Washington State is ranked 10th, New York is ranked in the middle, at 29th and Texas in the bottom ten at 45th. These cities are representative of major cities in their relative peacefulness.

Appendix C, item 2 provides a detailed overview of the costing methodology for local city and county level spending for violence containment. This includes equipment, services and resources that local and county governments purchase to prevent and protect against violence. Examples of some of these items are security equipment for town mayors, offices of the comptroller and various city bureaucracies such as the District Attorney and Transportation, Sanitation and Environmental Protection departments. Due to the enormous accounting process that would be required to add up all line item expenditures in every single county and city budget, IEP has extrapolated average expenditure for the three cities cited in the prior paragraph to arrive at a reasonable and conservative estimate of the nation's county and local government expenditure on violence containment. These three cities spend on average \$740 per head on violence containment,³⁵ assuming that New York, with its unique security issues skews the average upwards, a more conservative average would be say, \$500 per head, which extrapolated to the national level equates to \$154 billion in city level spending. More detail is contained in item 2 of Appendix C.

Also included in table three is line item 3.5 which estimates the government costs associated with intentionally set fires. According to the Federal Emergency Management Agency (FEMA), up to 13% of fires are intentionally set, for which a fixed ongoing yearly cost to government can be attributed.³⁶ This is \$334 million per year.

Item 3.6 estimates university spending on violence containment. IEP has used currently available university data to calculate a 'per student spending' rate of \$200 per student, per year.³⁷ Budget data was obtained from various university

institutions through their budget reports and the number of students studying at these institutions. Using these two numbers, IEP calculated how much is spent on safety and security per university student. 'University student' includes both undergraduates and postgraduates. Using these figures, the 'average spend' per student for safety and security was calculated. This average was then multiplied by the total number of public education students, both school and university to obtain the total average spending in the U.S. for safety and security for students. The U.S. Census reports that approximately 66 million students attend public education institutions and include all students from kindergarten to university. Given that the average cost of \$200 per student the total expenditure amounts to \$13.2 billion or 0.09% of GDP.

The decision to separate education and critical infrastructure violence containment spending from the broader categories of government spending is primarily the result of the prevailing budget methodology adopted by various governments. As mentioned above, most school districts and departments of education are independent entities with their own budgets. Additionally, public colleges and universities receive federal, state, and local funding but their budgets do not always appear in the departmental documents of these governments. Although there are a few exceptions to this method, pulling education data out of the broader level categories allows for more systematic collection and better comparisons across cities, states, and institutions.

Item 3.7, critical infrastructure is defined as assets which are considered "so vital to the United States that their incapacity or destruction... would have a debilitating impact on security, national economic security, national public health or safety, or any combination of these matters."³⁸ Examples of these assets include bridges, tunnels and airports, as well as nuclear reactors, agricultural and manufacturing facilities, dams, monuments, public water and energy sources, and information technology infrastructure, among others.

While the DHS is ultimately responsible for protecting these critical sites many other organizations have expenditures related to the security of these types of installations. Tracking and reporting on their expenditures is difficult and other than the Port Authority of New York and New Jersey these expenditures have not been included. The Port Authority of New York and New Jersey has been included because of the sheer size of its expenditure on security and because of their well laid out accounts.

In 2010 the NY NJ Port Authority spent nearly \$1 billion on violence containment. The total spending on security represents nearly 15 percent of the Port Authority budget, the majority of which is funded by operating revenues from six airports, two rail systems, the World Trade Center site, and numerous port commerce facilities, terminals, and tolled tunnels and bridges.

To further enhance the accuracy of future studies, determining the overall national expenditure on protecting national infrastructure rather than using one vital city, would be important.

²⁸ Sources: Economic Report of the President and obtained from ERP's underlying sources, e.g., <http://www.bea.gov>

²⁹ According to a telephone interview on 6 July 2011 with Benjamin A. Mandel at the Bureau of Economic Analysis, only in 2009 and 2010 were "very small" portions of the DHS budget categorized into the NIPA "defense" rubric.

³⁰ The interest calculation is based on calculating the portion of National Defense Consumption as a proportion of total federal government consumption and investment expenditure. The resulting percentage is then applied to net interest payments and added to the total federal violence containment figure.

³¹ Source: These data were extracted from the Census Bureau's Annual Government Finance Survey and the Annual Survey of Public Employment, Bureau of Justice Statistics <http://bjs.ojp.usdoj.gov/>

³² The National Intelligence Program is under the budgetary control of the Office of the Director of National Intelligence (DNI) and is funded separately from the Department of Defense. This number was obtained from the DNI website http://www.dni.gov/press_releases/20101028_2010_NIP_release.pdf Accessed 19 Sept 2011.

³³ MARAD is an agency of the United States Department of Transportation that maintains the National Defense Reserve Fleet (NDRF), assisting the NDRF in fulfilling its role as the nation's fourth arm of defense, logistically supporting the military when needed.

³⁴ See Appendix C, Item 1 for full details on costing methodology.

³⁵ The breakdown of each city's spending is shown in Appendix C, item 2.

³⁶ See Appendix C, Item 3 for full details on costing methodology

³⁷ Appendix C, Item 4 for full costing methodology

³⁸ Guarding America: Security Guards and U.S. Critical Infrastructure Protection, CRS Report for Congress

APPENDIX B

Private Sector Methodology Overview

A conservative approach was adopted for the private sector because of the methodological challenges associated with the potential of double counting of private expenditures which is discussed in more detail in Appendix D, Methodological Notes. Due to the lack of data on the size of the value added contribution in many of the sectors either revenue or expenditure has been used when appropriate. Accounting difficulties also make it hard to disentangle odd occasions of double counting.

However, unlike the figures for the public sector, the resulting numbers for the private sector can only be expressed as indicative percentages of GDP. In light of this, IEP has applied a very conservative approach and has minimized the potential of double counting. It is therefore likely there are many areas of expenditure that have been left out. On this basis, IEP has calculated the private sector spending on violence containment at \$601.82 billion or 4.17% of GDP.

