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Guns, Vices and Freedom, Oh My: A Preliminary Empirical Investigation

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ABSTRACT

This Essay estimates factors within States that are associated with per capita firearms ownership and the extent of legal restrictions concerning firearms. The metrics are: for the former, a proxy consisting of the fraction of suicides with a firearm; for the latter, Giffords Law Center's ratings of the restrictiveness of a State's regulation of firearms. For each, the Essay estimates the relationship between it and each of the levels of vices and freedom.

The Giffords score (more restrictions scored higher) is negatively related to the Cato Institute's measure of overall freedom and regulatory policy freedom but positively related to Cato's measure of personal freedom (after backing-out the gun rights component). The association of each with the proxy for per capita firearms ownership is of the opposite sign. The relationships between each and the components of personal freedom vary, with the signs changing depending on the aspect of personal freedom. Lastly, States that want the public to be populated with illegal immigrants wish to curtail substantially the right of members of the public to defend themselves with firearms.

Prior work has found that, among countries, freedom is positively related to per capita firearms ownership. The results in this Essay are consistent with the following view: Where a high level of per capita firearms ownership assures substantial freedom within a country, the relationship between per capita firearms ownership and components of personal freedom form a complex mosaic. The relationship may be positive as to some components of freedom and negative as to others.

The Giffords score is positively related to vanity and, if two influential States are removed, laziness. It is negatively related to excesses and vices. The proxy for per capita firearms ownership is negatively

* The title of this work is, of course, inspired by the sentence, "Lions and tigers, and bears, oh my!" *See* Goodreads, https://www.goodreads.com/quotes/445177-lions-and-tigers-and-bears-oh-my---dorothy-in (visited Jan. 18, 2024) (attributing the sentence to Judy Garland as Dorothy in *Wizard of Oz* (1939)), a phrase that has apparently morphed, *mutatis mutandis*, into common parlance. *See X's and Y's and Z's, oh my!,* The Free Dictionary, https://idioms.thefreedictionary.com/lions+and+tigers+and+bears+oh+my (visited Jan. 18, 2024) (stating the phrase is, "Used to express awe, apprehension, or fear regarding the presence, combination, or abundance of three particular things.").

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related to vanity and laziness, and positively related to jealously and excesses & vices.

I. INTRODUCTION

This Essay is part of a symposium on vices.[1] This work's contribution concerns firearms ownership and legal restrictions among States on firearms ownership and possession. Whether possessing a firearm for self-defense purposes is itself a vice is, one supposes, in the eye of the beholder. One can encounter contemporary observations generally classifying acquisition of firearms as sinful, such as a statement by California Governor Gavin Newsom, in signing a tax on firearms and ammunition.[2] Yet, there is historical support for the view that one's life is a divine gift and, therefore, it would be sinful not to protect it.[3] In harmony with that view, assorted authorities in the Founding Era described armed self-defense as a "natural right."[4] And, of course, *United States v. Cruikshank* states, in discussing the

1. Symposium, *Vice or Virtue: How the Law Impacts Controversial Industries*, UNIV. OF MO SCH. OF L. – COLUMBIA BUS., ENTREPRENEURSHIP, & TAX L. REV.

2. George Skelton, *California Lawmaker Motivated by Text from Daughter During School Shooting Threat*, LA TIMES (SEPT. 28, 2023, 3 AM PT), https://www.latimes.com/california/story/2023-09-28/column-california-lawmaker-motivated-by-text-from-daughter-during-school-shooting-threat. (reporting comments from California Gavin Newsom, in signing what the article describes as "[a] new law to impose a first-in-the-nation 11% state excise tax on firearm and ammunition sales," as follows, " 'Well, this is for me a little different,' the governor replied. 'There's not a general income tax, not a corporate tax. This is, from my perspective, more of a sin tax…. The cost borne by the taxpayers for gun violence is off the charts.… So it's a small price to pay. This is pretty de minimis.' ").

3. *See infra* note 44 and accompanying text.

4. *See, e.g.*, District of Columbia v. Heller, 554 U.S. 570, 593–94 (2008):

> Blackstone, whose works, we have said, "constituted the preeminent authority on English law for the founding generation," Alden v. Maine, 527 U.S. 706, 715 (1999), cited the arms provision of the Bill of Rights as one of the fundamental rights of Englishmen. See 1 Blackstone 136, 139–140 (1765). His description of it cannot possibly be thought to tie it to militia or military service. It was, he said, "the natural right of resistance and self-preservation," *id.*, at 139, and "the right of having and using arms for self-preservation and defence," *id.*, at 140; see also 3 *id.*, at 2–4 (1768). Other contemporary authorities concurred."

Id. (parallel citations omitted).

constitutional right of "bearing arms for a lawful purpose," "This is not a right granted by the Constitution. Neither is it in any manner dependent upon that instrument for its existence."[5] One would take it, then, that a reasonable extension of that view, to contemporary times, would be that possessing a firearm for self-defense would not be sinful.[6]

A. Vices.

This Essay empirically examines the relationship among States between per capita firearms ownership (based on a proxy)[7] and various aspects of levels of vices within the respective States. Of course, per capita firearms ownership is, in general, negatively related to a State having a regulatory regime that heavily restricts firearms ownership. This Essay also examines the relationship between the level of firearms restrictions in a State and those same indicators of vices within the respective States.

B. Freedom.

In addition, this Essay empirically examines the relationship between various aspects of freedom within a State and a proxy for per capita firearms ownership. Lastly, to complete the four possible pairings, this Essay examines the relationship between a State having a restrictive regime for regulating firearms and those same attributes of freedom.

Of the four aspects of the empirical investigation, the relationship between freedom and per capita firearms ownership is most directly relevant to a core assumption underlying adoption of the Second Amendment and its being made applicable to the States. *McDonald v.*

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5. United States v. Cruikshank, 92 U.S. 542, 553 (1875).

6. *See generally* Timothy Hsiao, *It Is Morally Permissible for Christians to Carry Firearms,* DUKE CENTER FOR FIREARMS LAW (Aug. 4, 2020), https://firearmslaw.duke.edu/2020/08/it-is-morally-permissible-for-christians-to-carry-firearms (discussing work ultimately published in Timothy Hsiao, *The Moral Case for Gun Ownership*, *in* ETHICS, LEFT AND RIGHT: THE MORAL ISSUES THAT DIVIDE US (Bob Fischer ed. 2020), stating, "Is it morally permissible for faithful Christians to carry firearms? My paper argues that the answer is "yes." I argue that Jesus's instruction to sell one's cloak and buy a sword in Luke 22:36 should be interpreted as endorsing the carrying of weapons for personal protection.").

7. The proxy is the fraction of suicides in a State in which a gun is the instrumentality.

City of Chicago [8] held the Second Amendment was applicable to the States through the Fourteenth Amendment.[9] *Barron v. Mayor of Baltimore* [10] is the case that is taken as holding that the individual rights in the Bill of Rights do not bind State action, absent adoption of the Fourteenth Amendment (though *Barron* itself did not address the Second Amendment[11]).[12] Yet Justice Baldwin issued an opinion while riding circuit in 1833, months after *Barron* was decided, treating the Second Amendment as applicable to the States.[13] So, at least to this author, it is not clear that the conventional view—that making the Second Amendment applicable to the States required adoption of the Fourteenth Amendment—comports with the original understanding.[14] But, in any case, in view of—

> (i) the Founding-Era conceptualization of armed self-defense as a natural, i.e., pre-existing, right governmental

8. 561 U.S. 742 (2010).

9. *Id.* at 750 (plurality opinion); McDonald, 561 U.S. at 858 (Thomas, J., concurring) ("[T]he right to keep and bear arms is guaranteed by the Fourteenth Amendment as a privilege of American citizenship.").

10. 32 U.S. 243, 250–51 (1833).

11. Neither "arms" nor "Second Amendment" appears in the opinion. *See* Westlaw Search: adv: CI("32 U.S. 243") & (arms or "second") (identifying zero cases).

12. *See, e.g.*, Adamson v. California, 332 U.S. 46, 51 (1947) ("[T]he Bill of Rights, when adopted, was for the protection of the individual against the federal government and its provisions were inapplicable to similar actions done by the states. Barron v. Baltimore, 7 Pet. 243; Feldman v. United States, 322 U.S. 487, 490." (parallel citations omitted)), *overruled by* Malloy v. Hogan, 378 U.S. 1 (1964)).

13. *See* Johnson v. Tompkins, 13 F. Cas. 840, 841 (synopsis), 852 (E.D. Pa. 1833 (Baldwin, J.); Royce de R. Barondes, *The Civil Right to Keep and Bear Arms: Federal and Missouri Perspectives*, at 67–68 (2023 ed.). Through correspondence with an archivist with the National Archives of Philadelphia, library staff at the University of Missouri, School of Law, obtained copies of the actual docket. Email of Grace Schultz to Cynthia D. Shearrer (Oct. 20, 2022). The docket shows a jury was called in *Johnson v. Tompkins* on April 29, 1833. The opinion is part of the jury instructions and, thus, necessarily issued after that. Barron v. City of Baltimore was decided Feb. 16, 1833. https://catalog.archives.gov/search?q=*:*&f.ancestorNaIds=1537559&sort=naIdSort%20asc (visited Oct. 15, 2022). *Johnson v. Tompkins* is discussed in *District of Columbia v. Heller*, 554 U.S. 570, 611 (2008), and referenced in Nicholas J. Johnson et al., *Firearms Law and the Second Amendment: Regulation, Rights, and Policy*, at 120 n.36 (3d ed. 2022).

14. *See generally* Nunn v. State, 1 Ga. 243, 251 (Ga. 1846) (rejecting what is now the conventional view, and treating the Second Amendment as applicable to State action, after the decision in *Barron v. Mayor of Baltimore*).

infringement of which was prohibited by the Second Amendment;[15] as supplemented by

(ii) the other perspectives detailed below[16]—

it is clear that adoption of the Second Amendment and its being made applicable to the States reflect efforts to secure personal freedom.

C. Weighing anew the safety consequences of an enumerated right.

In the ordinary case, one does not seek to weigh the safety consequences arising from exercise of an enumerated right, as part of a retroactive re-balancing of the suitability of giving effect to the adopted constitutional terms protecting the right. So the court has previously opined.[17] And, of course, unlike the Fourth Amendment, the Second Amendment does not contain an express "reasonableness" limit.[18] However, one might assert that the premise is no longer true—that the Second Amendment right is no longer associated with preservation of freedom (if it ever was). That could be the prelude to asserting the Second Amendment should be amended, as some would argue,[19] or that it should be subject to a narrow construction (the latter seeming patently inconsistent with our form of government involving a written constitution, as noted below[20]). In this way, an assessment of the relationship between freedom and firearms ownership informs current public discourse.

D. Freedom as an attribute protected by robust firearms rights.

As noted below, prior investigations have found that, as among different countries, positive measures of freedom (e.g., "political rights (such as free elections) and civil liberty,"[21] government integrity, judicial effectiveness, economic freedom and lack of corruption)

15. *See supra* note 4 and accompanying text.
16. *See infra* notes 40–43 and accompanying text.
17. *See infra* notes 53–54 and accompanying text.
18. *See infra* note 56 and accompanying text.
19. *See infra* note 59 and accompanying text.
20. *See infra* note 58 and accompanying text.
21. David Kopel et al., *Is There a Relationship Between Guns and Freedom? Comparative Results from Fifty-Nine Nations*, 13 TEX. REV. L. & POL. 1, 3 (2008).

are positively related to private firearms ownership.[22] However, one might assert that, at least modernly, the causation goes the other way—that freedom causes more firearms ownership, as opposed to high private firearms ownership preventing usurpation of freedom.

