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# Is there a Relationship between Guns and Freedom? Comparative Results from 59 Nations

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# Is there a Relationship between Guns and Freedom? Comparative Results from 59 Nations

By David B. Kopel,<sup>1</sup> Carlisle Moody<sup>2</sup> & Howard Nemerov<sup>3</sup>

Is there a relationship between firearm ownership in a nation and the level of freedom? Many people have thought so.

The American founding generation thought that the relationship was positive. James Madison spoke of “the advantage of being armed, which the Americans possess over the people of almost every other nation,” and contrasted the United States with “the several kingdoms of Europe,” where “the governments are afraid to trust the people with arms.”<sup>4</sup> Two centuries later, Senator Hubert Humphrey affirmed the same idea:

Certainly one of the chief guarantees of freedom under any government, no matter how popular and respected, is the right of citizens to keep and bear arms.... The right of citizens to bear arms is just one guarantee against arbitrary government, and one more safeguard against tyranny which now appears remote in America, but which historically has proved to be always possible.<sup>5</sup>

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<sup>3</sup> Author of *FOUR HUNDRED YEARS OF GUN CONTROL: WHY ISN'T IT WORKING?* (2008). Developer of the Nemerov Method, a neuromuscular physical therapy discipline derived from 18 years of clinical analysis and practical research.

<sup>4</sup> *THE FEDERALIST* No. 46, at 301 (James Madison) (Isaac Kramnick ed., Penguin Classics 1987).

<sup>5</sup> Robert J. Cottrol & Raymond T. Diamond, *The Fifth Auxiliary Right*, 104 *YALE L.J.* 995, 998 n.10 (1995) (quoting Hubert H. Humphrey in a book review of *JOYCE LEE MALCOLM, TO KEEP AND BEAR ARMS: THE ORIGINS OF AN ANGLO-AMERICAN RIGHT* (1994)). Humphrey was one of the most outspoken congressional leaders of the Civil Rights movement. He later served as Vice-President under President Lyndon B. Johnson, and was the Democratic nominee for President in 1968. He is generally regarded as one of the exemplars of post-WWII American liberalism.

Other people argue that there is a negative relationship between guns and freedom. Former U.N. Secretary General Kofi Annan stated:

The proliferation of small arms, ammunition and explosives has also aggravated the violence associated with terrorism and organized crime. Even in societies not beset by civil war, the easy availability of small arms has in many cases contributed to violence and political instability. These, in turn, have damaged development prospects and imperilled human security in every way.<sup>6</sup>

Proponents of both theories can readily cite examples. Widespread ownership of firearms helped Americans win independence from Britain in the American Revolution and preserve that independence in the War of 1812.<sup>7</sup> The well-armed Swiss were able to deter Nazi invasion during World War II, even though Joseph Goebbels thought Hitler might eventually be known as the “Butcher of the Swiss.”<sup>8</sup> Conversely, guns in the hands of warlords and terrorists have played a major role in harming civil society in modern nations such as Lebanon and the Ivory Coast.<sup>9</sup>

Increased United Nations attention to the gun control issue in the 1990s and the early 21st century has resulted in much greater academic interest in international firearms issues.<sup>10</sup> It is now possible to use a large panel, consisting of fifty-nine nations, to test for a relationship between increased gun density and various measures of freedom.<sup>11</sup>

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<sup>6</sup> Press Release, Security Council, Addressing the Security Council, Secretary General Says International Community Must Reverse Global Proliferation of Small Arms, U.N. Doc. SG/SM/7145 (Sept. 24, 1999).

<sup>7</sup> JOHN W. SHY, *A PEOPLE NUMEROUS AND ARMED: REFLECTIONS ON THE MILITARY STRUGGLE FOR AMERICAN INDEPENDENCE* (rev. ed., Univ. of Mich. Press 1990) (1976); ROBERT REMINI, *THE BATTLE OF NEW ORLEANS* (1999).

<sup>8</sup> STEPHEN P. HALBROOK, *TARGET SWITZERLAND: SWISS ARMED NEUTRALITY IN WORLD WAR II* 182 (2003) (quoting from Nazi Propaganda Minister Goebbels’s diary entry for May 8, 1943, JOSEPH GOEBBELS, *THE GOEBBELS DIARIES: 1942–1943*, 358 (Louis P. Lochner ed., Doubleday & Co. 1948)).

<sup>9</sup> See, e.g., Hussein Solomon, *Towards the 21st Century: A New Global Security Agenda?*, Institute for Security Studies Occasional Paper No. 6, 1996, [http://www.iss.co.za/index.php?link\\_id=&slink\\_id=696&link\\_type=12&slink\\_type=12&tmpl\\_id=3](http://www.iss.co.za/index.php?link_id=&slink_id=696&link_type=12&slink_type=12&tmpl_id=3) (last visited Oct. 24, 2008) (claiming that proliferation of light weapons decreases stability in developing nations).

<sup>10</sup> See, e.g., Keith Krause, *Multilateral Diplomacy, Norm Building, and U.N. Conferences*, 8 *GLOBAL GOVERNANCE* 247 (2002) (providing methodological suggestions on how to incorporate U.N. documentary records into academic research on firearms).

<sup>11</sup> It would be better, of course, if there were data for 100 or 150 nations. But the panel size used in this Article is large enough to support meaningful conclusions. See, e.g., Mushfiz us Swaleheen & Dean Stansel, *Economic Freedom, Corruption, and Growth*, 27

Using data on per capita firearm ownership from the Small Arms Survey,<sup>12</sup> this Article examines the relationship between per capita firearm rates and several measures of freedom. These measures are:

- Freedom House's ratings of political rights (such as free elections) and civil liberty (such as freedom of religion).
- Transparency International's ratings of government corruption levels.
- Heritage Foundation's ratings of economic freedom.
- World Bank's ratings of economic success.

Part I of this Article describes these data sources. Part II reports the findings from the comparative analysis. Part III discusses various ways in which higher levels of firearms density might work to increase or decrease different aspects of freedom.

## Part I. Data Sources

### A. Freedom House's Ratings of Political Rights and Civil Liberty

Founded in 1941 by Eleanor Roosevelt and others concerned by the threat of fascism, Freedom House is a leading voice against political and civil oppression, regardless of the ideology of the oppressor.<sup>13</sup> Every year Freedom House publishes a monograph titled *Freedom in the World*, in which each country is given a rating for two categories: political rights and civil liberty.<sup>14</sup> *Freedom in the World* defines these categories as follows:

Political rights enable people to participate freely in the political process, including through the right to vote..., compete for public office..., and elect representatives who have a decisive impact on public policies and are accountable to the electorate. Civil liberties allow for the freedoms of expression and belief, associational and

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CATO J. 343 (2007) (studying a sixty-nation panel built using, inter alia, some of the international ratings used in this Article).

<sup>12</sup> The Small Arms Survey is affiliated with the Graduate Institute of International Studies, Geneva, Switzerland.

<sup>13</sup> Freedom House, <http://www.freedomhouse.org/template.cfm?page=2> (last visited Sept. 26, 2008).

<sup>14</sup> FREEDOM HOUSE, *FREEDOM IN THE WORLD* (2008), available at [http://www.freedomhouse.org/template.cfm?page=351&ana\\_page=341&year=2008](http://www.freedomhouse.org/template.cfm?page=351&ana_page=341&year=2008) (last visited Sept. 26, 2008).

organizational rights, rule of law, and personal autonomy without interference from the state.<sup>15</sup>

Countries are rated on a scale of 1 to 7 for each category, with 1 representing the greatest level of individual rights.<sup>16</sup> Ratings between 1 and 2.5 are considered “free.”<sup>17</sup> Ratings between 2.51 and 5 are considered “partly free.”<sup>18</sup> Ratings over 5 are considered “not free.”<sup>19</sup> Of the 192 United Nations member states included in *Freedom in the World* in 2006, 46% are rated “free.”<sup>20</sup>

## B. Transparency International’s Ratings of Government Corruption Levels

Transparency International publishes an annual *Corruption Perceptions Index*, which tracks the level of government corruption in 180 countries.<sup>21</sup> The *Corruption Perceptions Index* is based on index-specific surveys.<sup>22</sup> Transparency International defines corruption as “the abuse of

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<sup>15</sup> *Id.*

<sup>16</sup> *Id.*

<sup>17</sup> *Id.*

<sup>18</sup> *Id.*

<sup>19</sup> *Id.*

<sup>20</sup> See *infra* tbl.6, pp. ?? (presenting the ratings of United Nations member states for every metric available in *Freedom in the World*, *Corruption Perceptions Index*, and *Index of Economic Freedom*, as well as World Bank Purchasing Power Parity).

<sup>21</sup> Transparency International, [http://www.transparency.org/policy\\_research/surveys\\_indices/cpi](http://www.transparency.org/policy_research/surveys_indices/cpi) (last visited Sept. 26, 2008).

<sup>22</sup> Transparency International, *Frequently Asked Questions*, [http://www.transparency.org/policy\\_research/surveys\\_indices/cpi/2008/faq#general2](http://www.transparency.org/policy_research/surveys_indices/cpi/2008/faq#general2) (last visited Sept. 26, 2008) (explaining that it uses the survey method to measure perceived corruption because

[i]t is difficult to assess the overall levels of corruption in different countries based on hard empirical data, e.g. by comparing the amount of bribes or the number of prosecutions or court cases. In the latter case, for example, such comparative data does not reflect actual levels of corruption; rather it highlights the quality of prosecutors, courts and/or the media in exposing corruption across countries. One strong method of compiling cross-country data is therefore to draw on the experience and perceptions of those who are most directly confronted with the realities of corruption in a country.

public office for private gain.”<sup>23</sup> The rating scale ranges from zero to 10.<sup>24</sup> Zero is thoroughly corrupt and 10 is completely clean.<sup>25</sup>

Cross-referencing the *Corruption Perceptions Index* ratings of United Nations member states with their *Freedom in the World* ratings shows that corruption correlates with reduced political rights and civil liberties. The countries that *Freedom in the World* rates as “free” have an average *Corruption Perceptions Index* rating of 5.4, which is halfway between “clean” and “corrupt,” whereas the countries which are rated as “not free” by *Freedom in the World* have an average *Corruption Perceptions Index* rating of 2.9, which is “mostly corrupt.”<sup>26</sup> The countries to whom *Freedom in the World* gives the perfect score of 1 for both political rights and civil liberties have an average *Corruption Perceptions Index* rating of 7.1, “mostly clean.”<sup>27</sup>

Of the 159 United Nations member states included in the *Corruption Perceptions Index* in 2006, the overall average rating was 4.0, which means that government officials frequently abuse their authority and power to gain personal benefits.<sup>28</sup>

### C. Heritage Foundation’s Ratings of Economic Freedom

The Heritage Foundation’s annual *Index of Economic Freedom* analyzes ten economic variables.<sup>29</sup> The *Index of Economic Freedom* defines economic freedom as encompassing

all liberties and rights of production, distribution, or consumption of goods and services. The highest form of economic freedom provides an absolute right of property ownership, fully realized freedoms of movement for labor, capital, and goods, and an absolute absence of coercion or constraint of economic liberty beyond the extent necessary

<sup>23</sup> *Id.*

<sup>24</sup> TRANSPARENCY INTERNATIONAL, THE METHODOLOGY OF THE CORRUPTION PERCEPTIONS INDEX 2008 7 (2008), available at [http://www.transparency.org/policy\\_research/surveys\\_indices/cpi/2008/methodology](http://www.transparency.org/policy_research/surveys_indices/cpi/2008/methodology).

<sup>25</sup> *Id.*

<sup>26</sup> Compare FREEDOM HOUSE, *supra* note 14, with TRANSPARENCY INTERNATIONAL, CORRUPTION PERCEPTIONS INDEX 2006, available at [http://www.transparency.org/policy\\_research/surveys\\_indices/cpi/2006](http://www.transparency.org/policy_research/surveys_indices/cpi/2006).

<sup>27</sup> *Id.*

<sup>28</sup> Transparency International, *supra* note 22.