Table nine Private Sector Spending on Violence Containment

Item Number	Private Sector	US\$ (bn)	% of GDP
1	Household, Personal and Corporate Market - capital costs		
1.1	Household Security Market and Spending (locks, car alarms, safes, biometrics) [†]	15.19	0.105%
2	Security Services Market		
2.1	Estimated size of private sector spending on private security services [‡]	87.40	0.605%
2.2	Cyber Security Market [‡]	130.00	0.900%
2.3	Security Sector Training companies (incl. Self-Defense classes) [‡]	11.00	0.076%
3	Consequences of Violence		
3.1	Victim Compensation Programs [‡]	0.46	0.003%
3.2	Property loss from intentionally set fires ^{**}	0.67	0.005%
3.3	Mental Health Care and Welfare Services ^{**}	27.81	0.192%
3.4	Private legal (e.g., in-house corp. counsel) ^{**}	25.00	0.173%
3.5	Medical Costs of Violent Crime ^{**}	24.81	0.172%
3.6	Repair/restoration – Vandalism ^{**}	48.00	0.332%
3.7	Non-profit sector - Violence containment related [‡]	82.10	0.568%
3.8	Insurance (net premiums written - assumed VCI component 25%) ^{**}	106.55	0.738%
4	Private Defense		
4.1	Defense Contractors - Military Exports [‡]	37.20	0.257%
4.2	Small Arms Manufacturing (non-military) ^{**}	5.00	0.035%
4.3	Ammunition Sales [‡]	0.50	0.003%
Total Private Sector		\$601.70	4.165%

Private sector counting classification

[†] Item counted/estimated by sales revenue

[‡] Item counted/estimated by wages

^{*} Item has been imputed

^{**} Item estimated from income and expenditure

Item 1 – Household, Personal and Corporate Capital Costs

Item 1 accounts for the total of household, personal and company expenditure on capital costs for security equipment such as locks, alarms, fences and other equipment such as body armor. The size of this private sector spending is estimated to be in the region of \$15.19 billion or 0.105% of GDP per year. Appendix C, item 5 shows in more detail the full breakdown of how these figures were derived.

Item 2 – Security Services Expenditure

Today, private security companies (PSCs) are the most visible part of the private security industry and include companies which provide security guards, training, monitoring services, equipment, tools, and supplies as well as associations and publications related to violence containment. These are aimed primarily at the prevention or containment of violence. While the private security industry also deals with the response to and the aftermath of violence, including emergency responses, other aspects such as insurance payments, private legal work on violence-related cases, medical and rehabilitation services, property repair are also included. These ancillary functions have been divided into separate line items.

- Item 2.1 accounts for the size of private security companies' contribution to economic activity. The estimates of the total market value of the private security industry in the U.S. range from \$17.44 billion to \$60.7 billion. The World Security Association reports the existence of almost 100,000 private security companies (PSCs) with about 10 million security guards employed worldwide, and about 1.5 million in the Americas.³⁹ The U.S. Bureau of Labor Statistics reports that "security guards and gaming surveillance officers held 1.1 million jobs in 2008."⁴⁰ These numbers differ drastically from the Small Arms Survey 2011 report which states 2 million people are employed by private security corporations in the U.S. This compares to 20 to 25 million employees worldwide. For further information on the method for the final figure, refer to Appendix C, item 6.
- Item 2.2 covers one of the fastest growing areas of security expenditure which is in protection against forms of cyber-crime. Increasingly cyber-crime is seen as a threat to national security as well as to company profits and individual privacy. As commerce has increasingly become online, criminal activity has also shifted online. All forms of cyber-crime fit under the violence containment definition. This includes cyber-based terrorism, computer intrusions, online sexual exploitation, and major cyber frauds. Item 2.2 uses research from the Ponemon Institute⁴¹ which shows U.S. companies alone are projected to spend \$130 billion in 2011 on security against cyber-crime or dealing with the effects or cyber-crime. This estimate does not include lost productivity from cyber-crime.
- Item 2.3 attempts to account for the total size of the self-defense training market. This includes private sector spending on various self-defense classes, such as martial arts and women's self-defense classes, but also private security guard and investigator training and schools and childhood education programs. Using various assumptions on spending, an indicative number of \$11 billion was used to estimate the contribution of this sector.⁴² Undoubtedly this includes some aspects of the leisure industry as well; hence the conservative number in light of some of the large industry based assessments mentioned in item 14 of Appendix C.

Item 3 – Consequences of Violence

This category is aimed at capturing many of the items not covered in other items such as arson, welfare services or victim compensation.

- Item 3.1 is sourced from Victim Compensation Programs⁴³ which is estimated by the National Center for Victims of Crime to be in the region of \$446 million per year.
- Item 3.2 uses research from the National Fire Protection Association (NFPA) that calculated the total value of property lost from fire at over \$11.5 billion.⁴⁴ This reports that intentionally set fires of structures cost \$585 million and intentionally set fires of vehicles cost \$89 million, reaching a total in the region of \$674 million. However, another source from FEMA on intentionally set fires⁴⁵ lists the cost of intentionally set fires at \$1 billion per year. IEP takes the lower estimate, assuming a certain proportion would be covered in insurance expenditures which are already counted.
- Items 3.3 and 3.5 cover medical costs related to violence and include mental health care and welfare services for children who have suffered from abuse, as well as the medical costs of assault. These have a combined economic cost of over \$50 billion. These costs have been sourced from an economic analysis from the organization Prevent Child Abuse of America and IEP's 2011 U.S. Peace Index economic costs of crime which are itemized in Appendix C item 8. To some extent these costs may also be accounted for by non-profit organizations which are a separate line item on 3.7, to account for this the costs have been revised down to eliminate double counting.
- Item 3.4 covers legal costs related to violence and is sourced from a Harvard law school analysis of the legal and law profession which estimates law firms and solo practitioners (excluding profits earned from government) earned \$180 billion in revenues in 2003. The magnitude of this spending is confirmed in the North American Industry Classification System (NAICS) system which listed "legal services" as amounting to \$219.2 billion, or 1.6 percent of U.S. GDP on latest 2010 NAICS data.⁴⁶ Using data from the Federal Judicial Caseload statistics on percentage of the caseload related to IEP's violence containment definition, a conservative and indicative figure of \$25 billion was derived to be estimated as violence containment legal spending.⁴⁷
- Item 3.6 is listed as a separate line item under repair and restoration related to the vandalism of private property. Based on research from the U.S. Small Business Association the average cost of vandalism is \$3,370 per incident, per year. When multiplied by the number of businesses that have experienced an incident then the total cost equals \$48 billion each year.⁴⁸ This number is conservative as some businesses experience more than one incident per year.

³⁹ See <<http://www.worldsecurityfederation.org/site/numerosSetor.aspx>> [accessed 13 July 2011].

⁴⁰ Quote from <<http://www.bls.gov/oco/ocos159.htm>> [accessed 27 July 2011].

⁴¹ Ponemon Institute conducts independent research on privacy, data protection and information security policy. <http://www.ponemon.org/index.php>. Further detail on cyber-crime costing in Appendix C, item 13.

⁴² For more detail please see Appendix C, item 14.

⁴³ Appendix C, Item 7.

⁴⁴ Fire Loss in the United States During 2010, (Karter, M) 2011, National Fire Protection Agency, URL <http://www.nfpa.org/assets/files/pdf/os.fireloss.pdf>

⁴⁵ FEMA, Topical Fire Report Series, Intentionally Set Fires, Volume 9, Issue 5 / November 2009 URL: <http://www.usfa.fema.gov/downloads/pdf/statistics/v9i5.pdf>

⁴⁶ http://www.bea.gov/industry/gdpbyind_data.htm

⁴⁷ More detail on legal costings methodology in Appendix C, item 10.