In assessing this type of finding, one ought to consider which direction of causation makes more sense. In this case, that would involve applying an ordinary understanding of how governments function. The mind boggles at the notion that a government, intent on, in substantial measure, depriving its citizens of freedom, would not be inclined to disarm its citizens.

That sequencing (seize arms as a prelude to further restrictions on freedom) was, of course, in the minds of the British during the Founding Era.[23] But, one might consider testing that modernly by both:

- comparing the relationship between freedom and firearms ownership among countries, and
- examining that relationship within a single country that has a nationally mandated (country-wide), high level of freedom from authoritarianism.

This Essay provides evidence for the second—the within-country assessment—using the United States.

The notion is this: one hopes that, within the United States, there is little risk of gross authoritarianism—the Federal government and Constitution prevent that. But there may well be variations in measures of freedom among the States. Let's say that as among States, freedom is also positively related to firearms ownership. Because there is a nationally-enforced, high level of freedom in the United States, such a relationship, among States, might urge an interpretation that freedom causes increased firearms ownership. But, if there is not such a relationship, or it is of the opposite sign, that might be considered consistent with the opposite interpretation—that the Founders had it right in concluding that assured, widespread firearms ownership assists in fostering and maintaining freedom within a country. And, once general freedom is assured, the States with more

22. *See infra* notes 45–52 and accompanying text (discussing Kopel et al., *supra* note 21, at 3, 17–18, 22–23, as well as subsequent work by this author also addressing the relationship between per capita firearms ownership and a measure of freedom in terms of judicial effectiveness).

23. See *infra* notes 42–43 and accompanying text.

firearms may nevertheless opt to be relatively restrictive of freedom on some dimensions.

E. Summary of results.

In sum, as detailed in Part IV, the investigation finds a statistically significant relationship between various measures of freedom among States (as reflected in the Cato Institute's computations[24]) and each of (i) restrictive legal regimes concerning firearms ownership and (ii) a proxy for per capita firearms ownership (the fraction of the suicides in a State where a firearm was the instrumentality). As to the regulatory regime, this Essay references a State's *Giffords score* (the grade assigned to a State's firearms regulation by the Giffords Law Center to Prevent Gun Violence, converted to a numerical value, with higher numbers reflecting greater restrictions).[25] As one might expect, the relationship as to restrictive legal regimes is generally of the opposite sign from that for the proxy for per capita firearms ownership.

In particular, this investigation finds that the proxy for per capita firearms ownership is *negatively* associated with personal freedom and *positively* associated with regulatory freedom.[26] Both are statistically significant. The relationships are statistically significant, but of the opposite sign, when the *Giffords score* is substituted for the proxy for per capita firearms ownership.[27]

So, we have that, among States, a proxy for higher per capita firearms ownership is *negatively* associated with personal freedom. But, among countries, the highest per capita firearms ownership is associated with *more* political rights and civil liberty, and less corruption.[28] This is unexpected if the direction of causation is that freedom in a country causes firearms ownership, for why, then, would not higher personal freedom among States also cause higher firearms ownership? But this pattern does make sense if high levels of firearms ownership in a country can inhibit restriction of political rights and civil liberty, and can inhibit corruption (hence increase freedom), but, given a specific level of low corruption (and high political rights and civil liberty) in a country, the relationship between firearms

24. *See infra* notes 107–114 and accompanying text for a description of the Cato Institute's indices.
25. The details are below. *See infra* n.106.
26. *See infra* p.40, tbl.8, panel A.
27. *See infra* p.38, tbl.7, panel A.
28. *See infra* notes 46–50 and accompanying text.

ownership in parts of the country and freedom in that country may be of either sign.

Additionally, this investigation finds that the sign changes depending on the aspect of personal freedom at issue. The proxy for per capita firearms ownership is *negatively* associated with *alcohol freedom*, freedom from *mala prohibita* restrictions[29] and freedom re. *incarceration and arrests*.[30] However, it is *positively* associated with tobacco freedom.[31] And *Giffords score* (higher reflecting more restrictive firearms regulations) is positively associated with *mala prohibita* and, possibly, *alcohol freedom* (*p*-value of 0.054, although the relationship of *Giffords score* with *alcohol freedom* disappears when a single state, Utah, is eliminated[32]), and *negatively* associated with *educational freedom*[33] and *tobacco freedom*.[34] In sum, the results as to the United States are consistent with the following:

> One of the factors that may assist in assuring a high level of freedom in a country is a high level of per capita firearms ownership. However, where a high level of freedom is maintained throughout a country, but states (or provinces, etc.) are permitted to vary levels of components of personal freedom, there is not a consistent pattern for the relationship between firearms ownership and the components of freedom as among those states. Some are negative, and others are positive.

As to vices, prevalence of some vices is negatively related to the proxy for per capita firearms ownership (and positively related to a restrictive legal regime concerning firearms). The vices of vanity and laziness are in this category (except that the evidence as to a relationship between *Giffords score* and laziness is uncertain).[35]

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29. *See infra* note 118 and accompanying text for the Cato Institute's definition of freedom associated with *mala prohibita*.

30. *See infra* p.43, tbl.10 (model 38).

31. *See infra* p.43, tbl.10 (model 38).

32. *See infra* Section IV, tbl. 9 (model 33); app. tbl. A.4 (model A12).

33. The relationship between *educational freedom* and *Giffords score* is not robust to elimination of some of the most influential observations. *See infra*, text following Section IV tbl. 10; tbl. A4 (models A10, A12).

34. *See infra*, Section IV, tbl. 9 (model 33).

35. A low level of vanity in a State, in comparison to the middle level, is statistically significant—negative in estimating the *Giffords score, see infra* Section IV, tbl.5 (model 4), and positive in estimating the proxy for firearms ownership. *See infra* Section IV, tbl.5 (model 6). A State's being in the highest third as to laziness

But, one might view the relationships as essentially flipped as to excesses & vices and jealousy. *High excesses & vices* is negatively associated with *Giffords score*,[36] and positively associated with the proxy for per capita firearms ownership.[37] And *high jealousy* is positively related to the proxy for per capita firearms ownership[38] (with a statistically insignificant relationship with *Giffords score*[39]).

F. Outline.

The remainder of this Essay proceeds as follows. Part II begins detailing the relationship between freedom and the civil right to keep and bear arms. It briefly summarizes some of the background illuminating relevant Founding-Era perspectives and motivating adoption of the Fourteenth Amendment. It also discusses a few prior works comparing the contemporary relationship between freedom within a country and firearms ownership. Those works support the notion that, as among countries, higher freedom is positively related to higher per capita firearms ownership. Part II then summarizes some of the other empirical investigations that seem of note to contextualize the investigation made in this Essay.

Part III then details the data examined in this Essay. The results, which are briefly summarized above in this introduction, are then detailed in Part IV. That is followed by some concluding observations, in Part V. Part V also reproduces a brief table showing some of the salient results from Part IV in a more compact, abbreviated format.

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is negatively related to firearms ownership. *See infra* Section IV, tbl.5 (model 6). Being in that cohort of high laziness has a positive estimated relationship with restrictive firearms law (high *Giffords score*), but it is not statistically significant (*p*-value of 0.081). *See infra* Section IV, tbl.5 (model 4). In these ways, a more restrictive firearms regulation is positively related to higher levels of vices, and the opposite for the proxy for per capita firearms ownership.

36. *See infra*, Section IV, tbl.5 (model 4).

37. *See infra*, Section IV, tbl.5 (model 6).

38. *See infra*, Section IV, tbl.5 (model 6).

39. *See infra*, Section IV, tbl.5 (dropped in the stepwise estimation of model 4; not statistically significant in model 3).

II. CONTEXTUALIZING THE EMPIRICAL INVESTIGATION; LITERATURE REVIEW

A. Insight the Investigation Provides to Contextualizing Firearms Regulation in America

The investigation of the relationship between vices in a State and firearms ownership/regulation is more in the nature of a lark. It is not suggested that any relationship between vices in a State and the nature of its regime for regulating firearms ought to be a factor in public policy decisions or judicial decisions (except to the extent they indirectly bear on risk of firearms misuse in a State and that risk is a legitimate subject of consideration—the unusual case where the risk is not part of what already went into the balancing that accompanied adoption of the Second Amendment). Rather, this author elected to examine it because it is a potentially interesting segue between the core subject of this symposium and the investigation of attributes associated with freedom. And, understanding the relationship between freedom in a State and firearms ownership is helpful in contextualizing the Second Amendment and the American approach to firearms regulation.

A core component of the historical analysis in the Supreme Court's Second Amendment jurisprudence is the conclusion that a purpose of adoption of the Fourteenth Amendment was to allow blacks to keep arms—to prevent their disarmament as part of a broader deprivation of their civil rights.[40] The implementation of this

40. As this author previously noted, "Through a relatively tedious review of the language of *McDonald v. City of Chicago*, 561 U.S. 742 (2010), and *Bruen*, one comes to the conclusions that (i) following the Civil War, Congress perceived that blacks needed to be allowed to be armed in order to allow their exercise of political rights, (ii) prior federal law was not up to the task of assuring that those persons could remain armed and (iii) adoption of the Fourteenth Amendment was part of the Federal effort to do that." Royce Barondes, *Red Flag Laws, Civilian Firearms Ownership and Measures of Freedom*, 35 REGENT U. L. REV. 339, 389 (2023) (citing New York State Rifle & Pistol Ass'n, Inc. v. Bruen, 597 U.S. 1 (2022)). In particular:

> (i) *Bruen's* analysis recites the following:
>
> On July 6, 1868, Congress extended the 1866 Freedmen's Bureau Act, see 15 Stat. 83, and reaffirmed that freedmen were entitled to the "full and equal benefit of all laws and proceedings concerning personal liberty [and] personal security ... including the constitutional right to keep and bear arms." That same day, a Bureau official reported that freedmen in Kentucky and Tennessee were still constantly under threat: "No Union man or

purpose, through the Fourteenth Amendment, is a manifestation of the broader American tradition, indeed one present before the Founding, in which access to arms was considered an attribute that assisted in maintaining freedom.[41] By way of illustration, it was, of course, the

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> negro who attempts to take any active part in politics, or the improvement of his race, is safe a single day; and nearly all sleep upon their arms at night, and carry concealed weapons during the day."

Bruen, 142 S. Ct. at 2151–52 (emphasis added) (citation omitted) (first quoting Freedmen's Bureau Act, § 14, 14 Stat. 173 (1866); and then quoting H.R. Exec. Doc. No. 329, at 40).

(ii) As to prior law not being up to the task, *McDonald* notes: "Throughout the South, armed parties, often consisting of ex-Confederate soldiers serving in the state militias, forcibly took firearms from newly freed slaves." *McDonald*, 561 U.S. at 772.

(iii)(a) As to the Fourteenth Amendment being necessary to achieve the objective:

> Congress, however, ultimately deemed these legislative remedies insufficient. Southern resistance, Presidential vetoes, and this Court's pre-Civil-War precedent persuaded Congress that a constitutional amendment was necessary to provide full protection for the rights of blacks. Today, it is generally accepted that the Fourteenth Amendment was understood to provide a constitutional basis for protecting the rights set out in the Civil Rights Act of 1866.

Id. at 775 (footnote omitted).