<sup>29</sup> TIM KANE ET AL., 2007 INDEX OF ECONOMIC FREEDOM, Executive Summary at 2 (2007), available at <http://www.heritage.org/research/features/index/downloads/Index2007.pdf> (last visited Sept. 26, 2008).

for citizens to protect and maintain liberty itself. In other words, individuals are free to work, produce, consume, and invest in any way they please, and that freedom is both protected by the state and unconstrained by the state.<sup>30</sup>

Economically “free” countries have an overall score of between 80 and 100; “mostly free” countries between 70 and 79.9; “moderately free” countries between 60 and 69.9; “mostly unfree” countries between 50 and 59.9; and economically “repressed” countries less than 50.<sup>31</sup>

There are 142 United Nations member states that are rated by all three organizations—Freedom House (*Freedom in the World*), Transparency International (*Corruption Perceptions Index*), and the Heritage Foundation (*Index of Economic Freedom*).<sup>32</sup>

When these nations are ranked in quartiles according to their *Index of Economic Freedom* ratings, the top quartile has an average of 1.51 in combined political rights and civil liberty,<sup>33</sup> which qualifies as “free” in the *Freedom in the World* rating system.<sup>34</sup> By comparison, the bottom quartile has an average *Freedom in the World* rating of 4.86 for political rights and civil liberty,<sup>35</sup> which is towards the lower end of “partly free.”<sup>36</sup>

More economic liberty—as well as political and civil liberty—exists in countries with the least government corruption. All of the countries rated economically “repressed” by the *Index of Economic Freedom* are in the most corrupt half of the *Corruption Perceptions Index*.<sup>37</sup> All of the economically “free” countries lie in the least corrupt quartile of the *Corruption Perceptions Index*.<sup>38</sup>

For the 142 nations that are rated by all three indices, the average *Freedom in the World* rating is 3.20, “partly free;” the average *Corruption Perceptions Index* rating is 4.15, more corrupt than not; and the average

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<sup>30</sup> *Id.* at 38.

<sup>31</sup> *Id.* at 3.

<sup>32</sup> See *infra* tbl.6, pp. ??

<sup>33</sup> Compare KANE ET AL., *supra* note 29, with FREEDOM HOUSE, *supra* note 14 (dividing all countries in the *Index of Economic Freedom* into quartiles, then finding each quartile’s average *Freedom in the World* rating).

<sup>34</sup> FREEDOM HOUSE, *supra* note 14.

<sup>35</sup> Compare KANE ET AL., *supra* note 29, with FREEDOM HOUSE, *supra* note 14 (dividing all countries in the *Index of Economic Freedom* into quartiles, then finding each quartile’s average *Freedom in the World* rating).

<sup>36</sup> FREEDOM HOUSE, *supra* note 14.

<sup>37</sup> Compare KANE ET AL., *supra* note 29, with TRANSPARENCY INTERNATIONAL, *supra* note 26.

<sup>38</sup> *Id.*

*Index of Economic Freedom* rating is 61.50, just on the freer side of the border between “moderately free” and “mostly unfree.”<sup>39</sup>

#### D. World Bank Rating of Economic Success

The World Bank’s Purchasing Power Parity (PPP) rates the relative strength of the currencies of different countries.<sup>40</sup> Currency exchange strength is not a perfect measure of a nation’s economic success or prosperity;<sup>41</sup> for example, the European Union’s currency appreciated significantly against the U.S. Dollar during the early twenty-first century, but the United States during that same time had higher economic growth rates, lower unemployment, and a higher standard of living than almost all European Union member states. Nevertheless, prosperous countries tend to have much stronger currencies than do poor countries, so PPP is usually valid as a rough measure of a nation’s economic success.

Domestic price levels influence PPP.<sup>42</sup> Thus, much lower housing and food prices in the United States than in Ireland strengthen the United States’ PPP relative to Ireland’s, even though Ireland’s currency, the Euro, is stronger than the U.S. Dollar.<sup>43</sup>

Out of the twenty countries with the highest World Bank PPP ratings, eighteen are rated “free” by *Freedom in the World*.<sup>44</sup> Of these eighteen, seventeen earned a score of 1 in both political rights and civil liberties, which is the highest rating.<sup>45</sup> The exception was Japan, which was slightly worse on civil liberties, earning a score of 2.<sup>46</sup> By comparison, the twenty countries with the lowest World Bank PPP ratings

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<sup>39</sup> See *infra* tbl.6, pp ??

<sup>40</sup> WORLD BANK, GLOBAL PURCHASING POWER PARITIES AND REAL EXPENDITURES: 2003–2006 ICP HANDBOOK 6 (2007) [hereinafter ICP Handbook], available at <http://go.worldbank.org> (“The Purchasing Power Parity between two countries is the rate at which the currency of one country needs to be converted into that of a second country to represent the same volume of goods and services in both countries.”).

<sup>41</sup> If a government imposes exchange controls on its currency, the currency can be artificially strengthened, as is the case with China’s Renminbi. DEBATING CHINA’S EXCHANGE RATE POLICY (Morris Goldstein & Nicholas R. Lardy eds., 2008).

<sup>42</sup> See ICP HANDBOOK, *supra* note 40, ch.4 at 10–11 (discussing price concepts and local markets).

<sup>43</sup> World Bank, *GNI Per Capita 2006, Atlas Method and PPP*, July 1, 2007, compiled in WORLD BANK, WORLD DEVELOPMENT INDICATORS DATABASE, available at <http://siteresources.worldbank.org/DATASTATISTICS/Resources/GNIPC.pdf>.

<sup>44</sup> See *infra* tbl.6, pp ??

<sup>45</sup> See *id.*, pp ??

<sup>46</sup> See *id.*, pp ??



only contained two countries rated “free” by *Freedom in the World*, and both received a score of 2 in political rights and civil liberties.<sup>47</sup>

Similarly, the thirty-five United Nations member states earning the exemplary score of 1 for both political rights and civil liberties in *Freedom in the World* had an average PPP rank of 37 from the World Bank, while the bottom thirty-five countries in *Freedom in the World* had an average PPP rank of 137.<sup>48</sup> Because a lower PPP value indicates economic success,<sup>49</sup> this comparison shows that countries with more expansive political and civil liberty enjoy greater economic prosperity than less free countries.

There is also a clear correlation between World Bank PPP and the results found in the *Index of Economic Freedom*. Countries in the top quartile of the *Index of Economic Freedom* had a rating of 74.40, “mostly free,” and an average PPP of 42.00.<sup>50</sup> The second quartile had a rating of 63.47, “moderately free,” and an average PPP rank of 89.91.<sup>51</sup> The third quartile had a rating of 57.43, “mostly unfree,” and an average PPP rank 142.53.<sup>52</sup> The bottom quartile averaged 50.46, “mostly unfree” and less than half of one point away from “repressed,” and averaged 157.29 in PPP.<sup>53</sup> The relationship works the other way, too: when countries are ranked in quartiles by PPP, every step up in a quartile is associated with a higher average score in the *Index of Economic Freedom*.<sup>54</sup>

## E. Small Arms Survey Data on Firearms Ownership

The Small Arms Survey is a research institution focusing on international firearms issues.<sup>55</sup> Every year, the Small Arms Survey publishes an eponymous book entitled *Small Arms Survey*. *Small Arms Survey*, as well as the rest of the work of the Small Arms Survey, is the

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<sup>47</sup> See *id.*, pp. ??

<sup>48</sup> See *id.*, pp. ??

<sup>49</sup> See ICP HANDBOOK, *supra* note 40.

<sup>50</sup> Compare KANE ET AL., *supra* note 29, with World Bank, *supra* note 43 (dividing all countries in the *Index of Economic Freedom* into quartiles, then finding the average World Bank PPP for each quartile).

<sup>51</sup> *Id.*

<sup>52</sup> *Id.*

<sup>53</sup> *Id.*

<sup>54</sup> *Id.*

<sup>55</sup> Small Arms Survey, <http://www.smallarmssurvey.org> (last visited Sept. 26, 2008). The Small Arms Survey is affiliated with the Graduate Institute of International Studies in Geneva, Switzerland.

finest scholarly work produced by academic supporters of increased firearms restrictions.<sup>56</sup>

Like the Heritage Foundation and the other organizations that supplied the data used in this Article, the Small Arms Survey has a very strong policy agenda. The Small Arms Survey is in favor of much more extensive national and international gun controls. Nevertheless, the Small Arms Survey is respected for its rigorous treatment of data. No other organization in the world has come remotely close to supplying so much useful data for analysis of international firearms policy issues. The *Small Arms Survey* statistics, including those on per capita firearm ownership, are usually treated as authoritative in gun policy debates at the United Nations and other international fora.<sup>57</sup>

The 2003, 2004, 2005, and 2007 editions of *Small Arms Survey* contain tables estimating the number of firearms per citizen in various countries.<sup>58</sup> Collectively, the four volumes provide data on fifty-nine nations which are also rated by *Freedom in the World*, the *Corruption Perceptions Index*, the *Index of Economic Freedom*, and the World Bank.<sup>59</sup>

In estimating per capita gun ownership, the Small Arms Survey has a much more difficult task than its peers who produce the other ratings studied in this Article. For example, the *Index of Economic Freedom* is based on laws such as statutes establishing tax rates or written regulations about imports or securities.<sup>60</sup> A scholar must be able to read complex legal documents in a foreign language, but if the scholar can do so, accurately rating the nation's level of economic freedom is straightforward.

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<sup>56</sup> See, e.g., Winston P. Nagan & Craig Hammer, *The New Bush National Security Doctrine and the Rule of Law*, 22 BERKELEY J. INT'L. L. 375, 404 n.111 (2004) (referring to the importance of SMALL ARMS SURVEY in academic research).

<sup>57</sup> See, e.g., The Secretary-General, *Report of the Secretary-General on Small Arms*, ¶ 4, delivered to the Security Council and the General Assembly, U.N. Doc. S/2008/258 (Apr. 17, 2008).

<sup>58</sup> Data on firearms per capita are not as useful as data on gun-owning households as a percentage of the population. Consider one neighborhood of 10 homes, where the number of guns in each household is 10, 7, 5, 0, 0, 0, 0, 0, 0, 0. Another neighborhood might have an equal number of guns, distributed 4, 3, 3, 3, 2, 2, 2, 1, 1, 0. In the first neighborhood 30% of families have a gun in the home, and in the second neighborhood 90% do, even though guns per capita are equal in each neighborhood. We would have analyzed household gun ownership rates if they were available for the full panel of fifty-nine nations.

<sup>59</sup> See *infra* tbl.6, pp ??

<sup>60</sup> KANE ET AL., *supra* note 29, at 43–44.

In contrast, *Small Arms Survey* is based on two main forms of data: government gun registration records and household surveys in which people are asked about gun ownership.<sup>61</sup> Both are problematic.

### 1. The Incompleteness of Registration Data

Registration records in countries which have comprehensive firearms registration laws provide data about the quantity of *legal* guns, but necessarily do not include *illegal* guns. Some illegal guns may be owned for criminal purposes. Other illegal guns may be owned by otherwise law-abiding citizens who were not able to obtain a gun through the legal process, if for instance the legal process were highly restrictive with a strong presumption against citizen gun ownership. Or, a citizen might own several guns which have been in his or her family for a long time and were unregistered when they were acquired. This scenario is likely if the guns were acquired prior to registration laws, or acquired during a war, picked up from a fallen enemy soldier.<sup>62</sup> Fearing confiscation, the family might have chosen not to comply with registration laws once enacted.

Such non-compliance with registration is not unreasonable from the viewpoint of someone who wants to keep her gun, since registration lists have been used for confiscation of some or all guns in China,<sup>63</sup> communist Poland,<sup>64</sup> Australia,<sup>65</sup> Great Britain,<sup>66</sup> and New York City.<sup>67</sup> Gun registration lists were also used by the Nazis to disarm Jewish citizens.<sup>68</sup>

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<sup>61</sup> SMALL ARMS SURVEY, SMALL ARMS SURVEY 2007: GUNS AND THE CITY 49–54 (2007).

<sup>62</sup> For example, France requires gun registration, LIBRARY OF CONGRESS, GUN CONTROL LAWS IN FOREIGN COUNTRIES 71–76 (rev. ed 1976), but “almost every surviving member of the Resistance has kept his personal arms, unregistered,” and many of their children do the same. WILLIAM R. TONSO, GUN AND SOCIETY: THE SOCIAL AND EXISTENTIAL ROOTS OF THE AMERICAN ATTACHMENT TO FIREARMS 8 (1982). In 1968, police officials estimated that only 10% of handguns in Paris were registered. *Id.*

<sup>63</sup> *Id.* at 55.

<sup>64</sup> *Id.* at 155.

<sup>65</sup> Peter Reuter & Jenny Mouzos, *Australia: A Massive Buyback of Low-Risk Guns*, in EVALUATING GUN POLICY 121, 129 (Jens Ludwig & Philip Cook eds., 2003).