⁴⁸ More detail on vandalism costings in Appendix C, item 11.

Item 4 – Private Defense

- Item 3.7 covers the portion of the non-profit sector that deals with the consequences or prevention of violence and includes some government expenditure such as the work of 'Mayors Against Illegal Guns' or the 'Brady Campaign to Prevent Gun Violence'. Additionally, expenses of organizations providing shelter for victims of domestic violence have been included. According to the Internal Revenue Service (IRS) of the U.S. Department of the Treasury, in 2010 there were about 1.8 million recognized tax-exempt organizations.⁴⁹

Data from the Urban Institute's National Center for Charitable Statistics (NCCS) provides details on the gross receipts received for various categories of non-profit organizations. Unfortunately data is not available for expenditure broken down by NGO type. While receipts do not equal expenditure, investigation of NCCS data shows receipts are very close to expenditures for the NGO sector and expenditure is categorized by NGO type. Categories which have been included in the estimate are organizations working in international security, national security, crime and legal, military and Veterans Affairs, mental health and crisis intervention, family violence shelters, and victim shelters. Using only gross receipts as the basis for the calculation the estimate shows non-profit organizations violence containment expenditure is in the region of \$82.1 billion.⁵⁰ This is equivalent to 30% of total NGO value added figure of \$277 billion in 2010.

- Item 3.8 covers another significantly large area of violence containment spending, which is related to payments of insurance premiums and claims against violence. This also includes private sector legal work to prepare and follow-through on cases, medical and rehabilitation costs in the case of injury or death to persons, and repair and restoration cost in the case of damage to property. Legal, medical, and repair costs are counted only to the extent that they are not already captured by public or private sector insurance or other payments. According to the Insurance Information Institute, property and casualty net premiums written (net, after reinsurance costs) in 2010 in the U.S. amounted to \$426.2 billion. An additional \$581.2 billion was written for life and health insurance, some of which would be related to violence containment, for example for life insurance and medical costs.⁵¹ "Premiums written" refers to premium over the life of the contract, not necessarily to single-year premiums earned although it appears that most of the sum accrues to the year in which the premium is paid.

It should be noted it is not possible to fully account for this figure as the full cost can only be understood by analyzing insurance policies and individual insurances in greater detail. The objective would be to take out categories of insurance such as 'Earthquakes' and then attempt to apportion reduced weight to categories such as 'Fire' – which could be deliberate or accidental. The final number is likely to be higher once other factors such as terrorism are included.⁵²

Working with an assumption that 25 per cent of the net premiums written in 2010 are related to violence or violence containment, we estimate that \$106.55bn in insurance costs can be attributed to the VCI. Refer to Appendix C, item 15 for detailed costing methodology.

Item 4.1 to 4.3 lists industries related to the private defense market, principally military exports from large defense contractors and small arms manufacturers. These figures were compiled from sales revenue and are only indicative of the value added component.

- Item 4.1 analyses the size of military exports from defense contractors. While the effect of these violence containment expenditures are felt overseas, the revenues private defense contractors receive from abroad must be counted as additions to U.S. GDP. Based on analysis of annual reports from the top seven exporters of defense materiel. Military exports in 2010 reached \$37.2 billion or 0.25% of GDP. This is somewhat in contradiction to the value of foreign sales as measured by SIPRI. According to SIPRI's "trend indicator value" (TIV) series, U.S. producers of major conventional weapons amounted to about \$8.6 billion in 2010.⁵³ Refer to Appendix C item 16 for detailed costing method used by IEP.
- Item 4.2 and 4.3 covers U.S. firearms and ammunition sales. The Small Arms Survey 2010 calculated the net value added of the ammunition trade at about \$60 million. The Small Arms Survey 2009 estimates the average annual small arms exports for 2000 to 2006 to be less than \$300 million, the majority of which are military small arms and may have already been captured in the public sector estimates. The value of imports was netted out.

Brauer estimates for 2009 approximately 5.2 million firearms were produced domestically, while 3.2 million small arms were sold abroad, suggesting that 2 million handguns and long-guns were newly produced and purchased in the United States alone. If the average firearm is purchased for \$500, the GDP-value for these arms would be \$1 billion.

It is assumed 8.4 million second hand firearms change hands each year which, at \$500 each would represent purchasing power of \$4.2 billion. Combining this with the approximate value of the new guns market allows one to impute a total figure in the region of \$5 billion.

⁴⁹ In the United States, Internal Revenue Service Form 990 provides this information and is publicly available for tax-exempt organizations. More detail on how IEP derived the final figure is in Appendix C, item 12.

⁵⁰ It is acknowledged many non-profits may derive funding from government, which if included as line items in defense, veterans affairs or homeland security would be double counted here. It is assumed most money listed in this line item would nonetheless represent an extraction from the private sector via corporate donations. A large accounting process would need to be undertaken to separate out monies from local, state and federal governments given to VCI non-profits. More detail in Appendix C, item 12.

⁵¹ See <<http://www2.iii.org/insurance-fact-book/us-insurance-industry-all-sectors/premiums.html>> and <<http://usa.marsh.com>>. An online subscription, free of charge, is needed to access market reports [accessed 25 July 2011].

⁵² Under the Terrorism Risk Insurance Act (TRIA) of 2002, insurance companies must offer clients a terrorism-risk insurance option. A 2009 paper surveying 1,808 "large" firms nation-wide, all clients of Marsh & McLennan, a prominent insurer, found that 1,064 (about 6 in 10) purchased some kind of TRIA insurance in 2007. For 628 of these firms, sufficient data was available to say that the average premium paid that year was US\$11,963.

⁵³ See SIPRI online data base at <<http://armstrade.sipri.org/armstrade/page/toplist.php>> [accessed 25 July 2011]. SIPRI provides explicit warning that these are not necessarily financial values. For instance, arms may be purchased and transferred via grants or loans made by the U.S. government to foreign powers. Loans made may be forgiven at a later point in time. Thus, the value of the transfer may already be included in the Department of Defense and other estimates of the public sector. But even if the entire US\$8.6 billion sum were pure cash sales by foreign powers from U.S. manufacturers, this would amount to only 0.058 percent of U.S. GDP.

APPENDIX C

Individual Line Item Costing Methodologies

1. State Veterans Affairs and National Guard

Veterans Affairs is administered by both federal and state departments. The federal expenditure is captured under item 1.1. This section accounts for the State Veterans Affairs departments as well as the State National Guards.