(iii)(b) As to the Fourteenth Amendment doing so:

> Representative Bingham believed that the Civil Rights Act protected the same rights as enumerated in the Freedmen's Bureau bill, which of course explicitly mentioned the right to keep and bear arms. The unavoidable conclusion is that the Civil Rights Act, like the Freedmen's Bureau Act, aimed to protect "the constitutional right to bear arms" and not simply to prohibit discrimination. See also Amar, Bill of Rights 264–265 (noting that one of the "core purposes of the Civil Rights Act of 1866 and of the Fourteenth Amendment was to redress the grievances" of freedmen who had been stripped of their arms and to "affirm the full and equal right of every citizen to self-defense").

Id. at 774–75 (citation omitted).

Barondes, *supra*, at 385 n.187 (final citation corrected).

41. *E.g.*, 1 ST. GEORGE TUCKER, BLACKSTONE'S COMMENTARIES app. 300 (Philadelphia, Birch & Small 1803) (stating, as to the Second Amendment, "This may be considered as the true palladium of liberty. . . . The right of self-defence is the first law of nature; in most governments it has been the study of rulers to confine this right within the narrowest limits possible. Wherever standing armies are kept-up, and the right of the people to keep and bear arms is, under any colour or pretext whatsoever, prohibited, liberty, if not already annihilated, is on the brink of destruction." (ellipsis in original)); Aurelius, *On a Well Regulated Militia* (William Patterson), *in* Richard P. McCormick, Political Essays of William Patterson, 18 J. RUTGERS U. LIBR. 38, 41 (1955) ("To be prepared for war is the way to prevent it;

English efforts to deprive Colonists of arms and ammunition that kicked off the hostilities of the American Revolution.[42] And, as is well known, General Gage later deceitfully disarmed folks in Boston, through unfulfilled promises.[43]

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to be ready in arms to meet and resist tyranny never fails to deter its approach. Tyrants dread freemen, when freem[e]n not only have arms in their hands, but know how to use them.").

42. *See* ROBERT MIDDLEKAUFF, THE GLORIOUS CAUSE: THE AMERICAN REVOLUTION, 1763–1789, at 266–67 (referencing plans to seize "arms and ammunition"); *id.* at 268 (referencing the "aim" of seizing cannon); *id.* at 271 (referencing "500 pounds of musket balls" being found); JOHNSON ET AL., *supra* note 13, at 284 ("[A]t both Concord and Lexington, the British force remained operational and conducted house-to-house searches for firearms and powder, concentrating on locations previously identified by spies. Thanks to the alarm spread the night before by Paul Revere, William Dawes, and others, the militia's main powder reserves, at Concord, were removed before the British arrived."). *See generally* H. Richard Uviller & William G. Merkel, *The Second Amendment in Context: The Case of the Vanishing Predicate*, 76 CHI.-KENT L. REV. 403, 467 (2000); David B. Kopel, *How the British Gun Control Program Precipitated the American Revolution*, 6 CHARLESTON L. REV. 283, 285 (2012) ("This Article chronologically reviews British gun control which precipitated the American Revolution: the 1774 import ban on firearms and gun powder; the 1774–1775 confiscation of firearms and gun powder from individuals and from local governments; and the use of violence to effectuate the confiscations. It was these events which changed a situation of rising political tension into a shooting war."); *id.* at 308–12 (discussing the events).

> These efforts to disarm colonists were preceded by directions from England to do so to the extent feasible:
>
> Lord Dartmouth, the royal Secretary of State for America, sent Gage a letter on October 17, 1774, urging him to disarm New England, to the extent reasonably possible:
>
> Amongst other things which have occurred on the present occasion as likely to prevent the fatal consequence of having recourse to the sword, that of disarming the Inhabitants of the Massachusetts Bay, Connecticut and Rhode Island, has been suggested. Whether such a Measure was ever practicable, or whether it can be attempted in the present state of things you must be the best judge; but it certainly is a Measure of such a nature as ought not to be adopted without almost a certainty of success, and therefore I only throw it out for your consideration.

Kopel, *supra*, at 296 (quoting Letter from Lord Dartmouth to Gen. Gage (Oct. 17, 1774), *in* 2 THE CORRESPONDENCE OF GENERAL THOMAS GAGE WITH THE SECRETARIES OF STATE, AND WITH THE WAR OFFICE AND THE TREASURY: 1763–1775, at 175 (Clarence Edwin Carter ed., Archon Books 1969) (1933)).

43. Dave Kopel wrote:

> At Lexington and Concord, coercive disarmament had not worked out for the British. Back in Boston, General Gage recognized that British troops there were heavily outnumbered by armed Bostonians.

Lastly, an illustration from a philosophical and religious perspective:

Locke argued that a man's life belonged to God. Accordingly, life was inalienable property. A man could not legitimately destroy his life by suicide, or submit to slavery. As a sermon by the famous Presbyterian Rev. Gilbert Tennent put it:

> He that suffers his life to be taken from him by one that hath no Authority for that Purpose, when he might preserve it by Defence, incurs the Guilt of self-murder since God hath enjoined him to seek the continuance of his Life, and Nature Itself teaches every creature to defend itself. . . .[44]

In 2008, Kopel, Moody and Nemerov concluded that there is a positive relationship between the level of firearms ownership in a country and measures of freedom within a country.[45] Relevant to our purposes, the measures bearing on freedom that they used include, "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[; and] ... Heritage Foundation's ratings of economic freedom."[46] As to the Freedom

> "[K]nowing that many of the Boston householders had arms, he was afraid the town would rise at his back." So Gage set out to disarm the Bostonians, but through a strategy that avoided direct force.
> On April 23, 1775, Gage offered the Bostonians the opportunity to leave town if they surrendered their arms.
> The Boston Selectmen voted to accept the offer, and a massive surrender of arms began. Within days, 2,674 guns were deposited. . . .
> . . .
> Having collected the arms, Gage then refused to allow the Bostonians to leave. . . . Eventually, a system of passes was set up, allowing Bostonians to leave town. But the passes were difficult to obtain, and even then, Bostonians were often prohibited from taking their household goods or food. After several months, food shortages in Boston convinced Gage to allow easier emigration from the city.

Kopel, *supra* note 42, at 312–13 (footnotes omitted).

44. NICHOLAS J. JOHNSON ET AL., FIREARMS LAW AND THE SECOND AMENDMENT: REGULATION, RIGHTS, AND POLICY, at 133 (2012) (quoting Gilbert Tennent, The Late Association for Defence (Dec. 24, 1747) (Philadelphia), *quoted in* Charles Asbury, The Right to Keep and Bear Arms in America: The Origins and Application of the Second Amendment to the Constitution 40 (unpublished doctoral thesis in history, U. of Mich.)).

45. Kopel et al., *supra* note 21, at 3, 17–18, 22–23.

46. *Id.* at 3.

House ratings, those authors apparently used a single index combining the political rights and civil liberty scores,[47] representing the average of the two.[48] They found, for example, "For all three indices of liberty, [i.e., including one combining political rights and civil liberty scores,] the top firearms quartile rates [are] higher than every other quartile."[49] That is, the highest levels of firearms ownership were associated with the highest levels of freedom. They further report:

> We found three statistically significant relationships:
> - more guns, less corruption;
> - more guns, more economic freedom; and
> - more guns, more economic success.[50]

This author confirmed in an article published in 2023 that similar relationships continue to obtain.[51] The investigation, using more recent data, found a statistically significant, positive relationship between per capita firearms ownership in countries and each of Transparency International's Corruption Perceptions Index and The Heritage Foundation's Judicial Effectiveness and Government Integrity scores.[52]

For purposes of the comparison to the results in this Essay, of greatest salience would seem to be the results from Kopel et al. involving freedom as assessed in terms of the single index combining Freedom House's ratings for political rights and civil liberty. As noted

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47. The components are defined 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 organizational rights, rule of law, and personal autonomy without interference from the state.

Kopel et al., *supra* note 21, at 6 (quoting Freedom House, Freedom in the World (2008), http:// www.freedomhouse.org/template.cfm?page=351&ana_page=341&year=2008 (last visited Dec. 31, 2008)).

48. Kopel et al., *supra* note 21, at 6.
49. *Id.* at 17.
50. *Id.* at 21.
51. Barondes, *supra* note 40, at 367, 374 tbl.3, 378 tbl.4.
52. Barondes, *supra* note 40, at 374–75 tbl.3, panel B.

above,[53] they find the top quartile of firearms ownership had higher average levels of freedom than any other quartile of firearms ownership.

One of the ways efforts to curtail the scope of the Second Amendment are postured is to assert that increased firearms possession gives rise to increased crime. Now, we do not ordinarily curtail enumerated civil rights simply because doing so would make society safer. As *District of Columbia v. Heller*[54] and *New York State Rifle & Pistol Ass'n v. Bruen*[55] note, adoption of the Second Amendment reflects the core balancing has already been performed as part of the adoption. And, of course, the Second Amendment does not contain an express "reasonableness" limit.[56] In addition, although the intrusive stop-and-

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53. *See supra* note 21 and accompanying text.

54. 554 U.S. 570, 634 (2008) ("We know of no other enumerated constitutional right whose core protection has been subjected to a freestanding "interest-balancing" approach. The very enumeration of the right takes out of the hands of government—even the Third Branch of Government—the power to decide on a case-by-case basis whether the right is *really worth* insisting upon.").

55. The opinion states:

> Moreover, *Heller* and *McDonald* expressly rejected the application of any "judge-empowering 'interest-balancing inquiry' that 'asks whether the statute burdens a protected interest in a way or to an extent that is out of proportion to the statute's salutary effects upon other important governmental interests.'" *Heller*, 554 U.S. at 634 (quoting id., at 689–690 (BREYER, J., dissenting)); see also *McDonald*, 561 U.S. at 790–791 (plurality opinion) (the Second Amendment does not permit—let alone require—"judges to assess the costs and benefits of firearms restrictions" under means-end scrutiny). We declined to engage in means-end scrutiny because "[t]he very enumeration of the right takes out of the hands of government—even the Third Branch of Government—the power to decide on a case-by-case basis whether the right is *really worth* insisting upon." *Heller*, 554 U.S. at 634. We then concluded: "A constitutional guarantee subject to future judges' assessments of its usefulness is no constitutional guarantee at all." *Ibid.*

New York State Rifle & Pistol Ass'n, Inc. v. Bruen, 597 U.S. 1, 22–23 (2022) (parallel citations removed) (emphasis in original).

56. Oral argument in one recent case included the following: "As to counsel's … reference to 'reasonableness' being the 'touchstone,' a member of the panel state[d], 'It is in the Fourth Amendment. There's no reasonableness carve[-]out for you in the Second Amendment. The Second Amendment is more absolute than the [Fourth].' " Youtube Transcript of Oral Argument at 30:23, Maryland Shall Issue v. Moore, 86 F.4th 1038 (4th Cir. 2023) (No. 21-17), https://www.youtube.com/

frisk process refined under the leadership of Michael Bloomberg was apparently quite effective—the refinements were accompanied by great success in decreasing crime in New York City—the approach was invalidated as unconstitutional.[57]

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watch?v=hH2EEPbsFNM), *reh'g en banc granted*, No. 21-2017 (L), 2024 WL 124290 (4th Cir. Jan. 11, 2024)) (quoted in BARONDES, *supra* note 13, at 53).