<sup>66</sup> Joseph Olson & David B. Kopel, *All the Way Down the Slippery Slope: Gun Prohibition in England and Some Lessons for Civil Liberties in America*, 22 HAMLINE L. REV. 399, 433 (1999).

<sup>67</sup> *Id.*

<sup>68</sup> Stephen P. Halbrook, *Nazi Firearms Law and the Disarming of the German Jews*, 17 ARIZ. J. INT’L & COMP. L. 483 (2000); Stephen P. Halbrook, “Arms in the Hands of Jews Are a Danger to Public Safety”: Firearm Registration and the Night of the Broken Glass (2008) (Unpublished manuscript, available at [http://works.bepress.com/stephen\\_halbrook/2/](http://works.bepress.com/stephen_halbrook/2/)).

Great Britain serves as an example of how registration records can result in a massive undercount. Great Britain's gun controls are among the strictest in the democratic world.<sup>69</sup> Every legally owned rifle and handgun in the nation has been registered since the passage of the Firearms Act of 1920.<sup>70</sup> Before registration records were used to confiscate all handguns in 1997, there were about 50,000 pistol licenses extant.<sup>71</sup> In the four decades after World War II, over 300,000 illegal handguns were voluntarily surrendered nationwide—an indication of a large pool of illegal guns.<sup>72</sup> Late 1980s estimates put the number of illegal guns at almost one million, compared with two and a half million legally owned.<sup>73</sup>

Unless a special amnesty is in effect, most illegal guns surface on the death of the owner when surrendered by the heirs.<sup>74</sup> So, one method to measure the quantity of illegal guns is to analyze the number of annual surrenders in relation to the variations over time in the number of deaths. Since the fall of the Iron Curtain, many illegal guns flowed from former Warsaw Pact military stocks into the rest of Europe and Africa.<sup>75</sup> But, if we counter-factually assume that the current British controls are perfectly effective—that there are no new guns being added to the illegal pool—and we further assume that 35% of heirs always surrender all guns, then the surrender data would indicate that there are approximately 400,000 illegal handguns and 800,000 illegal long guns.<sup>76</sup> About 80,000 of the illegal guns were estimated to be in the London metropolitan area.<sup>77</sup> If one assumes that half of all heirs surrender the ancestor's gun, then the estimated number of illegal guns increases, converging with other estimates of two million or more illegal guns.<sup>78</sup>

It appears that most British gun owners have not obeyed retroactive registration laws. In years before the Firearms Act, there were about

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<sup>69</sup> David B. Kopel, Joanne D. Eisen & Paul Gallant, *The Gold Standard of Gun Control*, 2 J. L. ECON. & POL'Y 417 (2006) (reviewing JOYCE MALCOLM, GUNS AND VIOLENCE (2006)).

<sup>70</sup> Olson & Kopel, *supra* note 66, at 413–416; Firearms Act, 1920, 10, 11 Geo. 5, c. 43 (Eng.).

<sup>71</sup> JOYCE LEE MALCOLM, GUNS AND VIOLENCE: THE ENGLISH EXPERIENCE 205 (2002).

<sup>72</sup> *Id.* at 208; MICHAEL YARDLEY & JAN A. STEVENSON, REPORT ON THE FIREARMS (AMENDMENT) BILL 74 (2d ed. 1988).

<sup>73</sup> MALCOLM, *supra* note 71. Others argue that the amount of illegal weapons exceeds the amount of legal ones. YARDLEY & STEVENSON, *supra* note 72, at 26.

<sup>74</sup> YARDLEY & STEVENSON, *supra* note 72, at 26.

<sup>75</sup> Harold Hongju Koh, *A World Drowning in Guns*, 71 FORDHAM L. REV. 2333, 2343 (2003).

<sup>76</sup> YARDLEY & STEVENSON, *supra* note 72, at 28–29.

<sup>77</sup> *Id.*

<sup>78</sup> *Id.*

30,000 handgun sales annually, and most handgun owners did not register in 1921.<sup>79</sup>

In 1988, pump action and semi-automatic shotguns were brought into the registration system.<sup>80</sup> About 200,000 such guns were sold between 1978 and 1988, and at least 100,000 such guns were in private possession before then.<sup>81</sup> But fewer than 100,000 pump action or semi-automatic shotguns were registered in response to the 1988 law.<sup>82</sup> The English tradition of hiding guns from the government dates back to at least 1642.<sup>83</sup>

The Small Arms Survey relies heavily on extrapolations from registration data in creating its estimates of total gun ownership in various nations.<sup>84</sup>

## 2. Undercounting by Household Surveys

The American experience indicates that household surveys result in very large underestimates of gun ownership.<sup>85</sup> For example, David Bordua and Gary Kleck conducted a survey of Illinois residents with a Firearms Owners Identification Card (FOID), a license which has been required for legal gun ownership in Illinois since 1966.<sup>86</sup> Everyone who has a FOID card has identified himself to the government as a gun-owner.<sup>87</sup> Yet when the Bordua/Kleck survey called FOID card holders to ask various questions about their gun-owning practices, the number who admitted owning a gun was about 10 percent less than the number of FOID card holders.<sup>88</sup>

If such a significant percentage of people who know that they are on a government list of gun-owners will deny gun ownership to a pollster,

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<sup>79</sup> COLIN GREENWOOD, FIREARMS CONTROL: A STUDY OF ARMED CRIME AND FIREARMS CONTROL IN ENGLAND AND WALES 238, 242 (1972).

<sup>80</sup> Cadmus, *A War of Attrition*, 30 GUNS REV. 803, 804 ('Cadmus' was the author's pseudonym).

<sup>81</sup> *Id.*

<sup>82</sup> *Id.*

<sup>83</sup> Joyce Lee Malcolm, *The Right of the People to Keep and Bear Arms: The Common Law Tradition*, in FIREARMS AND VIOLENCE: ISSUES OF PUBLIC POLICY 385, 395 (Don B. Kates ed., 1984).

<sup>84</sup> SMALL ARMS SURVEY, *supra* note 61, at 55.

<sup>85</sup> GARY KLECK, POINT BLANK: GUNS AND VIOLENCE IN AMERICA 455–60 (1991); Ann P. Rafferty, John C. Thrush, Patricia K. Smith & Harry B. McGee, *Validity of a Household Gun Question in a Telephone Survey*, 110 PUB. HEALTH REP. 282, 286–287 (1995).

<sup>86</sup> DAVID J. BORDUA, ALAN J. LIZOTTE & GARY KLECK WITH VAN CAGLE, PATTERNS OF LEGAL FIREARMS OWNERSHIP, REGULATION AND USE IN ILLINOIS (Illinois Law Enforcement Comm'n, 1979).

<sup>87</sup> *Id.*

<sup>88</sup> *Id.* Admittedly, in theory a person might own a FOID card and never buy a gun.

it stands to reason that an even larger number of gun owners who are *not* already on a government list would deny ownership to a pollster.

One reason for denial could be that the gun is not legally owned. Another reason could be that the owner may fear that the survey data might be given to the government, and would be used against her if she did not comply with a gun confiscation law enacted sometime in the future. Or, the gun-owner simply might have a strong sense of privacy about gun ownership.

In addition, there is a significant tendency for spouses to underreport ownership. If the husband owns guns, and the wife considers the guns to be “his guns,” then a household survey asking about guns in the home will often produce a “yes” if the husband answers the survey, but a “no” if the wife answers the survey.<sup>89</sup>

It is impossible to know the true size of what may be called the “Dark Number” of households which have guns but which are not on a government list and will not admit ownership to a pollster. Kleck’s best estimate is that household surveys miss gun ownership in about 5–10% of American homes.<sup>90</sup> So, if a household survey reports that 45% of American homes have guns, then the true figure would probably be about 50–55%.<sup>91</sup>

The underestimation rate in most other nations would very likely be greater than in the United States. It is an accurate stereotype that Americans are far more willing to divulge personal facts to near-strangers than are people of most other nations. Strike up a conversation with the American who is sitting on your left during a transatlantic flight, and you are more likely to be told some intimate detail about his family life or medical history than if you strike up a conversation with the Frenchman sitting on your right.

Extensive data show that poll respondents will often give the pollster an answer that is perceived as socially correct.<sup>92</sup> In most of the United States and Switzerland, cultural mores are strongly supportive of gun ownership. In less supportive countries, such as the United Kingdom, one might expect that the rate of false denials by gun owners would be higher. Thus, while household survey data indicate that 5% of households

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<sup>89</sup> GARY KLECK, *TARGETING GUNS: FIREARMS AND THEIR CONTROL* 67 (1997).

<sup>90</sup> *Id.* at 68.

<sup>91</sup> KLECK, *supra* note 85, at 457.

<sup>92</sup> SEYMOUR SUDMAN & NORMAN M. BRADBURN, *RESPONSE EFFECTS IN SURVEYS: A REVIEW AND SYNTHESIS* 9–10 (1974).

in England and Wales have a gun, the true figure may be more than double that.<sup>93</sup> Underestimates in other nations could be as large, or larger.

In Serbia, the United Nations sponsored a survey that asked respondents whether they owned guns, and if so, how many.<sup>94</sup> 20% of respondents admitted that they owned a gun, and admitted to owning on average 1.5 firearms.<sup>95</sup> If extrapolated to the entire population, Serbians owned only 750,000 weapons.<sup>96</sup> But that figure is lower than the number of lawfully registered guns, which is 1,056,314, and much lower than the total estimate of two million.<sup>97</sup> The survey's authors noted the problem of false denials: "[S]urvey questions probing sensitive issues such as firearms possession often lead respondents to answer in a way they perceive to be more socially acceptable . . . . It is also far more likely that those with registered firearms would answer such questions truthfully than those with unregistered firearms."<sup>98</sup> Yet a large fraction of the *registered* owners also lied to the pollster about how many guns they owned, or whether they owned guns at all.<sup>99</sup>

As the Serbian survey shows, while household gun surveys provide some useful information about gun prevalence, such as how many households have a gun, they are less effective at measuring guns per capita, because per capita estimates are dependent on accurate reporting from the relatively small numbers of gun owners who own a lot of guns. If such an owner, perhaps motivated by privacy concerns, reports that he owns six guns when he really owns fifteen, household prevalence will not be affected, but per capita results will be significantly underestimated.

For about twenty countries in this Article, the per capita figures are partly based on household gun surveys conducted as part of the International Crime Survey and partly based on registration data.<sup>100</sup>

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<sup>93</sup> Forty-seven U.K. households per thousand admitted to a pollster that they owned a gun. Martin Killias, *Gun Ownership and Violent Crime: The Swiss Experience in International Perspective*, 1 SECURITY J. 169, 171 (1990).

<sup>94</sup> U.N. Dev. Programme, Small Arms Control Project in Serbia and Montenegro, *Living with the Legacy – SALW Survey Republic of Serbia 2* (2005), <http://www.smallarmssurvey.org/files/portal/spotlight/country/eu.pdf/europe-serbia-2006.pdf>.

<sup>95</sup> *Id.* at 15.

<sup>96</sup> *Id.*

<sup>97</sup> *Id.* at 16.

<sup>98</sup> *Id.* at 15.

<sup>99</sup> *Id.*

<sup>100</sup> Another method of estimating guns per capita, favored by Gary Kleck, is "percent guns suicide" (PGS). KLECK, *supra* note 89, at 275–79. Kleck found that while total firearms levels in a U.S. state or county do not increase the overall suicide level, they are associated with guns being used relatively more often as a suicide method. *Id.* He argues that PGS is

### 3. Manufacturing data

An alternative method of measuring guns per capita is to use manufacturing records. Since the 1940s, American gun manufacturers have been required to report data on every firearm they produce.<sup>101</sup> A researcher can look at annual manufacturing data, adjust it to account for exports and imports, which are also carefully tracked in the United States,<sup>102</sup> and subtract the number of guns sold to the government. Thus, one can produce a reasonably good estimate of guns per capita.<sup>103</sup> However, historical gun manufacturing data from most other nations are not remotely as precise as the U.S. data.<sup>104</sup>

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the best method for estimating gun availability in U.S. jurisdictions. *Id.* Data from the early 1990s used in calculating PGS for 36 countries are found in Etienne G. Krug, K.E. Powell & L.L. Dahlberg, *Firearm-related Deaths in the United States and 35 Other High- and Upper-Middle Income Countries*, 27 INT'L J. EPIDEMIOLOGY 214, 215 (1998). We preferred to use the data for our fifty-nine nations from *Small Arms Survey*, because of its larger sample size, and because the *Small Arms Survey* figures are the ones accepted by the United Nations and used in international policy discussions. As Chart 4 in the Appendix details, PGS correlates well, but not perfectly, with the *Small Arms Survey* guns per capita rankings. *See infra* chart 4, pp. ??