The total state expenditure was calculated by analyzing 17 State budgets. A representative sample of 17 states was chosen which include both smaller and larger states from differing geographical locations across the U.S. Since a portion of the state budget is money from the federal level, care was taken to count only the state expenditure and thereby eliminate double counting errors. The average state expenditure was deduced and extrapolated out to the 50 states and is shown in **table ten**. The line item in table ten itemizes total expenditure for both State Veterans Affairs and the National Guard which is \$4.46 billion.

In light of this, IEP has applied a very conservative approach and has minimized the potential of double counting. It is therefore likely there are many areas of expenditure that have been left out. On this basis, IEP has calculated the private sector spending on violence containment at \$601.82 billion or 4.17% of GDP.

Table ten State Veterans Affairs and National Guard spending.

State	Veterans Affairs (US\$, hundred million)	National Guard
California	155.00	157.58
Utah	32.22	N/A
Illinois	121.18	3.75
Kentucky	N/A	N/A
Georgia	N/A	N/A
Arizona	23.00	*included in VA spending
New York	5.00	N/A
Florida	45.52	78.36
Louisiana	23.00	43.00
Nevada	33.16	26.74
Pennsylvania	110.33	*included in VA spending
Virginia	49.92	49.94
Idaho	16.00	1.50
Kansas	10.00	100.00
North Dakota	1.40	25.00
Oklahoma	40.00	3.13
Indiana	1.50	2.75
Total	667.23	491.75
Average Spend per State (US\$ Million)	44.48	44.70
Average Spend Federally (US\$ Million)	2224.10	2235.24
Total	\$4.46 billion	

2. Local Violence Containment Spending

Violence Containment spending at the local county and city level was calculated by examining Seattle, Austin and New York City budgets to get a detailed picture of the type of security spending that occurs for these cities. Total spending was aggregated and then divided by population to sum a per capita cost. This per capita number was then revised down and extrapolated to acquire a number for the entire United States. It is important to note that it includes justice expenditure which in 2005 was \$103 billion. To count city or county spending for each city and town in the U.S. would be an enormous accounting and administrative task, outside of the bounds of this research. This is why indicative figures have been used which are deduced from the three detailed case studies.

Table eleven shows the total violence containment expenditure for the three cities and the per capita amount. As can be seen, the average per capita amount is \$740. However, because the City of New York⁵⁴ has a unique set of security issues it has skewed the average upward. A more conservative estimate of \$500 per person has been used which results in \$154 billion for the entire U.S.

Table eleven Violence Containment Spending for Seattle, Austin and New York.

Item	City	VC Spending	VC Spending per capita
1	Seattle	\$348,504,287	\$572.58
2	Austin	\$317,688,815	\$401.94
3	New York	\$10,189,436,642	\$1,246.39

Counting process for New York

As might be predicted, New York City has both the highest nominal figure and the highest per capita spending rate. This is partially due to the unique security challenges faced by New York City, as an international city and one of the major global financial capitals, as well as the target of the September 11th and other terrorist attacks. However, this finding should not mislead one into assuming that the per capita spending in New York City grossly overinflates our average and therefore the national estimate. The 2010 budget for the City of New York presented the most precise and thorough accounting of violence containment costs, resulting in the most complete picture of any of the cities examined.⁵⁵

The City of New York's budget documentation is an example other cities can follow. It is organized using consistent accounting codes for the expenditures of each city agency and each program of each agency. Included in these codes are lines for security equipment and security services, listed under each department that incurs the expenses. This allows us to include VCI spending from agencies whose primary purpose is not related to violence, and may only incur costs in their attempts to protect their staff and assets. For example, IEP found that the Department of Sanitation's budget for the Executive and Administrative office incurred a \$3,435,815 security equipment expense. Not only does the New York City data include these large expenditures, but the budget reporting also allows us to capture the \$240 spent by Brooklyn Community Board #11. Additionally, regarding programs that are wholly related to violence containment, such as the Police Department, detailed footnotes allowed calculation of the portion of city pensions and fringe benefits attributable to department employees. This level of consistent reporting was not present in Seattle and Austin's budgets, despite their well-presented and detailed documents relative to other cities around the country. This implies that while New York, as the largest city in the U.S., is likely to have the greatest VCI expenditures, however its recording of public city-level spending is the most comprehensive and accurate.

Austin and Seattle

The City of Austin, Texas, with a 2010 population of just under 800,000 spent \$317.7 million or \$402 per person on violence containment.

In 2010 Seattle, Washington, had a population of 600,000 and the city spent a total of \$348.5 million, or 9 percent of its total budget on violence containment.

⁵⁴ In the case of New York the above number did not include agencies similar to the Port Authority of New York/New Jersey, which has its own budget separate from the state and city governments. The VC expenditures of the Port Authority nearly match those of the City of New York, implying that these types of agencies operating major infrastructure around the county may add very significant figures to the VC bottom line.

⁵⁵ It should be noted that Oklahoma City and Chicago were also examined for possible inclusion, however the city documents did not offer data that could be separated according to the necessary categories and made consistent with the other samples.

3. Fire – Arson

One of the causes of damage to property and persons is fire. However, in terms of VCI, not all fires are relevant to the analysis. For instance, whilst bushfires cause millions of dollars' worth of damage, they may have natural non-human causes. Thus, the total expenditure on fire cannot be counted since we would include accidental fires. The U.S. Fire Association (USFA) gives statistics on various categories. Given the definition of violence above, only one category is relevant for our discussion: intentionally set fires. Thus, discounting fires caused by heating, cooking, candles, etc., USFA reports that 13% of fires are intentionally set. Fire departments receive both federal and state funding. Seventeen state budgets were analyzed in a process exactly the same as the one used to calculate state Veterans Affairs and National Guard spending. The average of these 17 states was taken and then multiplied by 50 in order to obtain the total average expenditure. This total was then multiplied by 0.13 in order to account for intentionally lit fires. This provides an approximation of the expenditure on combating intentionally lit fires of \$340 million⁵⁶. Federal funds have been accounted for in the Department of Homeland Security.

4. Security Spending on Students

Three cities were chosen to analyze and then extrapolate the results to provide the total U.S. expenditure on student security costs. To calculate student security costs the research focused on spending in public schools and included primary, secondary and tertiary. This resulted in an approximately \$200 in security costs per student, per year. The total number of students in public education institutions (i.e. schools and universities) was multiplied by the per student cost to obtain the total expenditure on security in public education institutions.⁵⁷ The U.S. Census reports that approximately 66 million students attend public education institutions and include all students from kindergarten to university. Given that the average cost of \$200 per student the total expenditure amounts to \$13.2 billion or 0.09% of GDP.

It should be noted that this method has not included security at private schools as this revenue shows up on the expenditure accounted for in the private security market line item.