57. *See* BARONDES, *supra* note 13, at 103 (stating, "[The] approach was invalidated by agreement following an adverse preliminary judicial determination." (citing Floyd v. City of New York, 770 F.3d 1051, 1054 (2d Cir. 2014) (referencing a settlement agreement stating "[T]he plaintiffs will not oppose a motion by the City to terminate the District Court's jurisdiction after a period of five years if the City can show substantial compliance with the reforms contained in Judge Scheindlin's remedial order."))); BARONDES, *supra* note 13, at 103 (reproducing a transcript of a portion of Michael Bloomberg remarks at the Aspen Institute, which are quoted below); Michael Bloomberg, Mayor of N.Y.C., Address on Public Safety to NYPD Leadership (Apr. 30, 2013), https://www1.nyc.gov/office-of-the-mayor/news/151-13/mayor-bloomberg-delivers-address-public-safety-nypd-leadership (stating, "There is no doubt that stops are a vitally important reason why so many fewer gun murders happen in New York than in other major cities—and why we are the safest big city in America. Critics say the fact that we're 'only' finding 800 guns a year through stops of people who fit a description or are engaged in suspicious activity means that we should end stop and frisk. Wrong. That's the reason we need it—to deter people from carrying guns. We are the First Preventers."), http://web.archive.org/web/20230519205333/https://www.nyc.gov/office-of-the-mayor/news/151-13/mayor-bloomberg-delivers-address-public-safety-nypd-leadership. Also relevant is the following statement by Michael Bloomberg:

> Ninety-five percent of murders—murderers and murder victims—fit one M.O. You can just take the description, Xerox it, and pass it out to all the cops. They are male, minorities, 16–25. That's true in New York. That's true in virtually every city [inaudible]. And that's where the real crime is. You've got to get the guns out of the hands of people that are getting killed. So you want to spend the money on a lot of cops in the streets. Put those cops where the crime is, which means in minority neighborhoods.
>
> So one of the unintended consequences is people say, "Oh my God, you are arresting kids for marijuana that are all minorities." Yes, that's true. Why? Because we put all the cops in minority neighborhoods. Yes, that's true. Why do we do it? Because that's where all the crime is. And the way you get the guns out of the kids' hands is to throw them up against the wall and frisk them … and then they start … "Oh, I don't want to get caught." So they don't bring the gun. They still have a gun, but they leave it at home.

See Elliot Hannon, Leaked Audio Captures Bloomberg Defending Racial Profiling and Stop-and-Frisk Policing, Slate (Feb. 11, 2020, 10:13 AM), https://slate.com/news-and-politics/2020/02/leaked-audio-bloomberg-aspen-institute-racial-profiling-stop-and-frisk-policing.html, http://web.archive.org/web/20230406011614/https://slate.com/news-and-politics/2020/02/leaked-audio-bloomberg-aspen-institute-racial-profiling-stop-and-frisk-policing.html (providing transcript of audio, posted

Of course, evidence that firearms possession increases freedom in a country represents a thorn in the side of one who prefers a culture that institutionalizes dependency on the government and, consequently, would like to curtail dramatically or eliminate the Second Amendment. Some, when encountering a relationship between per capita firearms ownership in a country and freedom, may wish conclude the causation goes solely in the opposite direction—not that an armed society inhibits fundamental abrogation of basic civil rights but, rather, that something about societies marked by freedom yields their having more firearms. On occasion, this is apparently part of supporting the improper view that the Founding-Era conceptualization of the enumerated right to keep and bear arms is suitable for paring-back by judicial fiat (which seems of dubious legitimacy[58])—

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on a Twitter account of Benjamin Dixon (@BenjaminPDixon), and noting, "Those comments were apparently controversial enough in real time that, the Aspen Times reported in 2015, Bloomberg requested that video of the event not be made public.").

A recording is currently available on YouTube. Chuck Ross, *Bloomberg's Remarks at the Aspen Institute About Minorities and Guns*, at 00:35, YOUTUBE, https://www.youtube.com/watch?v=5L0Zq0MusGA&t=12s. *See also id.* at 01:19 ("And in New York, before Rudy Giuliani got elected we had 2,300 murders. When he left office that was down to 660 murders, when I left office it was down to 333 murders a year, and it was all the same group.").

58. As to the suitability of de facto amendment by judicial fiat, *see, e.g.*, Oakley v. Aspinwall, 3 N.Y. 547, 568 (1850) (Bronson, C.J., dissenting) ("It is highly probable that inconveniences will result from following the constitution as it is written. But that consideration can have no weight with me. It is not for us, but for those who made the instrument to supply its defects. If the legislature or the courts may take that office upon themselves; or if under color of construction, or upon any other specious ground, they may depart from that which is plainly declared, the people may well despair of ever being able to set a boundary to the powers of the government. Written constitutions will be worse than useless."). *See also* THOMAS M. COOLEY, A TREATISE ON THE CONSTITUTIONAL LIMITATIONS WHICH REST UPON THE LEGISLATIVE POWERS OF THE STATES OF THE AMERICAN UNION 72 (Boston, Little, Brown & Co. 1st ed. 1868) (stating, as to "evils that must be placed in the opposite scale when the question is whether a constitutional rule shall be disregarded," "not the least of which is, the encouragement of a disposition on the part of legislative bodies to set aside constitutional restrictions, in the belief that, if the unconstitutional law can once be put in force, and large interests enlisted under it, the courts will not venture to declare it void, but will submit to the usurpation, no matter how gross and daring, We agree with the Supreme Court of Indiana, that in construing constitutions, courts have nothing to do with the argument *ab inconvenienti*, and should not 'bend the Constitution to suit the law of the hour.' "(quoting Greencastle Twp. in Putnam Cnty. v. Black, 5 Ind. 557, 565, *on reh'g,* 5 Ind. 566

repeal or revision by amendment being occasionally proposed[59] (albeit apparently with little probability of current success).

The view in which the causation is only one-way, with high freedom causing increased firearms ownership, seems innately suspect. To this author, it would seem self-evident that governments that wish have some of their citizens oppressed take away arms in order to facilitate the oppression.

Some evidence of that was recently provided by Makowsky and Warren. They have provided an empirical investigation that illuminates the relationship between a basic civil right in a racial minority (absence of being lynched) and estimates of the group's firearms ownership. That is, they provide empirical evidence that supports the validity of the premise that the Supreme Court found motivated adoption of the Fourteenth Amendment. In particular, Makowsky and Warren seek to examine the relationship between estimated Black firearm ownership and the lynching of Blacks, over the period 1913 to 1950.[60]

Makowsky and Warren use percentage of suicides committed with firearms as a proxy for firearms ownership.[61] As they note, use of percentage of suicides committed with firearms, as a proxy for firearms ownership, appears to be often accepted in the literature,[62] although there are concerns in some contexts.[63] Makowsky and Warren

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(1854), and *overruled by* Robinson v. Schenck, 1 N.E. 698 (Ind. 1885)); and quoting with approval *Oakley*)).

59. *E.g.*, John Paul Stevens, *Repeal the Second Amendment*, N.Y. TIMES, at A23 (Mar. 28, 2018).

60. Michael D. Makowsky & Patrick L. Warren, *Firearms and Lynching*, 66 J.L. & ECON. 259, 265 (2023).

61. *Id.* at 274.

62. *Id.* at 260 ("The percentage of suicides committed with a firearm, compared with a variety of other broadly available proxies, has been repeatedly found to be the best cross-sectional measure of firearm ownership rates." (citations omitted)); *id.* at 264 (stating, "percentage of suicides by firearm has proven to be the most reliable proxy for firearm access in contemporary contexts"). *See generally* Daniel Cerqueira et al., *A Panel-Based Proxy for Gun Prevalence in Us and Mexico*, 71 INT'L REV. L. & ECON. 1 (2022) (investigating some concerns with the proxy and alternatives that might be used in assorted contexts).

63. *Compare* Gary Kleck, *The Cross-National Association of Gun Ownership Rates and Suicide Rates: An Analysis of 194 Nations*, 26 ARCHIVES OF SUICIDE RESEARCH 1478, 1479 (2022) ("This measure, [the percent of suicides committed with firearms] . . . has been validated by analyses showing a near-perfect correlation with direct survey measures of gun ownership of 0.95." (citations omitted) *with* Tyler J. Lane, *Associations Between Firearm and Suicide Rates: A Replication of*

report, "We first analyze the correlation between firearm access and the number of historiographically identified Black residents' lynching deaths . . . and show that in states and years in which Black residents had better access to firearms, they suffered fewer lynchings. This correlation opens the door to the possibility of firearms serving an important role in self-defense in a poorly institutionalized state."[64]

In the investigation, they identify "shifts in the availability of firearms—one based on White law enforcement manpower as a shift of the costs of maintaining access to a firearm for Black residents and one based on state laws that affected the availability of firearms."[65] They conclude, "[S]tates and years in which Black citizens have lower rates of firearm access because of these shifts have significantly higher lynching rates."[66] In sum, they conclude, "Using suicide records as a proxy for firearm access, we find a negative relationship between Black residents' firearm access and the number of recorded lynchings."[67]

Of course, in the United States, the Federal Constitution provides a nationwide floor on the freedom that must be available from, and provided by, the government at all levels, which one hopes may, without cavil, be referenced as currently substantially higher than was the case for the multi-decade period, in the first half of the twentieth century, studied by Makowsky and Warren. And this gives rise to our investigation.

There are varying levels of firearms restrictions among the States. And others have attempted to quantify the variations in the levels of freedom among the States. If there remains, as among States, a positive relationship between freedom in a State and firearms freedom—freedom from State restriction—that would perhaps be unexpected were firearms possession to cause freedom, because the Federal Constitution modernly provides extensive protection of freedom.

In fact, this investigation finds a *negative* relationship among States between (x) each of (i) firearms freedom in a State, and (ii) a proxy for per capita firearms ownership in a State, and (y) a measure

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Kleck (2021), 27 ARCHIVES OF SUICIDE RESEARCH 880, 882 (2023) (asserting that, for methodological reasons, this measure is unsuitable when estimating the relationship between firearms ownership and suicide by any means).

64. Makowsky & Warren, *supra* note 60, at 261.

65. *Id.*

66. *Id.* at 262.

67. *Id*. at 274.

of personal freedom within a State (with gun freedom excluded).[68] That is, among States, more guns and more gun freedom, less other personal freedom.[69] Or, because the measure of firearms freedom used has the opposite sign—the *Giffords score*, in which the States with the most firearms freedom have grades of "F"—this investigation finds that firearms law grades, as ranked by the Giffords Law Center to Prevent Gun Violence, are positively and significantly associated with overall personal freedom (excluding firearms freedom). The results support the following notion—albeit surely not the sole plausible notion: Extensive public firearms possession inhibits extensive governmental authoritarianism. However, given that a population, by virtue of firearms possession, is assured of some substantial level of absence of authoritarianism, that assurance is sufficient to yield circumstances in which assorted other freedoms are relinquished.

B. Other Prior Literature

Before describing the data examined and the empirical analysis, it is helpful to collect some of the other empirical literature concerning firearms ownership and regulation. A complete literature review on that subject would be an article—more likely a treatise—in itself, as there are numerous works that address the relationship between safety and either firearms ownership or assorted firearms restrictions.[70]

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68. *See infra* Section IV, tbl.8, panel A (model 20); *see infra* Section IV tbl.7, panel A (model 10). The sign is positive in the results reported in model 20, because the variable is the opposite of firearms freedom, i.e., the dependent variable is high where there is low firearms freedom, and low where there is high firearms freedom. That is, firearms restrictions, as reflected *by Giffords score*, are *positively* associated with personal freedom (excluding firearms freedom) in the State, so *firearms freedom* is *negatively* associated with personal freedom (excluding firearms freedom) in the State.