<sup>101</sup> Federal Firearms Act of 1938, ch. 850, 52 Stat. 1252 (revised and incorporated into the Gun Control Act of 1968, 18 U.S.C. § 923(g)(1)(a) (2006)).

<sup>102</sup> *Id.*

<sup>103</sup> The method is imperfect because:

1. It still requires an estimate about the number of guns in private hands before the manufacturing data law was enacted.
2. It does not account for the home manufacture of guns, which is legal in the United States for personal use. Home manufacture is also common in other nations, such as the Philippines. For the ease of home manufacture by a person who can use machine shop tools, *see* Charles H. Chandler, *Gun-Making as a Cottage Industry*, 3 J. ON FIREARMS & PUB. POL'Y 155 (1991).
3. It does not account for guns that become dysfunctional through rust or wear. There are no studies on the rate at which guns wear out. Guns are extremely durable consumer products, unless they are neglected for a long time in a rust-prone environment.
4. It does not account for guns confiscated by the police, or voluntarily surrendered to the police. The latter number is trivially low. Gun "buybacks" bring in a several thousand guns cumulatively in the United States in a typical year, out of gun supply of over 200 million. William M. Welch, *Critics Take Aim at Gun Buybacks*, USA TODAY, March 17, 2008, available at [http://www.usatoday.com/news/nation/2008-03-17-gun-buybacks\\_N.htm](http://www.usatoday.com/news/nation/2008-03-17-gun-buybacks_N.htm).

<sup>104</sup> *See* SMALL ARMS SURVEY, *supra* note 61. There are very few countries where the Small Arms Survey can use government data on manufacturing, imports, or exports as a starting point, and where such data exists, it does not extend as far back as data for the United States.



In short, the *Small Arms Survey* almost certainly underestimates per capita gun ownership in most nations. The underestimation is probably large. Some nations' underestimates may be significantly less accurate than others. Still, the relative rankings of the various nations seem accurate, at least in terms of broad groups. For example, the *Small Arms Survey* per capita estimates for France and the Netherlands are probably both too low, but we can still be confident that gun ownership is much more common in France than in the Netherlands.

## II. Results

The data for each country are presented in Table 7, found in the Appendix.<sup>105</sup> The fifty-nine nations with per capita firearms estimates are listed in order, from those with the lowest to those with the highest. The list begins with low-firearms countries of Romania, Japan, Moldova, and Poland. It ends with high-firearms countries such as Switzerland, Finland, Yemen, and the United States. The ratings from *Freedom in the World*, *Corruption Perceptions Index*, *Index of Economic Freedom*, and the World Bank PPP are also listed for each country.

Next, we divided the nations into quartiles based on their gun ownership rates. For each quartile, we averaged the nations' ratings for political and civil liberty from *Freedom in the World*, for corruption from *Corruption Perceptions Index*, and for economic freedom from the *Index of Economic Freedom*. Results are presented in Table 1.

**Table 1: Firearms Ownership Quartiles Compared with Liberty Indices**

<i>Quartile</i>	<i>Firearms Per 1,000 Population</i>	<i>Freedom in the World (1–7, lower is better)</i>	<i>Corruption Perceptions Index (0 – 10, higher is better)</i>	<i>Index of Economic Freedom (0–100, higher is better)</i>
1	388	1.93	7.09	69.79
2	145	2.80	4.35	63.59
3	81	2.53	4.75	62.57
4	24	2.32	4.31	63.03
Average 2–4	84	2.56	4.47	63.06

<sup>105</sup> See *infra* tbl.7, pp. ??

The most notable difference between the quartiles involves corruption. The top quartile has an average of 7.09 in the *Corruption Perceptions Index*, which means this quartile could be called “mostly clean.” All the other quartiles score between 4.31 and 4.75, scores that indicate moderate corruption.

The differences in *Freedom in the World* rating are not as large. One reason is that *Freedom in the World* has a 1–7 scale with only 7 steps,<sup>106</sup> whereas the *Corruption Perceptions Index* has a 0–10 scale with 11 steps.<sup>107</sup> But even taking into account the relative compression of the scale used by *Freedom in the World*, the differences between the top quartile and the rest are relatively smaller. Still, the average of the countries in the first quartile is “free,” while the average for all other quartiles is “partly free.”

On the *Index of Economic Freedom*, all quartiles averaged a “moderately free” rating. Nevertheless, the first quartile had the highest average, but not quite 70, which is the threshold for “mostly free.”

For all three indices of liberty, the top firearms quartile rates higher than every other quartile.

This is not to say that every country in a certain quartile is better than countries in lower quartiles. For example, the top firearms quartile has the highest average rating in *Freedom in the World*, but it includes Angola, rated “not free,” Saudi Arabia, also rated “not free,” and Yemen, rated “partly free.”<sup>108</sup> On the *Index of Economic Freedom*, Angola is “repressed,” while Saudi Arabia and Yemen are rated “mostly unfree.”<sup>109</sup> Conversely, the bottom firearms quartile includes Japan and the Netherlands, who both have low levels of government corruption, and high levels of political, civil, and economic liberty.<sup>110</sup>

The similarity in ratings among the three lower quartiles is interesting. For example, their *Corruption Perceptions Index* ratings averaged between 4.31 and 4.75 and their *Index of Economic Freedom* ratings are nearly identical, falling between 62.57 and 63.59.

While the top firearms quartile rates highest in all categories, the relationship between firearms and liberty is inconsistent among the lower three quartiles. For example, among the lower three quartiles, the second quartile rates slightly higher on the *Index of Economic Freedom*, while the

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<sup>106</sup> FREEDOM HOUSE, *supra* note 14.

<sup>107</sup> TRANSPARENCY INTERNATIONAL, *supra* note 26.

<sup>108</sup> See *infra* tbl.6, pp. ??

<sup>109</sup> *Id.*

<sup>110</sup> *Id.*

third quartile has the best rating on the *Corruption Perceptions Index*, and the fourth quartile has the best *Freedom in the World* rating.

Next, we looked at the data by quintiles based on firearms per capita. The results are in Table 2.

**Table 2. Firearms Ownership versus Liberty Indices, by quintile**

<i>Quintile</i>	<i>Firearms Per 1,000 Population</i>	<i>Freedom in the World (1–7, lower is better)</i>	<i>Corruption Perceptions Index (0–10, higher is better)</i>	<i>Index of Economic Freedom (0 – 100, higher is better)</i>
Top Quintile	448	1.36	7.44	71.37
Quintile 2	180	2.83	5.33	66.73
Quintile 3	121	2.50	4.21	60.86
Quintile 4	64	2.96	4.37	61.35
Quintile 5	20	2.25	4.54	64.12
Quintiles 2–5	96	2.64	4.61	63.26

When sorted by quintiles, the top firearms quintile averaged “mostly free” on the *Index of Economic Freedom*, while the lower quintiles averaged “moderately free.” The first and second quintiles rate notably better in the *Corruption Perceptions Index* than do the first and second quartiles. There is a large gap between the first and second quintiles, although not quite large as between the first and second quartiles. The top quintile’s success in *Freedom in the World* is even more pronounced than the top quartile’s success.

As with the quartile analysis, the lower quintiles do not rank on the other indices in accordance with their firearms per capita. The second quintile’s average ratings on the *Corruption Perceptions Index* and the *Index of Economic Freedom* are better than all lower quintiles, but the lowest quintile’s average *Freedom in the World* rating is better than that of quintiles 2–4.

When we looked at the countries with the most guns, we saw that they had the most freedom as measured by the liberty indices, but the relationship was only pronounced for high-gun countries. There was no difference between medium-gun and low-gun countries. Suppose we look at the relationship the other way and ask, “Do countries with the most freedom have the most guns?” Table 3 provides the results.

**Table 3: Freedom Rating Versus Firearms and Other Indices**

<i>Freedom Rating</i>	<i>Freedom in the World (1–7, lower is better)</i>	<i>Firearms Per 1,000 Population</i>	<i>Corruption Perceptions Index (0–10, higher is better)</i>	<i>Index of Economic Freedom (0–100, higher is better)</i>
Free (1)	1.00	225	7.39	73.06
Free (>1)	2.04	81	3.99	61.29
All Free	1.33	180	6.32	69.34
Partly Free	3.57	129	3.09	57.80
Not Free	5.86	132	2.83	53.93

When sorted by the *Freedom in the World* rating, the freest countries (scores of 1 for both political rights and civil liberties) had the highest density of civilian firearms, and averaged the best *Corruption Perceptions Index* and *Index of Economic Freedom* of any group. Countries rated “free” but having imperfect scores (above 1 on either political or civil freedom) had a lower firearms ownership rate than any other group. They also had a worse *Corruption Perceptions Index* and a lower *Index of Economic Freedom* than the freest countries.<sup>111</sup> “Partly free” countries had much lower ratings in all indices than all “free” countries. “Not free” countries had the poorest scores.

We also looked at differences within the freest countries. Of the 59 countries, 26 scored a *Freedom in the World* 1 on political freedom and in civil liberty.<sup>112</sup> These countries included some countries with very low levels of firearms ownership (e.g., Poland, Hungary, Estonia) as well as countries with much higher levels (e.g., Norway, Uruguay).<sup>113</sup> Since there were only 26 countries in this data subset, we sorted these freest countries into thirds, by per-capita firearms ownership. The results are in Table 4

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<sup>111</sup> Again, the guns-freedom relationship appears only at the high end. The fully free countries (perfect scores in both political rights and civil rights) have two to three times as many guns per capita as the other countries.

<sup>112</sup> See *infra* tbl.6, pp. \_\_\_\_.

<sup>113</sup> *Id.*

**Table 4. Firearms Ownership versus Indices among the Freest Countries in the World**

<i>Third</i>	<i>Firearms Per 1,000 Population</i>	<i>Corruption Perceptions Index</i>	<i>PPP</i>	<i>Index of Economic Freedom</i>
1	463	7.84	23.38	72.39
2	197	8.16	26.44	75.40
3	42	6.23	48.56	71.31
Average 2-3	119	7.19	37.50	73.36

In the *Index of Economic Freedom*, the thirds have very close scores. For PPP (economic success) the bottom third of gun ownership is significantly less wealthy. In corruption, the top two thirds are separated by only a third of a point, but they are both notably better than the bottom third. The data suggest that among the freest countries, higher levels of corruption and lower levels of wealth may have a significant inhibiting effect on gun ownership.

The results are similar if we divide the 26 freest nations into quartiles, and rank them by firearms ownership. The lowest ownership group has the worst scores on everything. The best scores for non-corruption are in the second highest quartile. In other respects, the top three quartiles are similar, except that the third quartile is weaker on PPP.

**Table 5. Firearms Ownership versus Indices among the Freest Countries in the World, by quartiles**

<i>Quartile</i>	<i>Firearms Per 1,000 Population</i>	<i>Corruption Perceptions Index</i>	<i>PPP</i>	<i>Index of Economic Freedom</i>
1	484	7.64	24.14	72.36
2	255	8.9	20.83	75.88
3	120	7.52	37.50	75.97
4	31	5.74	49.00	68.84

Finally, we tested the data for statistical significance.<sup>114</sup> We found three statistically significant relationships:

- more guns, less corruption;
- more guns, more economic freedom; and
- more guns, more economic success.

These statistically significant associations do not indicate the cause-and-effect relationships—such as whether guns are a cause or a consequence of prosperity, or whether the relationship runs both ways. That topic is discussed in the next Part of this Article.<sup>115</sup> Charts for each of these relationships are below.

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<sup>114</sup> See *infra* tbl.8, pp. \_\_ for calculations.

<sup>115</sup> As noted in Table 8, dropping the U.S. from the dataset results in the guns-PPP relationship no longer being statistically significant. We do not believe that there is good reason to discard the U.S. from the data simply because it has notably more guns per capita than the next-closest nations of Yemen and Finland. To the contrary, if guns have any freedom-related effect at all (pro or con), it might be expected that the effect would be most noticeable in the nation with the most per-capita guns, so that nation should be included in the data analysis.