Table twelve Security Costs on Average, \$200 per Student, per Year

Item	School	No. of Students	VC Spending	VC Spending per Student
1	NY Public Schools	1100000	\$290,457,937	\$264.05
2	CUNY	480000	\$2,525,984	\$5.26
3	Austin Independent School District	82181	\$9,873,630	\$120.14
4	UTex Austin	50995	\$5,598,666	\$109.79
5	Washington State Uni	26101	\$5,300,000	\$203.06
6	Seattle Pacific University	4092	\$3,534,000	\$863.64
7	Seattle Public Schools	45581	\$9,000,000	\$197.45

⁵⁶ U.S. Department of Homeland Security, National Fire data Center, TFRS Volume 9, Issue 5/ Intentionally set fires URL <http://www.usfa.dhs.gov/downloads/pdf/statistics/v9i5.pdf>

⁵⁷ Census Bureau, Table 215. School Enrollment: 1980 to 2019 URL: <http://www.census.gov/compendia/statab/2011/tables/t1s0216.pdf>

5. Household Market for Security Equipment

Table thirteen Indicative Size of Household Market for Security Equipment

Item	Type	Number	Cost	Total	Base Reference
1	Security Cameras	30,000,000	\$1000	\$3,000,000,000	http://www.popularmechanics.com/technology/military/4236865
2	Locksmiths and Safe Repairers Wages	15,850	\$37,550	\$595,167,500	http://www.bls.gov/oes/current/oes499094.htm
3	No. of New Locks (Approx.)	65,581,000	\$100	\$6,558,100,000	http://www.census.gov/const/www/newresconstindex_excel.html
4	Car Alarms	8,800,000	\$100	\$880,000,000	http://www.bts.gov/publications
5	Biometrics	-	-	\$810,000,000	http://www.wcoomd.org/files/2.%20Event%20files/PDFs/Biometrics/17-Jung.pdf
6	Fire Alarms Systems	2,000,000	\$1,000	\$2,000,000,000	http://www.eia.gov/emeu/consumptionbriefs/cbecs/pbawebsite/retailserv/retserv_tablefloorspace.htm
7	Law Students	150,000	30% of \$30,000	\$1,350,000,000	http://www.abanet.org/legaled/statistics/fall2005enrollment.pdf
Total				\$15,193,267,500	

Security Cameras

There is very little publicly available information on the number of security cameras in the U.S. today. Popular Mechanics, a well-known magazine, estimates that there are around 30 million surveillance cameras in the U.S. presently. These surveillance cameras are used to protect property and hence, are a part of VCI. Assuming there is a 10% replacement rate per year leaves the size of the market sales at around 3 million new cameras a year. Furthermore, the actual cost of surveillance cameras can range from \$100-2000, with an average cost of \$800. Factoring in installation costs and other incidentals leaves an average imputed cost of \$1,000 per security camera, which equates to \$3 billion per annum. As this is expenditure data this cannot be representative of value added, so is an indicative contribution to GDP.

Locksmith/Safe Repairers' Wages

Locks and safes exist to protect property and people and thus, locksmiths and safe repairers exist because of the need to feel secure and to secure property. Their services and salaries can be counted towards violence containment. The Bureau of Labor Statistics states that 15,850 are employed in these fields with an average salary (\$37,550). We multiply the two numbers to attain the total value, approximate \$595,167,500.

Number of New Locks

The number of locks in the U.S. is difficult to estimate as there are no figures on the number of sales of locks. One way around this problem was to consult the U.S. Census to find the number of houses that have been built this year, or are presently under construction and to be finished this year. If we then assume that each house has two locks and each lock approximately costs \$50, then we obtain the final estimate.

This figure is a conservative estimate as many homes have more than two locks – there may be a lock on each door, on the windows as well as dead-locks on the front and back doors. Furthermore, this calculation only estimates household costs and does not include bike locks, the number of safes, locks and security systems used by businesses, etc. If these additional costs were counted, the final number would likely be higher.

Car Alarms

The estimate of the number of car alarms is based on the assumption that all new cars have car alarms as a standard feature. This allows us to calculate the 'base number' of car alarms sold. Given a conservative estimate of \$100 and the 8.8 million new cars sold in the U.S.⁵⁸ we obtain the final estimate. We should note that this figure does not account for the number of car alarms sold for trucks or other vehicles. Nor does the figure count new car alarms bought and fitted to older vehicles.

Biometrics

Biometrics is the development of systems which are designed to recognize human beings for their unique physical or behavior traits. They are considered as necessary for forms of security and provide location access control. This is an increasingly large market and extends to development of fingerprint, face recognition, DNA, palm print and voice recognition systems. Data on the biometrics market is difficult to obtain, with only a scattered range of private consulting and industry reports available to provide an indicative size of the market. A report conducted by the International Biometric Group in 2005 estimated the size of the global market was \$5.749 billion with North America accounting for 34% of the total. Revising this down to 25% to exclude Canada and assuming only half of biometric devices are for violence containment purposes then the size of the U.S. market is \$718 million. Revising the figure to 2010 leaves the indicative size of the market at \$801 million.

Fire Alarm Systems

By law, office buildings and retail stores are required to have fire alarm systems installed. The number of offices and retail stores was obtained from the latest available data from the Energy Information Administration. Assuming of this portion, approximately two million systems are installed each year and by using a conservative estimate of \$1,000 to buy and install a fire alarm system, we obtain the final estimate for fire alarm installation to protect against the act of vandalism. While the principle reason for fire alarm systems is to protect against accidental fire, it is important to note the prevalence of risk from intentionally set fires. According to the National Fire Protection Association (NFPA), of the 482,000 fires which occurred in structures in 2010, 27,500 of these were intentionally lit, accounting for 17.5% of the total.

Attributing a small average cost of \$1,000 to purchase and install a system and given the size of many office buildings and retail stores or malls, the estimate is likely to be conservative. Office buildings and retail stores often have complex and costly fire alarm systems to protect against arson which need to be installed by professionals. Furthermore, this number does not account for fire systems bought by homeowners which would significantly increase the final estimate. Nor does the final figure include fire systems bought by factory owners or other businesses like restaurants.

Law Studies/Students

A vital role in studying law is to either prosecute or defend cases which involve violence of some kind. Criminal law, for instance, is taught as a core component of any law degree. Moreover, the legal profession, the justice system, law-making, etc., are integral to maintaining a society that runs with as little violence as possible, and if violence does occur, victims have recourse to compensation. Thus, to calculate what students spend on studying law each year, the tuition fees were obtained.

Law school can cost approximately between \$12,000 and \$50,000 for tuition, per year. Law degrees on average take three years of study to complete, meaning total tuition costs average between \$36,000 and \$150,000 per degree. It is possible to calculate the relevant portion of the judicial case load related to violent crimes and use this as a basis for proportioning the time spent studying criminal law. Violent crime, weapon and related property offenses constitute a relatively notable percentage of the total civil and criminal caseload, being approximately 22.4% federally and more for the state. Assuming the higher composition of criminal matters for the state and counties IEP calculates 30% of legal tuition fees should be apportioned to violence containment.