69. This turn of phrase is, of course, derived from the now-famous phrasing that is embedded in the title of JOHN R. LOTT, JR., MORE GUNS, LESS CRIME: UNDERSTANDING CRIME AND GUN CONTROL LAWS (3d ed. 2010).

70. Illustrative for those interested in an introduction to that vast literature are LOTT, *supra* note 69; GARY KLECK, TARGETING GUNS: FIREARMS AND THEIR CONTROL (1997) (a now dated book by a prolific scholar on firearms-related subjects); John J. Donohue, *The Effect of Permissive Gun Laws on Crime*, *in* CASSANDRA CRIFASI ET AL., EDS., PREVENTING GUN VIOLENCE IN AMERICA: WHAT WORKS AND WHAT IS POSSIBLE, 704 THE ANNALS OF THE AMERICAN ACADEMY OF POLITICAL AND SOCIAL SCIENCE (Nov. 2022), https://journals.sagepub.com/doi/epub/10.1177/00027162231164865; Alvaro Castillo-Carniglia et al., *California's*

Rather, in view of the fact that this work is an essay, and not an article, this Essay will merely provide reference to some selections of empirical investigations that seem less tangential, in relation to this Essay, than others.

i. Demographics and cultural factors—including as to preferences for carrying onto the property of another and a law allowing forfeiture of one's own firearms rights.

Region of residence is one dimension that has been examined in connection with variations in firearm ownership. "[Some] … authors have focused on region-based subcultures of gun ownership, stressing especially higher rates of gun ownership in the South."[71]

The relationship between individual characteristics and preferences concerning types of firearms restrictions has also been examined. Ayres and Jonnalagadda, in an empirical investigation, conclude, "We find that [(i)] gun owners, [(ii)] Republicans, [(iii)] individuals who identify as neither a Republican nor a Democrat and [(iv)] men are more likely to believe that the law ought, by default, to allow carry onto other people's property."[72] They report that "regressions do not find any consistent relationship between demographics and beliefs about what the law is."[73] They also report that "more than two-thirds of respondents reported not knowing whether their state, by default, allows firearms to be carried onto other people's property in a variety of landowning contexts."[74]

Comprehensive Background Check and Misdemeanor Violence Prohibition Policies and Firearm Mortality, 30 ANNALS OF EPIDEMIOLOGY 50, 50 (2019) (including Garen J. Wintemute as a co-author; providing the following definition of MVP policy: "prohibited firearm purchase and possession for persons convicted within the past 10 years of certain violent crimes classified as misdemeanors," and stating, California's "CBC [, comprehensive background check,] and MVP[, misdemeanor violence prohibition,] policies were ***not*** associated with changes in firearm suicide or homicide." (emphasis added)).

71. KLECK, *supra* note 70, at 84. Kleck also observes, "Note, however, that gun ownership is also high in the Rocky Mountain states and the Midwest . . . ." *Id.*

72. Ian Ayres & Spurthi Jonnalagadda, *Guests with Guns: Public Support for "No Carry" Defaults on Private Land*, 48 J.L. MED. & ETHICS 183, 187 (2020). An online appendix for the work is available at: https://ianayres.yale.edu/sites/default/files/files/48_4_26_Ayres_Online_Appendix.pdf (last visited Dec. 30, 2023).

73. Ayres & Jonnalagadda, *supra* note 72, at 187.

74. *Id.*

Ayres, with a different co-author, also examines the relationship between various personal characteristics and support for a statutory provision that would permit voluntary forfeiture of firearms rights, a statutory provision misleadingly styled in the title of their work as a "right not to bear arms."[75] That is misleading because in only limited circumstances does the law currently force one to bear arms.[76] As to salient relationships, they note, "Respondents reporting a psychiatric condition were in fact 44.9% more likely to support the policy, even after controlling for other respondent characteristics, and this result was statistically significant (p = 2.5%)."[77]

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75. Ian Ayres & Fredrick E. Vars, *Gun Owners Support the Right Not to Bear Arms*, 69 EMORY L.J. 1131 (2020).

76. They note, "In 1982, Kennesaw, Georgia enacted an ordinance requiring the head of each household to maintain a firearm and ammunition." Ayres & Vars, *supra* note 75, at 1133. That of course is not a literal contradiction, for it only required keeping arms, not bearing them. Of course, at times when there is a draft, one can be forced to bear arms.

77. *Id.* at 1142. That article is parsimonious as to some ordinary details concerning reporting results. They provide results of a logistic regression. *Id.* at 1148, tbl.A2. Such a regression yields estimates of how an independent variable affects the odds of the predicted variable (in their case, support for the legal proposal). "When a logistic regression is calculated, the regression coefficient (b1) is the estimated increase in the log odds of the outcome per unit increase in the value of the exposure. In other words, the exponential function of the regression coefficient (eb1) is the odds ratio associated with a one-unit increase in the exposure." Magdalena Szumilas, *Explaining Odds Ratios*, 19 J. CANADIAN ACAD. CHILD & ADOLESCENT PSYCHIATRY, Aug. 2010, at 227, 227. The parameter estimates that statistical packages report for logistic regression can be either odds ratios or the natural logarithm of that. *See* Stata, Logit—Logistic Regression, Reporting Coefficients, at 3, https://www.stata.com/manuals/rlogit.pdf (visited Jan. 26, 2024) (noting as to the "or" option: "[O]r reports the estimated coefficients transformed to odds ratios, that is, e^b rather than b.").

An odds ratio greater than one indicates the variable of interest is associated with higher odds; if it is less than one, it is associated with lower odds; and, if it is zero, it is associated with neither an increase nor a decrease. Szumilas, *supra*, at 227. Although not prominently clarified in their work, it appears that Ayres and Vars elected to report odds ratios. For example, they note, as to a parameter estimate of 1.449 for *Any psychiatric condition = 1*, Ayres & Vars, *supra* note 75, at 1148, tbl.A2, "Respondents reporting a psychiatric condition were in fact 44.9% more likely to support the policy, even after controlling for other respondent characteristics, and this result was statistically significant (p = 2.5%)." Ayres & Vars, *supra* note 75, at 1142. That is the interpretation of reported parameter estimates if they are reported as odds ratios. The analysis of the Ayres & Vars results in this Essay takes it to be that is in fact how they elected to report their results.

Curiously, in results that seem not emphasized in the verbal discussion of their empirical results, they found that, as among veterans, those who were heterosexual were particularly likely to support the restriction, statistically significant at the 5 percent level.[78] And the parameter estimate is substantial—over 2, meaning the odds of approval more than double. Of course, that means that, if one instead takes heterosexuality as the baseline, those who are homosexual (or other) are much *less likely to support* the restriction. They do not fully probe the implications of this finding.

They also reported as results for logistic regressions: "Age was not a significant predictor of support among non-veterans, but older veterans were less likely to be supportive."[79] That seems to this author an odd way to describe a finding of coefficients, stated as odds ratios, of less than one in logistic regressions (i.e., results indicative of a decreased likelihood), statistically significant at the five percent and one percent levels within veterans 46–60 and 61–75, respectively, with parameter estimates of 0.503 and 0.535, respectively.[80] I would restyle the results as indicating veterans with substantial life experience, in the age range of 46 to 75, are much less favorably inclined to the proposal, as compared to, for example, those 18 to 30, for whom the estimated coefficient was greater than one (1.100), and not statistically significant.[81]

Also curiously, the authors do not amplify on the results as to those who have attempted suicide, either at least once time or two or more times. Neither category was statistically significant in estimating the likelihood of support for the restriction.[82] Where the objective is to prevent suicides, one would think that consideration of this finding—rather, consideration of this absence of a finding—would potentially illuminate the actual efficacy of the statutory proposal. The objective of the proposal is to prevent suicides. The utility of the proposal is belied by its providing an option that cannot be shown to be desired by a core putative beneficiary class—those who have attempted suicide.

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78. Ayres & Vars, *supra* note 75, at 1148 tbl.A2.
79. *Id.* at 1142.
80. *Id.* at 1148–49 tbl.A2.
81. *Id.*
82. *Id.* (other than an estimate, at the generally considered inadequate 10-percent significance level for more than one suicide attempt, within the sample restricted to veterans). They do find a statistically significant relationship, with a coefficient greater than one, for the variable reflecting any psychiatric condition. *Id.*

Other significant estimates of note are "*Other Religion*" (i.e., religion excluding Catholic),[83] greater than one and statistically significant at the one percent level (other than in the subsample limited to veterans), and *Disabled*, significant at the five-percent level, but greater than one within non-veterans and less than one, 0.479, within veterans.[84] That is, although those with disabilities generally are favorably inclined to having the ability to forfeit firearms rights, those who are veterans are just the opposite. Two possible interpretations immediately come to mind. First, this result could be a consequence of the nature of the disabilities varying among the groups. Second, the result could be a consequence of a concern that a veteran's consent would be coerced—that what might be styled as mechanisms for supporting veterans in fact, as to this, may be perceived as doing the opposite, by coercing consent to an unwanted outcome.

ii. Other vices and firearms crime.

Because this symposium focuses on vices, it seems desirable to include in the literature review results of an investigation of the relationship between firearms crime and proximity of a type of strip club (styled in the article per the jurisprudential neologism *human display establishment*,[85] usage of which seems unlikely to further the interests of informing the reader). Enriqueza, Cancinob and Varanoc examine "crime incidents occurring within the 500- and 1000-foot concentric zone perimeters for human display and control sites," i.e., strip clubs,

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83. The Ayres & Vars article is cursory in explaining the definitions of variables. The tables show estimates for the following three variables bearing on religion: *Catholic*, *Not Religious* and *Other Religion*. *Id.*

84. *Id.*

85. The following definition of the term *human display establishment* was provided by a court:

> The ordinance defines "human display establishment" as those premises, including those subject to regulation under Chapters 54 or 243 of the Texas Local Government Code, as amended, wherein there is conducted the business of furnishing, providing or procuring dancers, entertainers, or models who appear live at said premises in a state of nudity or semi-nudity, or while performing specified sexual activities.

RCI Ent. (San Antonio), Inc. v. City of San Antonio, 373 S.W.3d 589, 594 (Tex. App. 2012) (citing San Antonio, Tex., Code § 21-200 (2005)).

controlling for other factors as well.[86] Human display establishments, i.e., strip clubs, are not found to have a statistically significant relationship with firearms crime.[87] Also insignificant was a variable reflecting the density of "alcohol outlets."[88]

iii. Legal Process—subject demographics and targeting by ATF for enforcement; litigation success within jurisdictions having laws unfriendly to firearms ownership.

Couch and Shughart examine one aspect of demographics related to ATF's criminal referral decisions. They find:

> [O]ther things equal, BATF agents tend to refer more cases for criminal prosecution to United States Attorneys in states where more citizens belong to the National Rifle Association ("NRA"). . . . Moreover, U.S. Attorneys tend to decline to prosecute more of the cases referred to them by BATF agents in high NRA membership states.[89]

There have been investigations of the factors associated with success in Second Amendment litigation. Ruben and Blocher, in a 2018 article, examine the relationship between success in Second Amendment litigation and various aspects of the litigation and the opinion contents.[90] Examples are the court (e.g., Federal vs. State), and the nature of the restriction (whether it involves a restriction on who may

86. Roger Enriquez et al., *A Legal and Empirical Perspective on Crime and Adult Establishments: A Secondary Effects Study in San Antonio, Texas*, 15 AM. U. J. GENDER SOC. POL'Y & L. 1, 19 (2006).

87. *Id.* at 31–32 tbl.6.