Moreover, our results are calculated with each nation counting as a single, equal unit, not adjusted for population. The U.S. has no more weight than does the Netherlands. The U.S. raises the per capita firearms ownership rate for any group in which it is included, but even without the U.S., the top quarter and quintile for firearms have much higher firearms ownership than lower groups. The U.S. has a PPP of 4 and an *Index of Economic Freedom* of 82, both among the best in the world, and thus improves the economic grades for any group in which it is included. See *infra* tbl.6, pp. \_\_. The U.S. corruption score is 7.3, which is good by world standards, but relatively weak among the freest countries. *Id.* Since 25 other countries have perfect scores on political and civil freedom, eliminating the U.S. would make little difference in the relationship between firearms and political or civil freedom.

In 1948, the United States had .36 guns per person. Brief for The International Law Enforcement Educators and Trainers Ass’n, et al. as Amici Curiae Supporting Respondents at App. 13-15, *District of Columbia v. Heller*, 554 S.Ct. 2783 (2008) (No. 07-290). It would have been accurate to describe the U.S. in 1948 as a nation with a notably high level of gun ownership, and as a nation where the cultural values often associated with gun ownership (such as self-reliance, and vigilance about freedom) were an important part of the national culture. Using the modern data, over half the countries in the top quintile for gun ownership have a firearms ownership rate equal to or greater than that of the 1948 United States. The rest of the countries in the top quintile are not far behind. Accordingly, it seems reasonable to classify these countries, like the U.S. of 1948, as high-ownership nations, where the cultural values often associated with responsible gun ownership are common enough to play an important role in the national political culture.

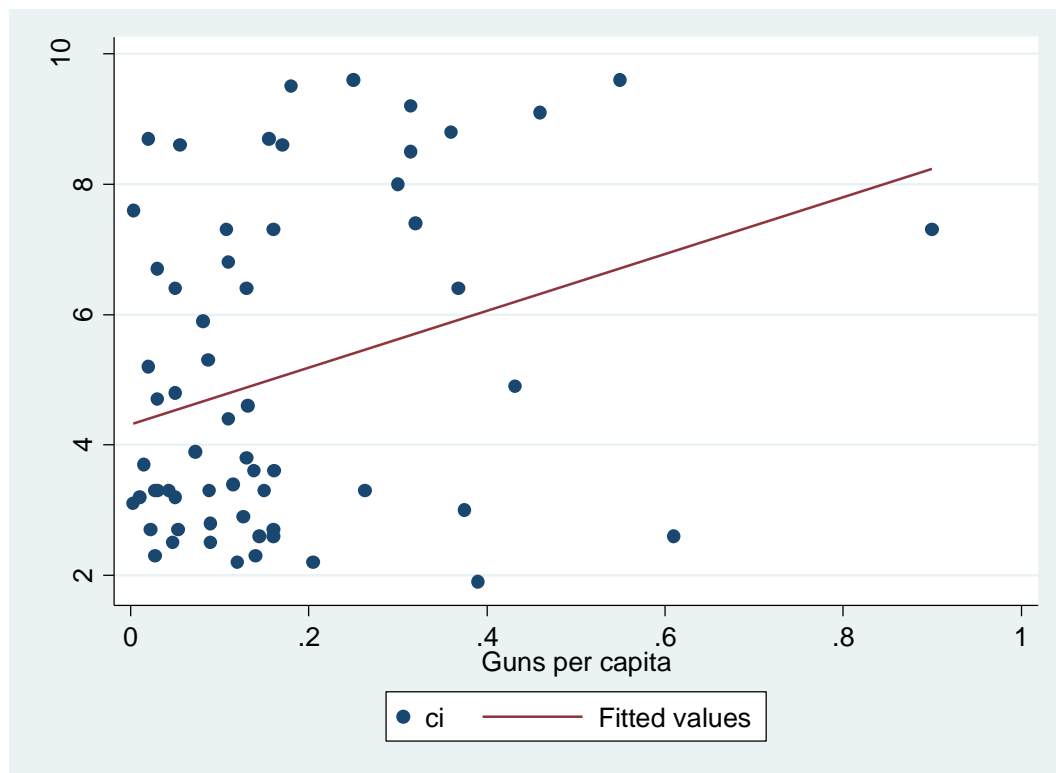
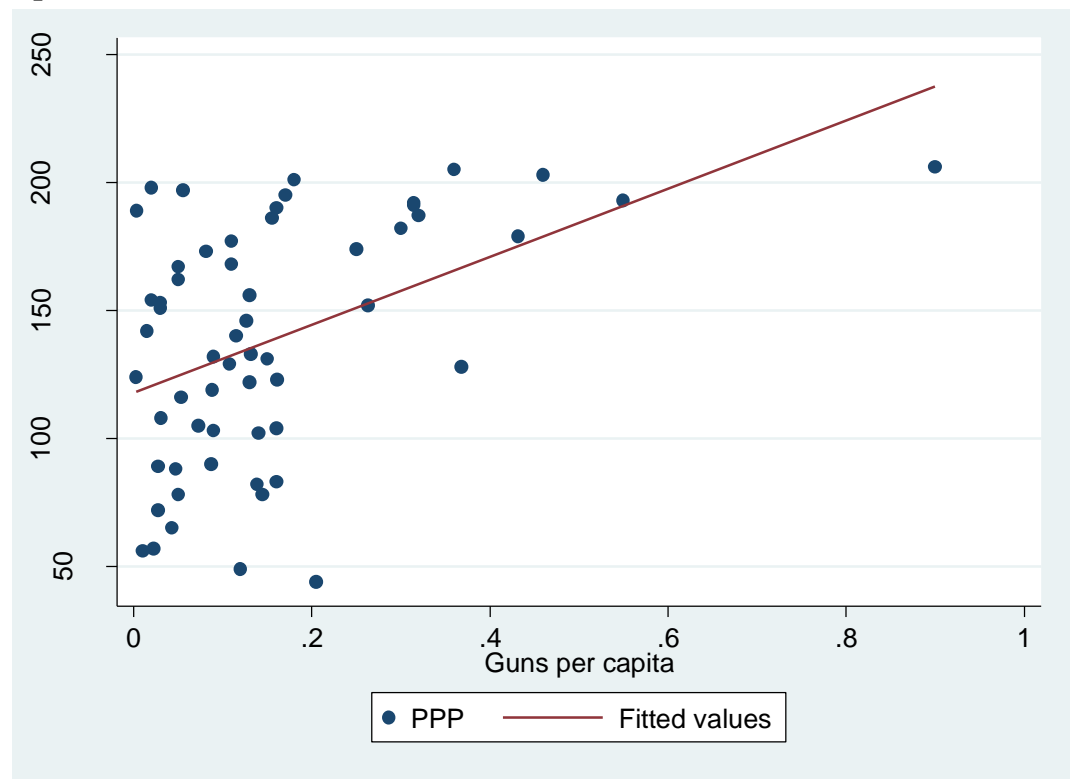
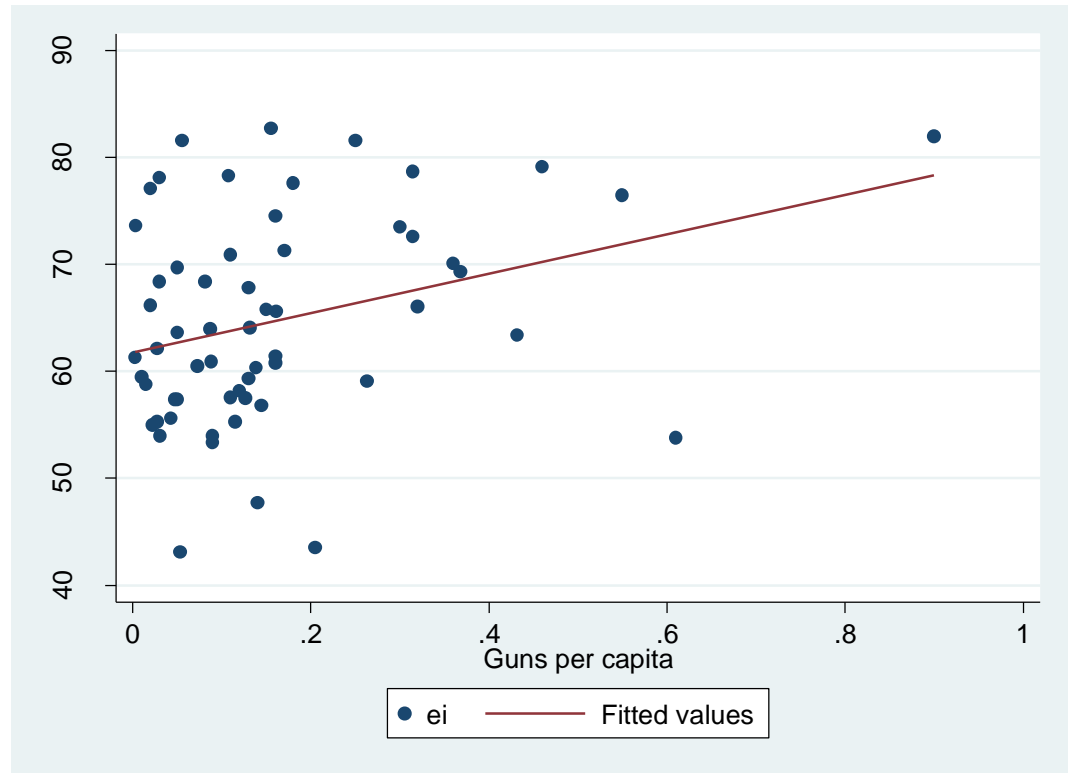
**Chart 1. Freedom from Corruption vs. Guns per capita**

Chart 2. Economic Success vs. Guns per capita





**Chart 3. Economic Freedom vs. Guns per capita**



### III. Cause and Effect

In Part III, we sketch out some causal mechanisms and suggest some ways in which guns and freedom can have positive or negative relationships. We define “freedom” broadly to include each of the following measures: political and civil freedom (*Freedom in the World*), freedom from corrupt government (*Corruption Perceptions Index*), economic freedom (*Index of Economic Freedom*), and economic success (PPP). We argue that high levels of prosperity can provide a person with the means to exercise lifestyle and other personal choices. The various causal mechanisms are by no means mutually exclusive. Some of them may reinforce each other. Although only some of the relationships between guns and freedom are statistically significant, we discuss all possible relationships, both positive and negative. Even though a particular relationship might not be statistically significant in general, the relationship might be important in a particular country.

## A. Freedom Causes Guns

One set of relationships to examine is whether increased levels of freedom tend to lead to increased levels of gun ownership. For example, greater economic freedom and economic success lead to greater prosperity, which in turn gives people more money to buy all sorts of consumer goods, including firearms. This explanation is supported by evidence from the last half-century in the United States. Although business regulation has grown over the last half-century, economic freedom has also increased in the United States. Federal tax rates are far lower: the top rate was 92% in 1952, and 35% in 2007.<sup>116</sup> Free trade agreements have greatly reduced international trade barriers.<sup>117</sup> The abolition of Jim Crow laws has allowed much greater participation by black people in the economy.<sup>118</sup> Thus, it is not surprising that per capita gun ownership in the U.S. has risen by 158% over the last half-century.<sup>119</sup> America formerly had about one gun for every three people. Now, there is nearly one gun for every American.<sup>120</sup>

Non-corruption could also increase gun ownership. If two nations have very similar statutory gun laws, but the first nation is much less corrupt than the second, then citizens in the first nation will have an easier time getting permits or licenses, completing purchases which need government approval, and so on. As noted above, there is a statistically significant relationship between higher per capita gun ownership and freedom from corruption, economic freedom, and economic success. Even within the countries with perfect scores for political and civil freedom, the third with the lowest gun ownership rates had a notably worse *Corruption Perceptions Index* than the other two.

Germany has a very extensive set of gun regulations (as it does for many other activities).<sup>121</sup> Yet despite high regulation, Germany is 11<sup>th</sup> out

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<sup>116</sup> INTERNAL REVENUE SERVICE, TABLE 23: U.S. INDIVIDUAL INCOME TAX: PERSONAL EXEMPTIONS AND LOWEST AND HIGHEST BRACKET TAX RATES, AND TAX BASE FOR REGULAR TAX, *available at* <http://www.irs.gov/taxstats/article/0,,id=175910,00.html>.

<sup>117</sup> DOUGLAS IRWIN, *FREE TRADE UNDER FIRE* (2d ed. 2005)(providing empirical data on the benefits of free trade to Americans).