Assuming an average law degree costs conservatively \$30,000 per year, the relevant portion can be calculated by taking 30% of this figure which is \$9,000. Considering the American Bar Association calculates 150,000 students graduate every year from law, the final figure can be multiplied giving the final approximation to \$1.35 billion.

⁵⁸ Estimated to be approximately 8.8 million new passenger cars sold in 2000 according to Bureau of Transportation Statistics.

6. Private Sector Expenditure on Security Personnel

As stated in the body of the paper, several industry reports, such as the World Security Association have been referenced which provide the indicative size of security sector wages. In terms of total numbers of employees, the number varies significantly from source to source. The World Security Association reports the existence of almost 100,000 private security companies (PSCs) and about 10 million security guards employed worldwide with about 1.5 million in the Americas.⁵⁹ The U.S. Bureau of Labor Statistics reports that “security guards and gaming surveillance officers held 1.1 million jobs in 2008.”⁶⁰ While these numbers differ drastically from the Small Arms Survey 2011 report of 2 million PSC employees in the United States and between 20 to 25 million worldwide. The industry is large and apparently growing in the U.S. and in the rest of the world.

An industry report by the Freedonia Group estimates the market size of the global private security industry at EUR150 billion [US\$195 bn]. Freedonia reports that the U.S. private security services market is \$49.8 billion. This is similar to G4S, Securitas, and ProSegur estimates which are contained in their annual reports. Securitas AB estimates that 43% of all security service work is done in -house; therefore 57% is outsourced and performed by other corporations. Therefore if \$49.8 billion reflects 57% of the total market then the total size of the security services market can be deduced. This total figure would include spending on both in-house security and outsourced security services.

7. Victim Compensation Programs

According to the National Association of Crime Victim Compensation Boards (NCVC), victim compensation programs distributed \$461 million in 2008. In 2010 dollars, that is approximately \$466 million. The NCVC assists victims of violent crime including assault, rape and child abuse, but not for victims of international terrorism committed outside the U.S. Each state determines its own program with money coming from fines and the federal fund. Victims of crime must file an application with the average payout being \$25,000. The final number is based on the number of successful applications.⁶¹

8. Mental Health Care and Welfare Services for Children Who are Abused

Dealing with child abuse and neglect is a VCI. In the U.S., close to one million children are confirmed victims of child maltreatment. It has been long established by extensive research that child abuse has deep and long-lasting effects on children, their families and the community. The adverse consequences are not only physical in nature, but also emotional, social and cognitive with many of these effects extending far beyond childhood, potentially affecting productivity. For instance, it is well documented that children who are abused or neglected are more likely to experience adverse outcomes during their life such as poor physical health, depression, post-traumatic stress disorder or high-risk health behaviors such as alcohol and substance abuse. The costs of dealing with child abuse and neglect are paid for by the victims, family and society at large. There are the direct costs such as medical examinations, hospitalization, cost of intervention, etc. There are also indirect costs such as the long-term emotional trauma, lost productivity, and so on which are not counted here.

Based on a variety of sources published by the Bureau of Economic Analysis, the direct costs of violence include the Mental Health Care System and the Child Welfare Services System. These are \$1.081 billion for the Mental Health Care System and \$25.361 billion for Child Welfare Services System (2007 figures). These figures only count mental health issues which are a consequence of violence such as physical and sexual abuse. By investigating the costing method supplied by the organization Prevent Child Abuse America, it can be seen the associated costs are almost entirely related to categories of violence. By revising these figures to 2010 numbers, they increase slightly to \$1.136 billion and \$26.671 billion respectively. The total figure for this category of cost is \$27.8 billion.⁶²

9. Assault –Medical Costs

The medical cost as a result of interpersonal and self-directed violence is a part of VCI. This includes suicide, premature death, disability, medical costs, and so on. The American Journal of Preventative Medicine estimates that interpersonal violence costs, on average \$24,353 (in 2000 dollars) per case. This is approximately \$30,838 in 2011 terms. It should be noted that we have not included lost productivity which is estimated at \$57,209 per case. Given that 806,843 assaults occur each year, we obtain the final figure of \$24.81 billion. This was also used in IEP's United States Peace Index which was based on research commissioned by the Centers for Disease Control (CDC).⁶³

⁵⁹ See <<http://www.worldsecurityfederation.org/site/numerosSetor.aspx>> [accessed 13 July 2011].

⁶⁰ Quote from <<http://www.bls.gov/oco/ocos159.htm>> [accessed 27 July 2011].

⁶¹ Further Information is available at <http://www.nacvcb.org/>

⁶² Wang, C.T., Holton, J. (2007) Total Estimated Cost of Child Abuse and Neglect in the United States, Prevent Child Abuse America Chicago, Illinois, Economic Impact Study. Wang, C.T., Holton, J. (2007) Total Estimated Cost of Child Abuse and Neglect in the United States, Prevent Child Abuse America Chicago, Illinois, Economic Impact Study.

⁶³ 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).

10. Repair/Restoration – Legal Fees Due to Violence

Repair and restoration refers to the cost of dealing with the consequences of violence. One simple approach is to try to estimate the costs of seeking justice due to crime. Thus, justice is part of the restoration process through the criminal justice system. An integral part of this system is the involvement of lawyers. Thus, to estimate the restoration, we estimate the cost of hiring lawyers in cases involving crime.

Harvard Law has estimated the revenues generated by law firms in 2003. The report also states that the market is growing at 7%. Given this, we can conservatively estimate the revenue of law firms in 2010 to be \$200 billion. If we disaggregate the firms classed under 'Business', 'Government', 'Education', etc., we are left with approximately \$100 billion which include 'Law Firms' and 'Solo Practices'. Furthermore, the United States Courts website states that the number of cases involving criminal filings and appeals was approximately 25% of the total caseload. Thus, if we assume that lawyers in Law Firms and Solo Practices are the relevant lawyers that undertake criminal law proceedings, and approximately 30% of their cases involve criminal filings or appeals, then we can plausibly say that 25% of their revenue involves VC giving a final figure of \$25 billion. This figure is slightly below the 30% figure provided in tuition related to violence because it is assumed non-violence containment commercial cases provide on average a greater share of revenue for legal firms.

11. Vandalism

Vandalism is violence against property which either defaces or destroys it. There are several costs associated with vandalism such the need to clean or replace damaged property, altering property so they are vandal proof, the general loss of aesthetic appeal which deters people from visiting certain areas, and so on. Counting all these factors is extremely difficult as statistics are not readily available.

In order to calculate an indicative figure of the cost of vandalism, we calculated the cost to small businesses in the US. The U.S Small Business Administration reports the average cost of an incident of vandalism costs small businesses \$3,370. Furthermore, approximately half of all small businesses are victimized by vandalism, annually. The Office of Advocacy provides estimates on the number of small businesses in the U.S. Using these figures we can calculate an approximate cost of vandalism to small businesses and is approximately \$48 billion each year.