88. *Id.* at 19. As to the variable's definition, the work notes, "alcohol density outlets are measured as the number of on-site alcohol outlets in each BG[, i.e., census block group,] per 1000 population." *Id.* at 19. Those authors find, instead, "four of the eight social disorganization predictors (i.e., Latino, divorced, median household income, males 15–29 years of age) were significantly related to firearm offenses." *Id.* at 30.

89. Jim F. Couch & William F. Shughart II, *Crime, Gun Control, and the BATF: The Political Economy of Law Enforcement*, 30 FORDHAM URB. L.J. 617, 618 (2003).

90. Eric Ruben & Joseph Blocher, *From Theory to Doctrine: An Empirical Analysis of the Right to Keep and Bear Arms After* Heller, 67 DUKE L.J. 1433 (2018).

carry a firearm, where one may be carried, etc).[91] Ruben and Blocher relied on the ratings of a jurisdiction's firearms laws provided by the Law Center to Prevent Gun Violence[92] (currently styled Giffords Law Center to Prevent Gun Violence[93])—the current versions of which are used in this Essay. They find, "[A]ppellate courts in the twenty-five states that have received an 'F' rating from the Law Center to Prevent Gun Violence for their gun laws heard thirty-one Second Amendment challenges and rejected all of them."[94]

An earlier work by O'Shea, referenced by Ruben and Blocher, studying a set of opinions issued from June 26, 2008, to October 15, 2013,[95] found:

> In every opinion described above that found a Second Amendment violation, every vote in favor of relief on the merits from government action—whether in a majority opinion, a dissent, or a dissent from denial of rehearing—was cast by a Republican-appointed judge.
>
> President Obama's judicial nominees had a uniform record in the Second Amendment cases in the database. Obama-appointed judges began assuming the federal bench in 2009, and issued or joined over dozens of opinions during the study period in cases addressing Second Amendment claims. None voted to grant relief on any Second Amendment claim.[96]

91. *Id.* at 1504, tbl.25 (reporting results of logit regressions of the likelihood of "success," as defined by those authors).

92. *Id.* at 1443–44. The rankings are also used in, e.g., Firat Bilgel, *State Gun Control Laws, Gun Ownership and the Supply of Homicide Organ Donors*, 63 INT'L REV. L. & ECON. 1, 4 (2020) (referencing "Giffords Law Center" rankings).

93. GIFFORDS, Contact Us, https://giffords.org/about/contact-us/ (visited Dec. 29, 2023).

94. Ruben & Blocher, *supra* note 90, at 1476.

95. Michael P. O'Shea, *The Steepness of the Slippery Slope: Second Amendment Litigation in the Lower Federal Courts and What It Has to Do with Background Recordkeeping Legislation*, 46 CONN. L. REV. 1381, 1414 (2014).

96. *Id.* at 1421.

iv. **Miscellaneous.**

The empirical scholarship concerning firearms law issues is, of course, voluminous. For those interested, a few others of less direct applicability but perhaps of interest are in the margin.[97]

III. DATA

A. Vices.

In February 2023, Wallet Hub released annual ratings of levels of vices within the States,[98] the most recent as of the time the empirical work on this Essay commenced. The variables reported are:

- anger & hatred;[99]
- jealousy;
- excesses & vices;
- greed;
- lust;

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97. A relatively unsettling subject is addressed by Bilgel: "The findings confirm the transplantation paradox hypothesis that stricter gun control laws reduce the expected cases of gun homicides and thereby reduce deceased organ donor supply and exacerbate the organ shortage." Firat Bilgel, *State Gun Control Laws, Gun Ownership and the Supply of Homicide Organ Donors*, 63 INT'L REV. L. & ECON. 1, 1 (2020).

The relationship between various demographic characteristics and views on Missouri's Second Amendment Preservation Act, MO. ANN. STAT. §§ 1.410–1.485 (Westlaw through the end of the 2023 First Reg. Sess. of the 102nd General Assembly), is discussed by Raissian et al. Kerri M. Raissian et al., *Missouri Citizen Perceptions: Giving Second Amendment Preservation Legislation a Second Look*, 51 J.L. MED. & ETHICS 32, 45 tbl.2 (2023) (examining "Respondent's Perception of SAPA's Impact on Safety," an investigation of unclear salience, because the public perception of the consequences of a new statutory scheme is of dubious value or accuracy). The relationship between defunding the police, as reflected in decreased stops, and crime is investigated in Paul G. Cassell & Richard Fowles, *What Caused the 2016 Chicago Homicide Spike? An Empirical Examination of the "ACLU Effect" and the Role of Stop and Frisks in Preventing Gun Violence*, 2018 U. ILL. L. REV. 1581 (2018) ("This Article provides empirical evidence that the reduction in stop and frisks by the Chicago Police Department beginning around December 2015 was responsible for the homicide spike that started immediately thereafter.").

98. Adam McCann, *Most Sinful States in America*, WALLETHUB (Feb 14, 2023), https://wallethub.com/edu/most-sinful-states/46852.

99. One sixteenth of the measure *anger & hatred* is "deaths due to firearms per capita." So, it is possible this measure involves some confounding components.

- vanity; and
- laziness.

Most seem self-explanatory. One that is not, *excesses & vices*, is based on:

- share of obese adults;
- fast-food establishments per capita;
- excessive drinking;
- share of adults who reported having driven after drinking too much;
- share of adult smokers;
- share of adult coffee drinkers;
- share of population using marijuana;
- retail opioid prescriptions dispensed per 100 persons;
- drug overdose deaths; and
- debt-to-income ratio.

These ratings are, for the individual components, disclosed as ordered rankings (1st, 2nd, etc.). There is an overall figure, "*WalletHub vice index*," but that appears to be based on a linear combination of the component rankings. In particular, 97 percent of the variation in the *WalletHub vice index* is accounted for by a linear combination of the rankings on the seven individual components, which are ordinal (rank order) numbers, as a regression shows:

Table 1: OLS Regression Showing the Relationship Between WalletHub Vice Index and the Ordinal Rankings of the Seven Components

	(Model 1)
Variables	WalletHub vice index
anger	-0.110***
	(-5.494)
jealousy	-0.162***
	(-6.978)
excesses & vices	-0.014
	(-0.742)
greed	-0.141***
	(-7.999)
lust	-0.197***
	(-8.575)
vanity	-0.222***
	(-9.888)
lazy	-0.127***
	(-6.259)
Constant	66.088***
	(69.835)
Observations	50
R-squared	0.971

Robust *t*-statistics in parentheses. Significance: *** p<0.01, ** p<0.05, * p<0.1.

Use of a ranking as a continuous variable is suspect—the steps between the levels can vary substantially.[100] And a linear combination of rankings would suffer from a similar problem. So, two dummy variables for each of the vice (sin) components were computed for use in our estimations: high and low. For each of these categories, "low" designates a State in rank 34–50 (1 is the highest in the category), and

100. *See generally* Richard Williams, *Ordinal Independent Variables* (Mar. 5, 2021), https://www3.nd.edu/~rwilliam/stats3/OrdinalIndependent.pdf, http://web.archive.org/web/20230523010428/https://www3.nd.edu/~rwilliam/stats3/OrdinalIndependent.pdf.

"high" designates 1–17. The remainder, those in the "medium" category, are the held-out case.[101]

B. Giffords score.

As noted above, ratings of States' firearms laws by Giffords Law Center have been previously used in empirical literature.[102] For this Essay, ratings of States' firearms laws were taken from the November 18, 2023, Internet Archive capture of the Giffords Law Center's Annual Gun Law Scorecard,[103] which the organization apparently styles as the 2022 rankings.[104] On their rating scale, restrictive States have higher scores. The scores as reported by Giffords Law Center are on a familiar letter grade scale, with a plus or minus, ranging from "A" to "F."[105] To perform regressions, these letter grades were restated on a numerical scale.[106] The term *Giffords score* is used in this Essay to reference that restated variable.

C. Freedom.

The basic concept of the investigation of the relationship between the ratings in Giffords' Annual Gun Law Scorecard for the various States and levels of freedom came to this author's attention on

101. One cannot use in regressions dummy variables that collectively cover the entire data set. One of them—in this case, "medium"—has to be "held-out." *See, e.g.*, JOSEPH F. HAIR, JR., ET AL., MULTIVARIATE DATA ANALYSIS WITH READINGS 51 (2d ed. 1987) (stating, as to a data set containing three dummy variables that collectively designate the full age range of the observations (individuals) in the sample, "Only two of the variables … are necessary because the zero level of two variables defines the presence of the third variable."). That is, the estimates for dummy variables used in the regressions reflect variation from the held-out case.

102. *See supra* note 92 and accompanying text.

103. Giffords Law Center, *Annual Gun Law Scorecard* (Nov. 18, 2023), https://giffords.org/lawcenter/resources/scorecard/#gun-laws-save-lives?scorecard=MT(click "Table"). The page was archived on Nov. 18, 2023. http://web.archive.org/web/20231118140848/https://giffords.org/lawcenter/resources/scorecard/#gun-laws-save-lives?scorecard=MT.

104. *See Id.* (identifying a series of "Previous Scorecards" for each year from 2012 through 2021, and for 2010).

105. *See Id.*

106. Grades of A, B, C and D were converted to 96.666667, 86.666667, 76.666667, 66.666667, respectively. For each, a "+" added 0.333333, and a "–"subtracted 0.333334, respectively. An "F" was assigned a numerical score of 60.

November 19, 2023, on reading of the most recent annual release of Cato Institute's series styled, "Freedom in the 50 States."[107]

The Cato Institute annually reports an overall freedom score for each State, designated *overall freedom* in this Essay, as well as the components. This Essay uses the figures styled by the Cato Institute as those for 2022,[108] the most recent ones that are available at the time the data were downloaded. The variable *overall freedom* is derived by the Cato Institute from three components: regulatory policy (a State's score referenced as *regulatory policy* in this Essay) and fiscal policy, collectively referenced by the Cato Institute as economic freedom, and *personal freedom* (a State's score referenced as *personal freedom* in this Essay). *Overall freedom* is simply the sum of the scores for economic freedom and personal freedom.[109] The components are set forth in the margin.[110]

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107. Cato Institute, *Freedom in the 50 States: An Index of Personal and Economic Freedom*, https://www.freedominthe50states.org. Component weightings are discussed at Cato Institute, *Freedom in the 50 States: How It's Calculated*, https://www.freedominthe50states.org/calculation (visited Jan. 4, 2024). A spreadsheet containing the data is available at that page. *Id.* (click "Download Data") [hereinafter Cato Institute Spreadsheet].

108. Cato Institute, *Freedom in the 50 States: An Index of Personal and Economic Freedom*, https://www.freedominthe50states.org/ (click "Download Data").

109. This is not stated on the web pages as prominently as one might like. To confirm that, this author had to examine the formulae included in the spreadsheet. Those show that *overall freedom* = *personal freedom* + *economic freedom*. Cato Institute Spreadsheet, *supra* note 107.

110. The components, set forth in Cato Institute, *Freedom in the 50 States: How It's Calculated*, https://www.freedominthe50states.org/calculation (visited Jan. 4, 2024) (sheet "Overall," column K), are as follows:

> Regulatory policy: land-use freedom, 11.6%; health insurance freedom, 8.1%; labor market freedom, 4.9%; lawsuit freedom, 3.2%; occupational freedom, 2.7%; miscellaneous regulatory freedom, 2.4%; cable and telecom freedom, 1.0%.
> Fiscal policy: State taxation, 12.5%; government consumption and investment, 8.2%; local taxation, 7.8%; government employment, 2%; government debt, 0.3%; cash and security assets, 0.2%.
> Personal freedom: incarceration and arrests, 6.7%; gambling freedom, 4.0%; gun rights, 3.6%; tobacco freedom, 3.3%; marriage freedom, 3.1%; cannabis & salvia freedom, 2.8%; alcohol freedom, 2.5%; asset forfeiture, 2.1%; *mala prohibita*, 1.4%; travel freedom, 1.1%; and campaign finance freedom, 0.1%.