<sup>118</sup> See Richard H. Pildes, *Symposium: The Canon(s) of Constitutional Law: Democracy, Anti-democracy, and the Canon*, 17 CONST. COMMENT 295, 304-315 (2000)(discussing Jim Crow laws).

<sup>119</sup> Brief for The International Law Enforcement Educators and Trainers Ass'n, et al. as Amici Curiae Supporting Respondents at App. 13-15, *District of Columbia v. Heller*, 554 S.Ct. 2783 (2008) (No. 07-290).

<sup>120</sup> In 1948, there were approximately 53 million guns in a nation of 146,091,000 people (0.36 guns per capita). *Id.* In 2004, there were approximately 274 million guns in a nation of 293,655,000 people (0.93 guns per capita). *Id.*

<sup>121</sup> Waffengesetz [Weapons Act], Oct. 16, 2002 BGBl. I (F.R.G.).

of the 59 nations in per-capita ownership rates.<sup>122</sup> The explanation may be that Germany is non-corrupt and prosperous: the German gun licensing system is generally administered according to objective criteria, and there is no expectation that a prospective gun owner might have to bribe a police officer to get a license. Further, Germany's PPP is better than 41 of the 48 countries it outranks in per capita ownership.<sup>123</sup> As shown in Table 4, even within the countries with excellent economic and political-civil freedom, the lowest third for firearms per capita were much lower in PPP than the other two thirds.<sup>124</sup>

Another possibility is that political liberty and/or civil liberty help cause gun ownership. Political systems which are more open may allow people who own guns, who want to own guns, or who want other people to have the choice, to participate more effectively in the political system, and to have their concerns addressed.<sup>125</sup> In Canada, for example, firearms rights advocates played an important role in the 2006 election of Stephen Harper's Conservative party.<sup>126</sup> The Harper government created an amnesty period for people who disobeyed the previous Liberal government's gun registration deadline,<sup>127</sup> waived fees for certain gun licenses,<sup>128</sup> also deferred a regulation which would have raised the price of all new guns imported into or manufactured in Canada by about 200 Canadian Dollars.<sup>129</sup>

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<sup>122</sup> See *infra* tbl.7, pp\_\_.

<sup>123</sup> See *infra* tbl.7, pp\_\_.

<sup>124</sup> See *supra* tbl.4 pp\_\_.

<sup>125</sup> In theory, an open and responsive political system would also be open and responsive to citizen activists who favor more restrictions on guns. However, in most nations, gun control tends to be a top-down process. Advocates of greater restrictions are more likely to already have the sympathy of the statist central authorities, so the restrictionists have less need of mobilizing a large citizen movement, or of government which responds to citizen movements

<sup>126</sup> Cf. Harold D. Clarke, Allan Kornberg, Thomas Scotto & Joe Twyman, *Flawless Campaign, Fragile Victory: Voting in Canada's 2006 Federal Election*, 37 PS: POLITICAL SCIENCE & POLITICS 815, 816 (2006)(noting gun control as an important issue in the election).

<sup>127</sup> Order Declaring an Amnesty Period SOR/2006-95 (Can.).

<sup>128</sup> Regulations Amending the Firearms Fees Regulations (Firearms Act) SOR 2006-386 (Can.).

<sup>129</sup> Press Release, Peter Tilson, Member, Canadian Parliament, Government Defers Ineffective Firearm Marking Regulations (Feb. 18, 2008) available at [http://www.davidtilson.ca/EN/press\\_release/government\\_defers\\_ineffective\\_firearms\\_marking\\_regulations/](http://www.davidtilson.ca/EN/press_release/government_defers_ineffective_firearms_marking_regulations/); Firearms Marking Regulations SOR/2004-275(Can.). The regulation was ostensibly required to comply with an international treaty improving the marking standards for guns, but no other party to the treaty had interpreted the marking provisions in such an extreme and expensive way.

Civil liberty, such as freedom of religion and speech, could also be a factor in higher gun ownership. Civil liberty can foster a culture of individual self-actualization, in which a person feels that he can control the course of his life by choosing his religion (or choosing not to be religious), freely saying what he thinks and reading whatever he wants. Such a culture may also encourage people to exercise personal responsibility in other ways, such as by choosing to own a tool to protect themselves and their families rather than entirely relying on the state, or by providing some food for the family by hunting rather than having to buy all of one's food from supermarkets.

## **B. Guns Cause Freedom**

One way that guns cause freedom is by facilitating revolutions or wars of independence that replace one regime, often a colonial one, with a freer government. Examples of successful revolutions or wars of independence in which privately-owned arms played an important role are the American revolution against Britain,<sup>130</sup> the Greek revolution against the Ottoman Empire,<sup>131</sup> the Israeli revolution against Britain,<sup>132</sup> the Irish revolution against Britain,<sup>133</sup> and the Swiss revolution against the Austrian Empire.<sup>134</sup> Long after the new nation has secured its freedom, high levels of gun ownership may persist or grow even higher, partly as a result of the collective positive memory of the freedom enhancing benefits of arms.

Guns in citizen hands may also help protect an already free nation by contributing to the defeat of a foreign invader, or by helping to deter a foreign invasion. An example of the former is the American victory at the Battle of New Orleans in 1815.<sup>135</sup> An example of the latter is Swiss deterrence of Nazi invasion during World War II.<sup>136</sup>

Firearms can also promote freedom in more localized ways. During the 1950s and 1960s, American civil rights workers were able to protect

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<sup>130</sup> LAWRENCE E. BABITS, *A DEVIL OF A WHIPPING: THE BATTLE OF COWPENS* (1998); MARK W. KWASNY, *WASHINGTON'S PARTISAN WAR: 1775–1783* (1996).

<sup>131</sup> THOMAS GORDON, *HISTORY OF THE GREEK REVOLUTION* (Booksurge Publishing 2000)(1832).

<sup>132</sup> URI MILSTEIN, *HISTORY OF ISRAEL'S WAR OF INDEPENDENCE* (1997).

<sup>133</sup> PETER HART, *THE I.R.A. AT WAR 1916–1923* (2004).

<sup>134</sup> DAVID B. KOPEL, *THE SAMURAI, THE MOUNTIE, AND THE COWBOY: SHOULD AMERICA ADOPT THE GUN CONTROLS OF OTHER DEMOCRACIES* 279–80 (1992).

<sup>135</sup> Although, unbeknownst to the combatants, a peace treaty had already been signed, had the British won at New Orleans it is unlikely they would have abandoned the city, but instead would have held on to their chokehold on the economy of much of the territories of the United States. See REMINI, *supra* note \_\_ at 194–95.

<sup>136</sup> HALBROOK, *supra* note \_\_ at 119.

themselves from the Ku Klux Klan because so many civil rights workers had guns.<sup>137</sup> The father of U.S. Secretary of State Condoleezza Rice carried a shotgun as part of a neighborhood civil rights safety patrol, which is why Secretary Rice opposes the government having a registration list of guns and their owners.<sup>138</sup> Similarly, former First Lady Eleanor Roosevelt carried a handgun for protection against Klansmen during her civil rights travels in the South in the 1950s.<sup>139</sup>

More broadly, the exercise of one right may, for some persons, foster more positive attitudes about rights in general. This is one reason why American gun organizations such as the National Rifle Association and Gun Owners of America are strong supporters of First Amendment free speech rights, Fourth Amendment freedom from unreasonable or warrantless searches, Fifth Amendment property rights, and Tenth Amendment federalism.

### C. Freedom Reduces Guns

Under certain conditions, increased freedom can lead to decreases in gun ownership. Under U.N. auspices, governments in nations such as Mali have attempted to entice formerly oppressed tribal groups to surrender their guns.<sup>140</sup> The promise is that the government will treat the tribal groups better, be less corrupt, be more respectful of due process, and so on, once the guns are surrendered.

For several years, the Mali disarmament program was successful. More recently, the government has not been keeping its promises, and the Tuareg tribes in northern Mali have been re-arming.<sup>141</sup> Even so, Mali shows that there can be circumstances in which greater freedom leads to fewer guns. In other nations, such as the Netherlands, a long history of democracy, respect for the rule of law, and clean government may result in

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<sup>137</sup> See e.g., John Salter, *Social Justice Community Organizing and the Necessity for Protective Firearms*, in *THE GUN CULTURE AND ITS ENEMIES* 19, 19–23 (William R. Tonso ed., 1990).

<sup>138</sup> Barry Schweid, *Rice Says Gun Rights Are as Important as Right to Free Speech and Religion*, SIGN ON SAN DIEGO, May 11, 2005, available at <http://www.signonsandiego.com/news/nation/20050511-1803-rice-guns.html>.

<sup>139</sup> Dave Kopel, Paul Gallant & Joanne D. Eisen, *Her Own Bodyguard: Gun-packing First Lady*, NAT'L. REV. ONLINE, Jan. 24, 2002, available at <http://www.nationalreview.com/kopel/kopel012402.shtml>.

<sup>140</sup> David B. Kopel, Paul Gallant & Joanne D. Eisen, *Microdisarmament: The Consequences for Public Safety and Human Rights*, 73 UMKC L. REV. 969, 1005–06 (2005).

<sup>141</sup> *Id.* at 1007–08.

people believing that they have no need for guns as a safeguard against tyranny.

### D. Guns Reduce Freedom

There are many modern nations where it is easy to see how the widespread presence of guns in the wrong hands reduces freedom. Guns in the hands of warlords in the Ivory Coast,<sup>142</sup> the Congo,<sup>143</sup> and in Sudan/Uganda<sup>144</sup> (the Lord's Resistance Army) wreak havoc on civilian populations, making it nearly impossible for civil society and its attendant freedoms to exist. Guns in the hands of terrorists and extremists in places such as Lebanon, Gaza, the West Bank, and other places in the Middle East or South Asia are used to assassinate moderates for exercising their right of free speech, to murder women for not submitting to rigid gender restrictions, and to kill people for exercising their freedom to choose their own religion.<sup>145</sup>

### E. Gun Cultures and Freedom

One thing we know from the data is that the relationship between guns and freedom is often indirect. For example, Norway has high levels of guns and of religious freedom,<sup>146</sup> but that is not because gun owners constantly protect churches from government attacks.

Accordingly, it may be helpful to consider the effect of *gun culture*, rather than direct uses of guns, as a partial explanation for this Article's findings. We should first explain what we mean by gun culture. To a firearms prohibition advocate in Great Britain, gun culture is an epithet, and it conjures images of dangerous gangs in downtrodden cities such as

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<sup>142</sup> Nicolas Florquin & Eric G. Berman, *Armed Groups and Small Arms in ECOWAS Member States* in ARMED AND AIMLESS: ARMED GROUPS, GUNS, AND HUMAN SECURITY IN THE ECOWAS REGION 239, 239–61 (Nicolas Florquin & Eric G. Berman editors)(2005).

<sup>143</sup> See generally Bryan Mealer, ALL THINGS MUST FIGHT TO LIVE: STORIES OF WAR AND DELIVERANCE IN CONGO (2008).

<sup>144</sup> See, e.g., International Criminal Court, *Situation in Uganda*, no. ICC-02/04 (compilation of documents in I.C.C. prosecution of Lord's Resistance Army leaders), <http://www.icc-cpi.int/cases/UGD.html>

<sup>145</sup> Two terrorist organizations, Hezbollah and Hamas, incorporate a Kalashnikov rifle in their flags. Anti-Defamation League, International Terrorist Symbols Database, <http://www.adl.org/terrorism/symbols/iqb.asp>; <http://www.adl.org/terrorism/symbols/hezbollah.asp>.

<sup>146</sup> See *infra* tbl.7, pp\_\_.

Manchester, dubbed “Gunchester” by some police, carrying illegal handguns for criminal purposes.<sup>147</sup>

It is easy to see how a destructive gun culture, such as that of the British gangs, can harm a country’s freedom ratings. For example, higher crime rates will reduce a nation’s prosperity, and may lead to repressive government actions that reduce civil freedom. Great Britain, for example, has drastically weakened its centuries-old rule against double jeopardy,<sup>148</sup> eliminated jury trials in many civil cases,<sup>149</sup> and given the police the power to issue on-the-spot fines without due process.<sup>150</sup>

“Gun culture” in America, however, has a benign connotation. People who use the term tend to be thinking about images such as father taking his son on a hunting trip, or of young people practicing target shooting with .22 smallbore rifles, under the supervision of expert marksmen at a gun club. Rather tellingly, in America, even elected officials who are the strongest proponents of much stricter anti-gun laws almost never criticize “the gun culture,” but instead insist on their devotion to the Second Amendment.<sup>151</sup> It seems reasonable to assume that countries which have relatively more guns per capita (e.g., the United States, France, Switzerland) will have a much stronger gun culture of the benign type, than will countries such as the Netherlands, Japan, or Bolivia, where lawful gun

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<sup>147</sup> PETER SQUIRES, GUN CULTURE OR GUN CONTROL? 99–106 (2000).