12. NGOs

According to the Bureau of Economic Analysis,⁶⁴ the size of expenditures of non-profit organizations in the United States during 2010 was \$277.6 billion. It is assumed by IEP that approximately 30% of non-profit activity is related in some way to violence containment. This estimate is based on the donations made to NGOs. In order to obtain their approximate expenditure data was obtained from the National Center for Charitable Statistics⁶⁵ which provides extensive data on the U.S. non-profit sector.

Each NGO is categorized based on the work they do. Each category was analyzed to see whether it had a relation to VC. The relevant gross receipts were tallied for each of the relevant categories.

According to the National Center for Charitable Statistics (NCCS), 58.7% of non-profit expenses were related to health, 13.1% to human services and 2.3% to international and foreign affairs, totaling over 74.1% of total expenditures for NGOs. Unfortunately, expenditure data is not provided by the NCCS at a more detailed, categorized level. However such categorized data does exist for receipts data. IEP based the assumption of approximately 30% or \$82.1 billion upon available gross receipts data. While revenue is not value added, this is reasonable as the NCCS's The Nonprofit Sector in Brief, Public Charities, Giving and Volunteering, 2010 shows revenue and expenditure does not greatly differ, hence it is assumed the final VCI expenditure, or value added number is similar.

It should be noted that some categories contained NGOs which were not directly relevant to VC, particularly 'Mental Health & Crisis Intervention' and 'International Foreign and National Security'. In light of this, a weighting of 75% and 90% was used in order to mitigate the effects of counting NGOs which are not relevant to VC. This for instance aims to remove the counting of developmental aid organizations which may be included in the International, Foreign Affairs and National Security rubric.

Item	Category	Gross Receipts
1	International, Foreign Affairs and National Security	\$36,240,127,279
2	Crime & Legal	\$7,816,727,032
3	Military & Veterans Organisations	\$1,231,987,242
4	Mental Health & Crisis Intervention	35,684,495,380
5	Family Violence Shelters	\$988,170,358
6	Victims Services	\$212,521,281
Total		\$82,174,028,572

Table fourteen Gross Receipts of VCI Related NGOs

⁶⁴ Bureau of Economic Analysis (BEA) National Income and Product Accounts (NIPA) <http://www.bea.gov/national/txt/gdp-srce.txt> [accessed on 1/10/11].

⁶⁵ National Center for Charitable Statistics URL: <http://nccs.urban.org/>

13. Cyber-security

This category covers threats or breaches of computer networks. In some cases, a loss of physical capital may be less important than losing important or sensitive information. In the virtual world, intellectual property may be stolen which would constitute theft. If computer systems are affected by viruses, trojans or malware there is a clean-up cost which is analogous to cleaning up other forms of vandalism. The consequences may result in a loss of productivity or 'downtime'. Hence, cyber-security is a VCI as it seeks to stop or mitigate the destruction of intellectual property and other harms associated with the internet.

A report conducted by Ponemon Institute in conjunction with Symantec reported that U.S. companies will spend \$130 billion on cyber-security in 2011. Another possible way to calculate spending on cyber-security is to note that there are around 2.25 million cyber-security professionals working in the U.S, up from about 1.3 million in 2006. Given an average salary of a software engineer of \$60,000, it is possible to obtain a similar figure of \$135 billion.

14. Self-Defense Training Industry

Data sources on the self-defense training industry are limited. A popular martial arts magazine quoted the industry as worth \$40 billion with no attribution or information on the figure. The difficulties of attributing an exact number are partly due to the vast patchwork of self-defense styles, methods and schools which are covered by many different associations and organisations.

An additional difficulty is the lack of data on the number of students within each style and the fees they pay. Some self-defense classes are actually run for free at community centres, such as women's self-defense and others are fully paid martial arts classes in gyms and training facilities. The emerging market of mixed martial arts has been estimated by Forbes magazine as worth just over \$1 billion on its own. Some sources have estimated the martial arts equipment business (pads, punching bags, gloves, etc.) at around \$300-400 million.

It has been assumed if there are 50 different styles, methods and types of self-defense training, with approximately 700 centers for each type and an average of 100 students attending each center three times a year, paying approximately \$20 a lesson – the industry would be worth in the region of \$11 billion. This is conservatively well below the \$40 billion estimated by some and does not include the market for self-defense training equipment. The smaller number also takes into account that many people take self-defense classes for physical fitness or social activity.

15. Insurance

The amount of insurance that is related to violence is difficult to ascertain. There are many categories within insurance policies which are vague. For instance, property can be insured from damage, but there is little or no data which differentiates how the damage is incurred. Terrorism insurance, on the other hand, unequivocally is insurance against violence and thus, can be used to calculate a 'base number' to get an approximate figure on insurance against violence.

The Marsh Report is an in-depth study of the corporate demand for terrorism insurance. It stated that for companies with a value of \$1 million or more, approximately 60% had bought terrorism insurance with an average premium of \$111,963. In order to obtain the number of firms over \$1 million, the U.S. Census was used to obtain the number of companies. When this number was multiplied by average premium and 60% it came to \$97 billion. It is useful to note, that this figure is only for large companies. The final number is likely to be higher when we account for households and other entities as well as other forms of violence related insurance.

Total premiums paid in 2010 were \$426 billion. Twenty-five percent of this figure has been used to estimate the amount of premiums that are spent on containing violence. This figure came to \$106.5 billion. This is a conservative and reasonable approximation of the total premiums paid by Americans on insurance against violence. Especially given that spending on terrorism insurance alone comes close to \$97 billion.

⁶⁶ Ponemon Institute, URL: <http://www.ponemon.org/data-security>

Table fifteen Average Number of Corporations with Terrorism Insurance

Revenue of Enterprise	Number of Firms
\$1,000,000-2,499,999	758,595
\$2,500,000-4,999,999	311,271
\$5,000,000-7,499,999	115,476
\$7,500,000-9,999,999	58,822
\$10,000,000-14,999,999	62,468
\$15,000,000-19,999,999	32,292
\$20,000,000-24,999,999	20,137
\$25,000,000-29,999,999	13,678
\$30,000,000-34,999,999	9,807
\$35,000,000-39,999,999	7,289
\$40,000,000-44,999,999	5,767
\$45,000,000-49,999,999	4,547
\$50,000,000-74,999,999	14,026
\$75,000,000-99,999,999	6,839
\$100,000,000 or more	20,605
Total	1,441,619
Average Premium Paid	\$111,963
% of Firms with Insurance	60
Total Premia Paid⁶⁷	\$96,844,792,858

16. Defense Expenditures

Although a large number of companies are contracted by the U.S. government for their defense requirements, many companies also sell military equipment to foreign governments. We can count this income as attributable to VCI since military equipment is directly used to prevent or cause violence and are contributions to U.S. GDP. Furthermore, we also avoid the double counting problem because these foreign sales are a part of U.S. exports and hence, do not appear in other items such as U.S. defense spending. Out of the top military contractors in the U.S. only the seven largest companies have been included as they account for the majority of arms exports. Therefore this is a conservative figure as smaller exporters are excluded. The annual reports were obtained from each of the companies' website. Each company reported their sales to foreign governments. Acquiring accurate value added figures for defense contract sales would require further data currently not available.