Id.

The *personal freedom* score for a State for a year, as computed by the Cato Institute, equals the sum of scores for each of the following:

- gun rights;
- alcohol freedom;
- cannabis freedom;
- travel freedom;
- gaming freedom;
- [freedom re.] *mala prohibita*;
- educational freedom;
- tobacco freedom;
- [freedom re.] asset forfeiture;
- [freedom re.] incarceration and arrests;
- marriage freedom; and
- campaign finance freedom.[111]

In general, for each variable, its average is zero[112] for all States over the period of 2000 to 2022, inclusive. However, because the variables are standardized over a 23-year period, for each component the average for 2022 alone is not zero. For 2022, the range of the averages for the components is from –0.0368 to 0.0439. Weighting is reflected in the variation of the standard deviation for each of the components. The standard deviation of the components for 2022 ranged from 0.0005 to 0.0475.

Gun rights is one of the components included by the Cato Institute within *personal freedom*. Our investigation examines the relationship between freedom and firearms law or firearms ownership in a State. To do that, we should back-out the component for gun rights from Cato institute's freedom measures.

Because the Cato Institute's overall *personal freedom* score is simply the sum of the components, i.e., there is not uneven weighting of components,[113] one can back-out the gun rights component by simply subtracting it. So, a new measure was created, consisting of

111. Cato Institute Spreadsheet, *supra* note 107 (sheet "Personal," column II). The weighting reflected in note 110 would appear to reflect a variation in the standard deviation among the components. The precise relationship is apparently detailed in a multi-step process, the structure of which is too far afield to endeavor to address.
112. This is subject to the precision with which Excel makes the calculations. So, Excel may report a figure that is very small, e.g., with a magnitude on the order of 10^{-11} or smaller. However, for one component, tobacco freedom, the average is –0.0024532. It is not clear why that is the case—why the figure is much farther from zero for this component, as compared to all others.
113. Cato Institute Spreadsheet, *supra* note 107.

the Cato Institute's *personal freedom* for a State, with the component based on *gun rights* (Cato's figure for gun rights in the State) subtracted. This new measure is referenced in this Essay as *personal freedom w/o gun rights*. That is: *personal freedom w/o gun rights* + *gun rights* = *personal freedom*.

In addition, a review of the components of one of the elements of *personal freedom*, personal travel, showed that a substantial part of the variation among States on that measure was accounted for by a single component: Whether the jurisdiction allowed issuance of a driver's license without a Social Security Number. Not requiring it is styled as being pro-freedom. However, a review of the States that had that feature seemed to reflect not a general sense of freedom for citizens but, rather, a desire to encourage the presence of persons illegally present in the country. Additionally, as shown in Table 11, this variable predicts a surprising majority of the variation in *Giffords score* among the States. And, because the shift to eliminating a Social Security Number requirement is recent, it ends-up having a disproportionate impact on *travel freedom* when one looks at 2022 alone. That is because the methodology that Cato Institute uses generates a variable that is standardized over a 23-year period. Because eliminating this requirement is a recent phenomenon, that results in this particular component being disproportionately weighted for 2022 figures.

For that reason, a second measure of travel freedom was created, referenced as *alternate travel freedom* in this Essay, with this component removed. In particular, in rounded figures: The variable *alternate travel freedom*, as used in this Essay, is 0.00146 greater than travel freedom, where the State requires a Social Security Number to get a driver's license; and, *alternate travel freedom* is 0.00895 less than *travel freedom* where the State does *not* require a Social Security Number to get a driver's license. As used in this Essay, the variable *SSN* is a dummy variable equal to 1 where the State does not require a Social Security Number to get a driver's license. So, to state it another way, *alternate travel freedom* = *travel freedom* – *[0.01041 x SSN] + 0.00146*.[114]

114. The reason that *alternate travel freedom* is never the same as *travel freedom* may not be obvious. In sum, *travel freedom* is computed by summing z-scores for each component, after each is multiplied by a weighting factor. Thus, elimination of a component of *travel freedom* that has two possible choices, computation of an *alternate travel freedom* variable will results in the adjusted score being higher than *travel freedom* for some and lower for others.

In detail, the score for *travel freedom* is based on scores on the following, reproduced verbatim from the column headings (with bracketed material added):

- Finger or thumb print required for driver's license? (1=state, 0.5=local, 0=no) [weighted 0.0011126;]
- Drivers' licenses available to residents without SSNs? (1=yes, 0=no) [weighted 0.0036139;]
- Seat belt laws (the sum of two binary variables that are not well-described) [weighted 0.0012826;]
- Motorcycle helmet law covering all drivers? (1=yes, 0=no) [weighted 0.0005450;]
- Statewide ban on handheld cell phones for all drivers? (2=primary,1=secondary, 0=no) [weighted 0.0001104;]
- Open container law for automobile drivers or passengers? (1=yes, 0=no) [weighted 0.0001095;]
- Sobriety checkpoints authorized? (1=yes, 0=no) [weighted 0.0007774;]
- Uninsured/underinsured coverage required? (2=both, 1=uninsured only, 0=no) [weighted 0.0005308; and]
- Automated License Plate Reader Data Use and Retention (2=Significant statutory limits on use of ALPRs and retention of data; 1=data use and retention limited by statute, .5 if use and data retention limited by AG opinion/directive, 0= no limits on data use and retention) [weighted 0.0030543.]

Each is converted to a *z*-score by the Cato Institute (meaning transformed so that each variable, over the full (multi-year) sample, has an average of zero and a standard deviation of 1), This results in z-scores scores for the Social Security Number component being either 2.477400962 or –0.403297831. The z-scores for each of the components are then weighted (multiplied by the weighting factor referenced above) and summed to get the *travel freedom* score.Of the 50 States, 32 require a Social Security Number, and 18 do not. (The former are Alabama, Alaska, Arizona, Arkansas, Florida, Georgia, Idaho, Indiana, Iowa, Kansas, Kentucky, Louisiana, Maine, Michigan, Minnesota, Mississippi, Missouri, Montana, Nebraska, New Hampshire, North Carolina, North Dakota, Ohio, Oklahoma, Pennsylvania, South Carolina, South Dakota, Tennessee, Texas, West Virginia, Wisconsin and Wyoming. The latter are California, Colorado, Connecticut, Delaware, Hawaii, Illinois, Maryland, Massachusetts, Nevada, New Jersey, New Mexico, New York, Oregon, Rhode Island, Utah, Vermont, Virginia and Washington.)

The Social Security Number component ends-up having a disproportionate impact on the Cato Institute's *travel freedom* score for 2022, because the Social Security Number component is standardized over a 23-year period, in which generally a Social Security Number was required. The substantial following for the minority position, which does not require one, has been coalesced relatively recently. According to the Cato Institute's spreadsheet, from 2000 through 2012, the percentage of States not requiring a Social Security Number for a driver's license never exceeded

In addition, a new variable reflecting personal freedom excluding both the gun rights and the SSN components, i.e., with the gun rights and SSN components backed-out, was created. In particular:

personal freedom w/o gun and SSN = *personal freedom w/o gun rights* – *[0.01041 x SSN]* + *0.00146* (rounded).

D. Proxy for per capita firearms ownership.

As noted above, use of percentage of suicides committed with a firearm, as a proxy for firearms ownership, appears to be commonly accepted in the literature.[115] Data for death by suicide, all causes, and death by suicide, with any firearm instrumentality, were taken from the Centers for Disease Control and Prevention's WONDER database.[116] The proxy used in this Essay, *frac. suicide gun*, is simply, for each State, the latter figure divided by the former figure.

6%. It rose to 22% in 2013, and stayed below 30% until 2021. In 2022, it rose to 36%.

In this way, the Social Security Number component ends-up having the following impact on the *travel freedom* computed by Cato Institute. If one is not required (pro-freedom, as classified by Cato Institute), it increases the *travel freedom* score by *2.477400962 x 0.0036139*, or 0.008953079. If an a Social Security Number is required, it decreases the *travel freedom* score, the change being *–0.403297831 x 0.0036139*, or –0.001457478.

115. *See supra* note 62 and accompanying text.

116. Data for death by suicide in the 50 States was taken from Centers for Disease Control and Prevention, National Center for Health Statistics, Mortality Data on CDC Wonder. https://wonder.cdc.gov/Deaths-by-Underlying-Cause.html. For the suicide from all causes: select "2018-2021: Underlying Cause of Death by Single-Race Categories," click "I Agree," select "Group Results By: State," select "4. Select year and month: Year / Month: +2021," select "6. Select cause of death: select ICD-10 Codes, click: "+V01-Y89 (External causes of morbidity and mortality," click "Open," click "+X60-X84 (Intentional self-harm)," click "Send." For the suicide with firearms instrumentalities: *Id.*; select "2018-2021: Underlying Cause of Death by Single-Race Categories," click "I Agree," select: "Group Results By: State," select: "4. Select year and month: Year / Month: +2021," select: "6. Select cause of death: Select: ICD-10 Codes; click: "+V01-Y89 (External causes of morbidity and mortality)," click "Open," control + click "X72 (Intentional self-harm by handgun discharge)", "X73 (Intentional self-harm by rifle, shotgun and larger firearm discharge)" and "X74 (Intentional self-harm by other and unspecified firearm discharge)," click "Send."

E. Summary statistics.

Summary statistics for some of the primary variables of interest are in the following table:

Table 2. Summary Statistics of Primary Variables

Variable	Mean	Median	Max.	Min.	Number
Giffords score	72.3333	60.0000	96.6667	60.0000	50
frac. suicide gun	0.5501	0.5719	0.7533	0.2079	50
Cato's Statistics					
overall freedom	0.0814	0.1190	0.7064	-0.7725	50
personal freedom	0.0872	0.0773	0.2784	-0.0206	50
pers free w/o gun	0.0748	0.0736	0.2681	-0.0487	50
pers freedom w/o gun and SSN	0.0725	0.0689	0.2591	-0.0472	50
regulatory policy	-0.0383	0.0173	0.1566	-0.4612	50
gun rights (Cato)	0.0123	0.0223	0.0358	-0.0458	50

Summary statistics for each of the 50 States in the data set.

Recall that the Giffords Law Center assigns higher ratings to States with restrictive firearms regimes, whereas Cato Institute's ranking of *gun rights* would do the opposite. A regression, shown in Table 3, reveals that eighty percent of the variation in the former is explained by the latter.

Table 3. OLS Regression Showing the Relationship Between Giffords' and Cato's Measures of Gun Restrictions/Rights

VARIABLES	(Model 2) Giffords score
gun rights (Cato)	-572.217***
	(-13.083)
Constant	79.392***
	(64.553)
Observations	50
R-squared	0.799

Robust *t*-statistics in parentheses. Significance: *** p<0.01, ** p<0.05, * p<0.1.