<sup>148</sup> Criminal Procedure and Investigations Act, 1996 c. 25 § 54 (Eng.); Criminal Justice Act, 2003 c. 44, §§ 75-97 (Eng.).

<sup>149</sup> Sally Lloyd-Bostock & Cheryl Thomas, *Decline of the "Little Parliament": Juries and Jury Reform in England and Wales*, 62 LAW & CONTEMP. PROBS. 7, 7–8 (1999).

<sup>150</sup> Paul Stokes and Matt Born, *Driver Who Turned in Stowaways is Fined*, TELEGRAPH, Jun. 19 2004, <http://www.telegraph.co.uk/news/uknews/1355984/Driver-who-turned-in-stowaways-is-fined.html>; *On-the-spot Fines to be Extended*, Guardian May 14, 2003, <http://www.guardian.co.uk/politics/2003/may/14/immigrationpolicy.ukcrime>.

<sup>151</sup> For example, when it was revealed that presidential candidate Barack Obama, speaking at a private gathering of wealthy donors in San Francisco, had claimed that small town people “cling to guns” because they are “bitter” about economic problems, the next day he tried to claim that he had not been criticizing the culture of gun ownership. He explained that in San Francisco, “I didn’t say it as well as I should have, because the truth is is that these traditions that are passed on from generation to generation—those are important.” He tried to give the impression that bitter clinging was almost a virtue: “When you’re bitter, you turn to what you can count on.” Mayhill Fowler, *Obama Exclusive (Audio): On V.P And Foreign Policy, Courting the Working Class, and Hard-Pressed Pennsylvanians*, HUFFINGTON POST, Apr. 11, 2008 (audio of Obama’s “bitter” remarks in San Francisco), available at [http://www.huffingtonpost.com/mayhill-fowler/obama-exclusive-audio-on\\_b\\_96333.html](http://www.huffingtonpost.com/mayhill-fowler/obama-exclusive-audio-on_b_96333.html). Chris Welch, *Obama on 'bitter' remark: 'I didn't say it as well as I should have'*, CNN POLITICAL TICKER, Apr. 12, 2008, available at <http://politicalticker.blogs.cnn.com/2008/04/12/obama-on-bitter-comments-i-didnt-say-it-as-well-as-i-should/>.

ownership is rare. A full explanation for why citizens in some nations are more rights-conscious than in other nations is beyond the scope of this Article. However, we suggest that one important factor in rights-consciousness may be the presence of a thriving benign gun culture.

Almost every legitimate purpose for which a person might own a gun can strengthen the person's feelings of competence and self-control. The hunter thinks, "I am a capable outdoorsman. I can put food on my family's table, and don't have to rely entirely on the supermarket." The defensive gun owner thinks, "I am ready to protect my family, because I know that the police may not come in time." The target shooter thinks, "I am skilled at a precise, challenging sport." Many gun owners may think, "If, God forbid, my country ever succumbed to tyranny, I could help my community resist." Almost all gun owners have made the decision, "Even though some people claim that guns are too dangerous, I am capable of handling a powerful tool safely."

For the countries in the top quintile for gun ownership (at least one gun per three persons), it is reasonable to assume that a many people in those countries have personal experience with a benign, individual-affirming gun culture. Participation in a benign gun culture is hardly the only way in which a person can have personal experiences which affirm and strengthen the individual's beliefs in his or her own competence. But when a country has a benign, thriving gun culture, it is certain that there are great many persons who do have such experiences, and who do so in a context (successful, safe handling of potentially deadly tools) which is especially likely to induce and strengthen feelings of personal competence. The effect of a gun culture in promoting greater levels of individual competence and personal responsibility may be one reason for the statistically significant association between higher rates of gun ownership and higher rates of freedom from corruption, of economic freedom, of and economic success.

## **Conclusion**

There are many causal mechanisms by which guns and freedom can advance or inhibit each other. The mechanisms that are most influential at a given point in time can vary widely from nation to nation. Historically and today, we can find ways in which freedom has increased guns, guns have increased freedom, freedom has reduced guns, and guns have reduced freedom. International firearms scholars, except those based in North America, have tended to focus their research only on the latter two relationships, while ignoring the first two. Some of the more enthusiastic



proponents of gun prohibition have asserted that the relationship between freedom and guns is always negative.

The data in this Article reveal a more complex picture. As general (but not invariable rule), countries with more guns have more economic freedom, less corruption, and more economic success. The broad international data, for any of the measures of freedom, do not support theories that more guns means less freedom. The data provide reason for caution about embracing a global agenda of reducing civilian gun ownership. There may be particular countries where reductions might enhance freedom, but the data raise serious doubts about whether the gun-reducing agenda makes sense as a categorical imperative, at least if freedom ranks highly in one's hierarchy of values.

When we acknowledge that guns can have a positive *and* a negative relationship with freedom, then we can begin to look for more sophisticated, carefully tailored approaches to gun policy, which attempt to address the negative effects, and which are careful not to reduce the apparently significant positive effects. Such an approach offers a better possibility of enhancing freedom than does a simplistic program that only considers negative effects.

**Table 6, All UN member-states, ratings in all available categories**

UN Members	FH 2007					Economic Ratings			
Year(s) covered	2006				2006	2006	2007		
Country	PR	CL	AVE	Rating	CI	PPP	EI	Rating	Firearms per capita
Afghanistan	5	5	5	PF					
Albania	3	3	3	PF	2.6	127	61.4	ModF	0.160
Algeria	6	5	6	NF		112	52.2	MU	
Andorra	1	1	1	F					
Angola	6	5	6	NF	2.2	166	43.5	R	0.205
Antigua and Barbuda	2	2	2	F		72			
Argentina	2	2	2	F	2.9	64	57.5	MU	0.127
Armenia	5	4	5	PF	2.9	126	69.4	ModF	
Australia	1	1	1	F	8.7	24	82.7	F	0.155
Austria	1	1	1	F	8.6	15	71.3	MF	0.170
Azerbaijan	6	5	6	NF	2.4	124	55.4	MU	
Bahamas	1	1	1	F			71.4	MF	
Bahrain	5	5	5	PF	5.7	50	68.4	ModF	
Bangladesh	4	4	4	PF	2.0	167	47.8	R	
Barbados	1	1	1	F	6.7		70.5	MF	
Belarus	7	6	7	NF	2.1	90	47.4	R	
Belgium	1	1	1	F	7.3	20	74.5	MF	0.160
Belize	1	2	2	F	3.5	113	63.7	ModF	
Benin	2	2	2	F	2.5	191	54.8	MU	
Bhutan	6	5	6	NF	6.0				
Bolivia	3	3	3	PF	2.7	153	55.0	MU	0.022
Bosnia-Herzegovina	3	3	3	PF	2.9		54.7	MU	
Botswana	2	2	2	F	5.6	75	68.4	ModF	
Brazil	2	2	2	F	3.3	91	60.9	ModF	0.088
Brunei Darussalam	6	5	6	NF					
Bulgaria	1	2	2	F	4.0	85	62.2	ModF	
Burkina Faso	5	3	4	PF	3.2	184	55.0	MU	
Burundi	5	5	5	PF	2.4	209	46.8	R	
Cambodia	6	5	6	NF	2.1	152	56.5	MU	
Cameroon	6	6	6	NF	2.3	165	54.4	MU	
Canada	1	1	1	F	8.5	19	78.7	MF	0.315
Cape Verde	1	1	1	F		122	58.4	MU	
Central Afr. Rep.	5	4	5	PF	2.4	186	50.3	MU	

Chad	6	5	6	NF	2.0	188	46.4	R	
Chile	1	1	1	F	7.3	81	78.3	MF	0.108
China	7	6	7	NF	3.3	102	54.0	MU	0.031
Colombia	3	3	3	PF	3.9	105	60.5	ModF	0.073
Comoros	3	4	4	PF		173			
Congo (D.R.)	5	6	6	NF	2.0	207			
Congo (Rep.)	6	5	6	NF	2.2	197	43.0	R	
Costa Rica	1	1	1	F	4.1	83	65.1	ModF	
Cote d'Ivoire	6	6	6	NF	2.1	179	55.5	MU	
Croatia	2	2	2	F	3.4	70	55.3	MU	0.115
Cuba	7	7	7	NF	3.5		29.7	R	
Cyprus	1	1	1	F	5.6	45	73.1	MF	
Czech Republic	1	1	1	F	4.8	48	69.7	ModF	0.050
Denmark	1	1	1	F	9.5	9	77.6	MF	0.180
Djibouti	5	5	5	PF		160	52.6	MU	
Dominica	1	1	1	F	4.5	114			
Dominican Republic	2	2	2	F	2.8	95	56.7	MU	
Ecuador	3	3	3	PF	2.3	138	55.3	MU	0.027
Egypt	7	6	7	NF	3.3	136	53.2	MU	
El Salvador	2	3	3	F	4.0	129	70.3	MF	
Equatorial Guinea	7	6	7	NF	2.1	84	53.2	MU	
Eritrea	7	6	7	NF	2.9	194			
Estonia	1	1	1	F	6.7	57	78.1	MF	0.030
Ethiopia	5	5	5	PF	2.4	190	54.4	MU	
Fiji	6	4	5	PF		119	59.8	MU	
Finland	1	1	1	F	9.6	17	76.5	MF	0.550
France	1	1	1	F	7.4	23	66.1	ModF	0.320
Gabon	6	4	5	PF	3.0	130	53.0	MU	
Gambia (The)	4	4	4	PF	2.5	176	57.6	MU	
Georgia	3	3	3	PF	2.8	147	68.7	ModF	
Germany	1	1	1	F	8.0	28	73.5	MF	0.300
Ghana	1	2	2	F	3.3	157	58.1	MU	
Greece	1	2	2	F	4.4	42	57.6	MU	0.110
Grenada	1	2	2	F	3.5	99			
Guatemala	3	4	4	PF	2.6	135	61.2	ModF	
Guinea	6	5	6	NF	1.9	163	55.1	MU	
Guinea-Bissau	4	4	4	PF		203	45.7	R	
Guyana	2	3	3	F	2.5	136	58.2	MU	
Haiti	4	5	5	PF	1.8	180	52.2	MU	

Honduras	3	3	3	PF	2.5	148	60.3	ModF	
Hungary	1	1	1	F	5.2	56	66.2	ModF	0.020
Iceland	1	1	1	F	9.6	10	77.1	MF	
India	2	3	3	F	3.3	145	55.6	MU	0.043
Indonesia	2	3	3	F	2.4	143	55.1	MU	
Iran	6	6	6	NF	2.7	94	43.1	R	0.053
Iraq	6	6	6	NF	1.9				0.390
Ireland	1	1	1	F	7.4	14	81.3	F	
Israel	1	2	2	F	5.9	37	68.4	ModF	0.081
Italy	1	1	1	F	4.9	31	63.4	ModF	0.432
Jamaica	2	3	3	F	3.7	141	66.1	ModF	
Japan	1	2	2	F	7.6	21	73.6	MF	0.003
Jordan	5	4	5	PF	5.3	120	64.0	ModF	0.087
Kazakhstan	6	5	6	NF	2.6	101	60.4	ModF	
Kenya	3	3	3	PF	2.2	185	59.4	MU	
Kiribati	1	1	1	F		89			
Korea (North)	7	7	7	NF			3.0	R	
Korea (South)	1	2	2	F	5.1	44	68.6	ModF	
Kuwait	4	5	5	PF	4.8	30	63.7	ModF	
Kyrgyzstan	5	4	5	PF	2.2	175	59.9	MU	
Lao P.D.R.	7	6	7	NF	2.6	172	49.1	R	
Latvia	1	1	1	F	4.7	65	68.2	ModF	
Lebanon	4	4	4	PF	3.6	128	60.3	ModF	0.139
Lesotho	2	3	3	F	3.2	139	54.1	MU	
Liberia	3	4	4	PF					
Libya	7	7	7	NF	2.7		34.5	R	
Liechtenstein	1	1	1	F		3			
Lithuania	1	1	1	F	4.8	67	72.0	MF	
Luxembourg	1	1	1	F	8.6	1	79.3	MF	
Macedonia	3	3	3	PF	2.7	106	60.8	ModF	0.160
Madagascar	3	3	3	PF	3.1	198	61.4	ModF	
Malawi	4	3	4	PF	2.7	207	55.5	MU	
Malaysia	4	4	4	PF	5.0	80	65.8	ModF	
Maldives	6	5	6	NF					
Mali	2	2	2	F	2.8	193	53.7	MU	
Malta	1	1	1	F	6.4	54	67.8	ModF	0.130
Marshall Islands	1	1	1	F					
Mauritania	5	4	5	PF	3.1	158	53.2	MU	
Mauritius	1	2	2	F	5.1	71	69.0	ModF	