Name	Export Sales as a % of Total Sales	Net Sales	Exports
Lockheed Martin	15%	\$45,800,000,000	\$6,870,000,000
Boeing	N/A	N/A	\$6,000,000,000
Northrop Grumman	5%	\$34,757,000,000	\$1,737,850,000
Raytheon	N/A	N/A	\$1,100,000,000
Halliburton	54%	\$17,973,000,000	\$9,705,420,000
General Dynamics	N/A	N/A	\$6,000,000,000
United Technologies	N/A	N/A	\$5,883,000,000
Total			\$37,296,270,000

Table sixteen Top Seven Defense Contractors in the United States and their Sales Abroad in 2009-10

⁶⁷ The Marsh Report: Terrorism Risk Insurance 2010 [<http://insurancemarketreport.com/terrorism2010/Home/tabid/7396/Default.aspx>] and Corporate Demand for Insurance: An Empirical Analysis of the U.S. Market for Catastrophe and Non-Catastrophe Risks (Sept, 2009) http://opim.wharton.upenn.edu/risk/partners/5_Terrorism+CorporateDemandforInsurance.pdf looked at companies above US\$1 million for their insurance spending relating to terrorism. The studies indicated that around 60% of firms (over US\$1million) insured against terrorism and paid an average premium of US\$111,963. The number of firms US\$1 million and over were obtained [<http://www.census.gov/econ/smallbus.html#EstabSize>]. Then the total number of firms (over US\$1 million) was multiplied by 60% and the average premium paid to obtain the total premia paid.

APPENDIX D

Methodological Notes

Working with GDP and Issues Counting Real Value-added

Gross domestic product, or GDP, is conventionally defined as the market value of all final goods and services produced within a country during a specific year. Three equivalent approaches can be used to compute this value. The first is to add up the final expenditure streams of consumers, business investment, including inventory investment and residential housing, and the government sector for federal, state and local governments. Considering the formula $GDP = C + I + G + (X - M)$, methodologically, the government part (G) is the easiest to deal with because all government spending at the federal, state, and local levels are deemed to be final expenditures. In terms of investment (I), numbers would be required for the violence containment-related investments, such as security equipment, for all business enterprises. The U.S. Bureau of the Census does conduct an annual capital expenditures survey,⁶⁸ however, the information cannot be used for our purpose as no detail on the precise nature and purpose of the investment is available. Investment information would, at any rate, provide no detail on other inputs such as security guard services into the production process.

In terms of consumption (C), the U.S. Bureau of the Census conducts periodic consumer expenditure surveys for the U.S. Bureau of Labor Statistics (BLS) and is “the only Federal survey to provide information on the complete range of consumers’ expenditures and incomes.”⁶⁹ However, under the current survey questionnaire, none of the items are even remotely suitable to extract violence containment-related items. For example, surveyed consumers report expenditures under the housing category in subdivisions for (1) shelter, (2) utilities, fuel, and public services, (3) housekeeping supplies, and (4) household furnishings and equipment. None of the subcategories can be used to extract violence containment components such as security door and window locks or alarm systems. For purposes of the National Income and Products Accounts (NIPA), the information is reclassified into personal consumption expenditures (PCE) in terms of goods and services,⁷⁰ as well as into “major functions” which closely mirror the BLS categories. Mere reformatting of the underlying information of course does not yield details on violence containment. In terms of exports and imports, major conventional and small arms as well as security services need to be counted. Counter-intuitively, arms imports are excluded because the money is sent overseas and is part of foreign countries GDP; although trade in arms certainly is part of violence containment, in terms of GDP this is an expenditure executed in another country’s jurisdiction.

Another method for computing GDP is to add up the income streams that the expenditures generate. In the United States, this is done as compensation for employees, proprietors’ income, rental income, corporate profits, and net interest earned, with adjustments for taxes paid and subsidies received. Again, it is not feasible to estimate the violence containment portion of GDP this way as income is not directly reported by activity.

Yet another method is to sum each sector’s value added. Gross value added (or net output) is calculated by subtracting intermediate inputs from gross output. Further subtracting fixed capital consumption (depreciation charges) yields net value added (the sum of gross wages, pre-tax profits net of depreciation and indirect taxes less subsidies). Once again, national statistics are not kept at a level of detail that would permit one to extract violence containment-related expenditures.

The Double Counting Problem Explained

The double counting problem only affects private sector spending which represents 28% of the costs identified in this report. IEP has dealt with this problem by consistently taking conservative figures in each of the items counted. Because of the value added problem, the resulting numbers for the private sector can only be expressed as indicative percentages of GDP. The reliance on revenue data precludes one from being able to 100% accurately express value added figures for the private sector. Because of the nature of accounting mechanisms, it is unlikely one would ever be able to derive a figure that was 100% correct.

Therefore, what is presented in this report is a best-estimate, based on the data available. If a full and accurate accounting of the value-added contribution of the private violence containment industry were possible, it is reasonable to assume it would result in some subtractions, many additions, and a final net figure much higher than what we have estimated here.

A good example of the problem can be provided by reviewing a security service provider such as G4S which sells \$10 million worth of security services to Delta Airlines. It is clear that one cannot count both G4S’s income stream and Delta’s expenditure stream. Obviously, this would be double-counting. But in order to obtain the correct figure one cannot count G4S’s \$10 million revenue by itself either because that reflects the value of gross output from which one would need to subtract intermediate inputs and depreciation charges to get net value added. This information is not available. Likewise, in order to derive an accurate figure one cannot count Delta’s \$10 million expenditure. Here, IEP has decided to count one side of ledger as indicative of the value added total, so in this case would just count the G4S revenue from its delivery of security services to Delta, while not counting security expenses in the transport/aviation industry at all.

The mechanism used in this study to avoid double counting is different for different items and is explained within the relevant portion of this report. The unambiguous items in GDP accounting is government expenditure for federal, state, and local governments.

⁶⁸ See <<http://www.census.gov/econ/overview/mu2200.html>> [accessed 27 July 2011].

⁶⁹ See <<http://www.bls.gov/cex/>> [accessed 27 July 2011].

⁷⁰ See NIPA Table 2.3.5U.

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ISBN 978-0-9806279-7-8

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