Mexico	2	2	2	F	3.3	79	65.8	ModF	0.150
Micronesia	1	1	1	F		98			
Moldova	3	4	4	PF	3.2	154	59.5	MU	0.010
Monaco	2	1	2	F					
Mongolia	2	2	2	F	2.8	168	60.1	ModF	
Montenegro	3	3	3	PF					
Morocco	5	4	5	PF	3.2	132	57.4	MU	0.050
Mozambique	3	4	4	PF	2.8	189	56.6	MU	
Myanmar (Burma)	7	7	7	NF	1.9		40.1	R	
Namibia	2	2	2	F	4.1	97	63.8	ModF	
Nauru	1	1	1	F					
Nepal	5	4	5	PF	2.5	178	54.0	MU	
Netherlands	1	1	1	F	8.7	12	77.1	MF	0.020
New Zealand	1	1	1	F	9.6	36	81.6	F	0.250
Nicaragua	3	3	3	PF	2.6	142	62.7	ModF	
Niger	3	3	3	PF	2.3	203	53.5	MU	
Nigeria	4	4	4	PF	2.2	195	52.6	MU	
Norway	1	1	1	F	8.8	5	70.1	MF	0.360
Oman	6	5	6	NF	5.4	63	63.9	ModF	
Pakistan	6	5	6	NF	2.2	161	58.2	MU	0.120
Palau	1	1	1	F				R	
Panama	1	2	2	F	3.1	103	65.9	ModF	
Papua New Guinea	3	3	3	PF	2.4	164			
Paraguay	3	3	3	PF	2.6	132	56.8	MU	0.144
Peru	2	3	3	F	3.3	121	62.1	ModF	0.028
Philippines	3	3	3	PF	2.5	122	57.4	MU	0.048
Poland	1	1	1	F	3.7	68	58.8	MU	0.015
Portugal	1	1	1	F	6.6	49	66.7	ModF	
Qatar	6	5	6	NF	6.0	16	60.7	ModF	
Romania	2	2	2	F	3.1	86	61.3	ModF	0.003
Russian Federation	6	5	6	NF	2.5	78	54.0	MU	0.090
Rwanda	6	5	6	NF	2.5	187	52.1	MU	
Saint Kitts and Nevis	1	1	1	F		74			
Saint Lucia	1	1	1	F		111			
Saint Vincent & Grenadines	2	1	2	F		110			
Samoa	2	2	2	F		116			
San Marino	1	1	1	F		11			
Sao Tome &	2	2	2	F					

Principe									
Saudi Arabia	7	6	7	NF	3.3	58	59.1	MU	0.263
Senegal	2	3	3	F	3.3	177	58.8	MU	
Serbia	3	2	3	F	3.0				0.375
Seychelles	3	3	3	PF	3.6	60			
Sierra Leone	4	3	4	PF	2.2	200	48.4	R	
Singapore	5	4	5	PF	9.4	26	85.7	F	
Slovakia	1	1	1	F	4.7	59	68.4	ModF	0.030
Slovenia	1	1	1	F	6.4	43	63.6	ModF	0.050
Solomon Islands	4	3	4	PF		170			
Somalia	7	7	7	NF					
South Africa	2	2	2	F	4.6	77	64.1	ModF	0.132
Spain	1	1	1	F	6.8	33	70.9	MF	0.110
Sri Lanka	4	4	4	PF	3.1	134	59.3	MU	
Sudan	7	6	7	NF	2.0	171			
Suriname	2	2	2	F	3.0	96	52.6	MU	
Swaziland	7	5	6	NF	2.5	131	61.6	ModF	
Sweden	1	1	1	F	9.2	18	72.6	MF	0.315
Switzerland	1	1	1	F	9.1	7	79.1	MF	0.460
Syria	7	7	7	NF	2.9	144	48.2	R	
Tajikistan	6	5	6	NF	2.2	183	56.9	MU	
Tanzania	4	3	4	PF	2.9	205	56.4	MU	
Thailand	7	4	6	NF	3.6	87	65.6	ModF	0.161
Timor-Leste (East Timor)	3	4	4	PF	2.6				
Togo	6	5	6	NF	2.4	181	49.8	R	
Tonga	5	2	4	PF		92			
Trinidad and Tobago	2	2	2	F	3.2	62	71.4	MF	
Tunisia	6	5	6	NF	4.6	93	61.0	ModF	
Turkey	3	3	3	PF	3.8	88	59.3	MU	0.130
Turkmenistan	7	7	7	NF	2.2		42.5	R	
Tuvalu	1	1	1	F					
Uganda	5	4	5	PF	2.7	181	63.4	ModF	
Ukraine	3	2	3	F	2.8	107	53.3	MU	0.090
United Arab Emirates	6	5	6	NF	6.2	35	60.4	ModF	
United Kingdom	1	1	1	F	8.6	13	81.6	F	0.056
United States	1	1	1	F	7.3	4	82.0	F	0.900
Uruguay	1	1	1	F	6.4	82	69.3	ModF	0.368
Uzbekistan	7	7	7	NF	2.1	169	52.6	MU	

Vanuatu	2	2	2	F		151			
Venezuela	4	4	4	PF	2.3	108	47.7	R	0.140
Vietnam	7	5	6	NF	2.6	150	50.0	MU	
Yemen	5	5	5	PF	2.6	199	53.8	MU	0.610
Zambia	4	4	4	PF	2.6	196	57.9	MU	
Zimbabwe	7	6	7	NF	2.4	173	35.8	R	

**Table 7, All ratings for countries for which there are per capita firearms data**

Ranking by firearms per capita	FH 2007				TI	Economic Ratings			Firearm per citizen
	2006					2006	2007		
Country	PR	CL	AVE	Rating	2006	PPP	EI	Rating	
Romania	2	2	2	F	3.1	86	61.3	ModF	0.00
Japan	1	2	1.5	F	7.6	21	73.6	MF	0.00
Moldova	3	4	3.5	PF	3.2	154	59.5	MU	0.01
Poland	1	1	1	F	3.7	68	58.8	MU	0.01
Hungary	1	1	1	F	5.2	56	66.2	ModF	0.02
Netherlands	1	1	1	F	8.7	12	77.1	MF	0.02
Bolivia	3	3	3	PF	2.7	153	55.0	MU	0.02
Ecuador	3	3	3	PF	2.3	138	55.3	MU	0.02
Peru	2	3	2.5	F	3.3	121	62.1	ModF	0.02
Estonia	1	1	1	F	6.7	57	78.1	MF	0.03
Slovakia	1	1	1	F	4.7	59	68.4	ModF	0.03
China	7	6	6.5	NF	3.3	102	54.0	MU	0.03
India	2	3	2.5	F	3.3	145	55.6	MU	0.04
Philippines	3	3	3	PF	2.5	122	57.4	MU	0.04
Czech Republic	1	1	1	F	4.8	48	69.7	ModF	0.05
Morocco	5	4	4.5	PF	3.2	132	57.4	MU	0.05
Slovenia	1	1	1	F	6.4	43	63.6	ModF	0.05
Iran	6	6	6	NF	2.7	94	43.1	R	0.05
United Kingdom	1	1	1	F	8.6	13	81.6	F	0.05
Colombia	3	3	3	PF	3.9	105	60.5	ModF	0.07
Israel	1	2	1.5	F	5.9	37	68.4	ModF	0.08
Jordan	5	4	4.5	PF	5.3	120	64.0	ModF	0.08
Brazil	2	2	2	F	3.3	91	60.9	ModF	0.08
Russian Fed.	6	5	5.5	NF	2.5	78	54.0	MU	0.09
Ukraine	3	2	2.5	F	2.8	107	53.3	MU	0.09
Chile	1	1	1	F	7.3	81	78.3	MF	0.10
Greece	1	2	1.5	F	4.4	42	57.6	MU	0.11
Spain	1	1	1	F	6.8	33	70.9	MF	0.11
Croatia	2	2	2	F	3.4	70	55.3	MU	0.11
Pakistan	6	5	5.5	NF	2.2	161	58.2	MU	0.12
Argentina	2	2	2	F	2.9	64	57.5	MU	0.12
Malta	1	1	1	F	6.4	54	67.8	ModF	0.13
Turkey	3	3	3	PF	3.8	88	59.3	MU	0.13



South Africa	2	2	2	F	4.6	77	64.1	ModF	0.13
Lebanon	4	4	4	PF	3.6	128	60.3	ModF	0.13
Venezuela	4	4	4	PF	2.3	108	47.7	R	0.14
Paraguay	3	3	3	PF	2.6	132	56.8	MU	0.14
Mexico	2	3	2.5	F	3.3	79	65.8	ModF	0.15
Australia	1	1	1	F	8.7	24	82.7	F	0.15
Albania	3	3	3	PF	2.6	127	61.4	ModF	0.16
Belgium	1	1	1	F	7.3	20	74.5	MF	0.16
Macedonia	3	3	3	PF	2.7	106	60.8	ModF	0.16
Thailand	7	4	5.5	NF	3.6	87	65.6	ModF	0.16
Austria	1	1	1	F	8.6	15	71.3	MF	0.17
Denmark	1	1	1	F	9.5	9	77.6	MF	0.18
Angola	6	5	5.5	NF	2.2	166	43.5	R	0.20
New Zealand	1	1	1	F	9.6	36	81.6	F	0.25
Saudi Arabia	7	6	6.5	NF	3.3	58	59.1	MU	0.26
Germany	1	1	1	F	8.0	28	73.5	MF	0.30
Canada	1	1	1	F	8.5	19	78.7	MF	0.31
Sweden	1	1	1	F	9.2	18	72.6	MF	0.31
France	1	1	1	F	7.4	23	66.1	ModF	0.32
Norway	1	1	1	F	8.8	5	70.1	MF	0.36
Uruguay	1	1	1	F	6.4	82	69.3	ModF	0.36
Italy	1	1	1	F	4.9	31	63.4	ModF	0.43
Switzerland	1	1	1	F	9.1	7	79.1	MF	0.46
Finland	1	1	1	F	9.6	17	76.5	MF	0.55
Yemen	5	5	5	PF	2.6	199	53.8	MU	0.61
United States	1	1	1	F	7.3	4	82.0	F	0.90

The lists below indicate the annual edition of the *Small Arms Survey* where the per capita firearm data for each nation are found:

2007

Table 2.3, page 47 & Table 2.9, page 59: China, India, Philippines, Morocco, Iran, U.K., Colombia, Brazil, Russian Federation, Ukraine, Spain, Pakistan, Argentina, Turkey, South Africa, Australia, Thailand, Angola, Saudi Arabia, Germany, Canada, Sweden, France, Italy, Switzerland, Finland, Yemen, United States.

2005

Table 3.3, page 78: Japan

Table 3.9, page 91: Israel, Jordan, Lebanon

2004

Table 2.3, page 51. Bolivia, Ecuador, Peru, Chile, Venezuela, Paraguay, Mexico, Uruguay.

page 45. New Zealand.

2003

Tables 2.2 & 2.3, pp. 64-65: Romania, Moldova, Poland, Hungary, Netherlands, Estonia, Slovakia, Czech Republic, Slovenia, Croatia, Malta, Albania, Belgium, Macedonia, Austria, Denmark, Norway.

**Table 8. Relationship between firearms, corruption, purchasing power, and economic freedom**

Dependent Variable	Firearms Coefficient	T-Ratio
Corruption	4.362**	2.42
PPP	81.662**	2.18
Economic Freedom	18.421**	2.63
Dropping the US:		
Corruption	4.950**	2.26
PPP	74.986	1.62
Economic Freedom	15.903*	1.76

Notes: the number of observations is 59. PPP is rescaled so that higher purchasing power is reflected by higher values of PPP; \*\* indicates significant at .05 level, two-tailed, \* indicates significant at the .10 level, two-tailed.

Chart 4. Percent gun suicide vs. Guns per capita