Summary statistics for the components of *personal freedom* (other than gun rights) are in the following table:

Table 4. Summary Statistics of Components of Cato's Personal Freedom Values

Variable	Mean	Median	Max.	Min.
alcohol freedom	0.0037	0.0044	0.0181	-0.0551
cannabis freedom	0.0202	0.0108	0.0760	-0.0186
gaming freedom	0.0027	-0.0073	0.1504	-0.0157
[freedom re.] *mala prohibita*	-0.0046	-0.0085	0.0197	-0.0097
educational freedom	0.0111	0.0088	0.1082	-0.0245
tobacco freedom	-0.0368	-0.0313	-0.0096	-0.0955
[freedom re.] asset forfeiture	0.0129	0.0114	0.0693	-0.0273
[freedom re.] incarceration and arrests	0.0439	0.0359	0.1608	-0.0341
marriage freedom	0.0210	0.0210	0.0238	0.0184
campaign finance freedom	-0.0001	-0.0002	0.0009	-0.0007
travel freedom	0.0007	-0.0009	0.0094	-0.0068
alternate travel freedom (without SSN)	-0.0016	-0.0018	0.0079	-0.0054
SSN (=1 if not required for driver's license)	0.3600	0.0000	1.0000	0.0000

Note: Summary statistics for the components of the Cato Institute's computation of personal freedom (excluding gun rights) for each of the 50 States for 2022 (the most recent available figures).

The general scope of most of these variables will be readily apparent (although there may be some unexpected details).[117] For *mala prohibita*, that is not the case. It is composed of the following, something of a grab-bag of attributes, as to which different attributes would appeal to different constituencies:

- "Affirmative action ban;"
- "Prostitution legal;"
- "Trans-fat bans;"
- "Raw milk legal;"
- "Mixed martial arts legal;"
- "Fireworks laws;"
- "Equal Rights Amendment;"
- "Physician-assisted suicide legal;"
- "DNA database index;" and
- "Religious freedom restoration act."[118]

IV. RESULTS

On or about November 15, 2023, the Cato Institute released its most recent edition of its indices for freedom within the States (for 2022).[119] Some preliminary empirical investigation was done by this author on November 19, 2023, concerning the relationship between *Giffords score* and freedom in a State. The relationship between these two variables became the subject of public commentary at about that time. For example, a November 21, 2023, article on the website *The Truth About Guns* states, "There's not a causal link, but there is a

117. The *alcohol freedom* measure has a significant component reflecting restrictions on distribution to retail vendors. In particular, it is described as: "Alcohol distribution control: 0.9%[;] Off-premises sales in grocery stores: 0.4%[;] Blue law index: 0.3%[;] Spirits taxes: 0.3%[;] Wine taxes: 0.2%[;] Beer taxes: 0.2%[;] Direct wine shipment ban: 0.1%[;] Keg registration/ban: 0.1%[;] Happy hour ban: 0.02%[; and] Mandatory server training: <0.01%." Cato Institute, *Freedom in the 50 States: How It's Calculated*, https://www.freedominthe50states.org/calculation (visited Jan. 11, 2024), click on the "+" following "alcohol freedom 2.5%."

118. Cato Institute, *Freedom in the 50 States: How It's Calculated*, https://www.freedominthe50states.org/calculation (visited Jan. 11, 2024) (click on the "+" following "*mala prohibita* 1.4%"). The components have varying weightings. *Id.*

119. Jason Sorens & William Ruger, How Free Is Your State?, Cato Institute (Nov. 15, 2023 4:27PM), https://www.cato.org/blog/new-freedom-50-states, http://web.archive.org/web/20231117011123/https://www.cato.org/blog/new-freedom-50-states.

correlational link to be made. The states with the most freedom are also states that welcome the firearm industry and trust citizens to exercise their rights."[120]

This Part provides a more formal examination of the relationship between those variables, including an examination of the components of freedom. When one examines the components, a more complex mosaic emerges. This Part also reports results of the relationship between a proxy for per capita firearms ownership in a State and freedom.

However, because this Essay is part of a symposium concerning vices, let us first turn to the relationship between vices and attributes of a State. In particular, the relevant attributes examined are a jurisdiction having, in the view of the Giffords Center, favorable firearms laws (i.e., having restrictive firearms laws), and a proxy for the State's per capita firearms ownership.

A. Relationships Between Firearms and the Respective State's Levels of Vices

This author's *ex ante* hypothesis was that the anger and jealousy measures would be particularly likely to be related to the proxy for firearms ownership (and perhaps as well, with the opposite sign, for the *Giffords score*). Note that for both, there might be two explanations: that persons with high levels of the vice might wish to possess a firearm in order to fulfill their desires, or that persons who might be victims might increasingly wish to possess the firearms, in response. *A priori* expectations as to other vices were not as strong.

This is, of course, research, not an exercise in rationalization. And, as it turned out, some that were not expected to be significant were, and vice versa.

Regressions of the following estimated relationships were performed. The independent variables were fourteen dummy variables, two for each of the seven vices addressed by Wallet Hub. As noted above,[121] for each of those vices, a dummy variable indicating the

120. Joe Bartozzi, *Dead Last: Cato Ranks New York the Least Free State in America for the 23rd Straight Year*, THE TRUTH ABOUT GUNS (Nov. 21, 2023), https://www.thetruthaboutguns.com/dead-last-cato-ranks-new-york-the-least-free-state-in-america-for-the-23rd-straight-year, http://web.archive.org/web/20240104213123/https://www.thetruthaboutguns.com/dead-last-cato-ranks-new-york-the-least-free-state-in-america-for-the-23rd-straight-year/.

121. *See supra* note 101 and accompanying text.

State had a high level, and one indicating the State had a low level, were created, the seventeen highest and the seventeen lowest, respectively. The jurisdiction's *Gifford score* and the proxy for its per capita firearms ownership were both estimated as linear combinations of these fourteen dummy variables. The held-out case is a State having a middle level (the middle sixteen States) for each of the seven vices.

The results for these ordinary least squares estimations are shown in Table 5, models 3 and 5, respectively. Those were re-estimated using stepwise regression,[122] with the results shown in models 4 and 6, respectively.

"Stepwise regression is a statistical technique that calculates correlations between multiple predictor variables and a single outcome variable."[123] The process yields, for each estimation, the relationship between the dependent variable and the subset of the independent variables that are most significant.[124] Stepwise regression is in the nature of a "data mining" tool (something of a pejorative when used by academics), and has some detractors as to its use in scholarly work:

> Stepwise regression is a popular data-mining tool that uses statistical significance to select the explanatory variables to be used in a multiple-regression model.
>
> . . . A fundamental problem with stepwise regression is that some real explanatory variables that have causal effects on the dependent variable may happen to not be statistically

122. The reported results were generated using Stata's stepwise command, using backward-selection estimation, with a significance level of 0.10. *See generally* Stata.com, *Stepwise—Stepwise Estimation*, https://www.stata.com/manuals13/rstepwise.pdf (discussing Stata's stepwise command) (visited Jan. 18, 2024).

123. Danielle E. Chojnacki et al., *An Empirical Basis for the Admission of Expert Testimony on False Confessions*, 40 ARIZ. ST. L.J. 1, 35 (2008).

124. *See* Chojnacki et al., *supra* note 123, at 35. *See also* Dylan O. Keenan, Note, *Confronting* Crawford v. Washington *in the Lower Courts*, 122 YALE L.J. 782, 819 (2012) ("Stepwise regression takes several iterative steps that narrow down the set of variables to those explanatory variables which have a statistically significant relationship with the dependent variable."); S. S. Samuelson & L. J. Jaffe, *A Statistical Analysis of Law Firm Profitability*, 70 B.U. L. REV. 185, 203 (1990) (discussing stepwise regression); HAIR, ET AL., *supra* note 101, at 40–41 (describing backward-selection stepwise estimation, using the term "[b]ackward estimation"); SVETLOZAR T. RACHEV ET AL., FINANCIAL ECONOMETRICS: FROM BASICS TO ADVANCED MODELING TECHNIQUES 114, 120–21 (2007) (discussing stepwise regression).

> significant, while nuisance variables may be coincidentally significant.[125]

In the stepwise regressions, for each vice, the high and low variables were grouped. That is, for each pair, either both were included or neither was included.[126]

As to the suitability of application of this data-mining technique to this particular context, this author has conflicting views. The data set is small, having only 50 observations. There is a large number of possible independent variables, fourteen, relative to the sample size. So, estimations using each of the possible independent variables may produce results that are not meaningful but, rather, the product of random chance.

The ultimate choice was made to present the results for both the stepwise regressions and the estimations that include all independent variables. Presenting one without the other suggests something is being hidden. And, ultimately, there is value to presenting to the reader the relationships that exist, with the reader ultimately free to draw whatever conclusions he wishes.

i. Vanity.

Focusing on the results of the stepwise regressions (the others being qualitatively similar), the apparent relationships are: There is a *positive* relationship between *Giffords score* and vanity. That is, to provide a double-negative, a *low* level of vanity is *negatively* related to a jurisdiction having firearms law that the Giffords Center finds favorable. In addition, there is a *negative* relationship between the proxy for per capita firearms ownership and vanity. That is, a *low* level of vanity is *positively* related to the proxy for per capita firearms ownership.

The estimated relationships that are statistically significant are also of practical significance—the estimates would indicate a variation in the independent variable that would be of note, relative to the range of the independent variable. As to *low vanity* estimating *Giffords score*: an estimated –8.743 coefficient indicates an estimated

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125. Gary Smith, *Step Away from Stepwise*, 5 J. BIG DATA (2018) (article no. 32), https://journalofbigdata.springeropen.com/articles/10.1186/s40537-018-0143-6.

126. *See generally* Stata.com, *supra* note 122 (indicating, as to including multiple variables in parentheses, "this group of variables is to be included or excluded together").

change that is 23.8% of the sample's range of *Giffords score*.[127] As to *low vanity* estimating the proxy for per capita firearms ownership: an estimated 0.132 change would be 24.2% of the sample's range for the proxy for per capita firearms ownership, *frac. suicide gun*.[128]

However, in both cases, the highest level of vanity is not different, in a statistically significant way, from the middle level (*p*-values of 0.085 and 0.399 for *Giffords score* and the proxy for per capita firearms ownership, respectively).

ii. Laziness.

A State being among those with the most lazy population (*high lazy = 1*) has a statistically significant, negative relationship with the proxy for per capita firearms ownership. The parameter estimate, –0.118, is of practical significance, of a magnitude that is 21.6% of the estimated independent variable's (*frac. Suicide gun*'s) range.[129] The variable *high lazy* has a positive estimated relationship with restrictive firearms law (*Giffords score*), but it is not statistically significant at the 5-percent level (*t*-statistic of 1.790, *p*-value of 0.081).[130]

iii. Jealousy and excesses and vices.

On the other hand, the proxy for per capita firearms ownership is positively related to *high jealousy* and *high excesses & vices* in the State.[131] The parameter estimates are of a relatively comparable practical significance. However, only the second of those two variables (*high excesses & vices*) is significant when estimating the *Giffords score* (with a somewhat higher parameter estimate magnitude relative to the dependent variable range and, thus, higher estimated practical

127. That is, as to *Giffords score,* the maximum, 96.6667, and the minimum, 60, *see supra* tbl.2, indicate a range of 36.6667. The absolute value of the parameter estimate, –8.743, *see* tbl.5 (model 4), is 23.8% of 36.6667.

128. That is, as to the proxy for per capita firearms ownership, a maximum of 0.7533 and a minimum of 0.2079, *see supra* tbl.2, indicate a range of 0.5454. The parameter estimate, 0.132, *see* tbl.5 (model 6), is 24.2% of that range.

129. That is, as to the range of range of 0.5454 in the proxy for per capita firearms ownership, the magnitude of the parameter estimate, –0.118, *see* tbl.5 (model 6), is 21.6% of that range.

130. Removing the two most influential observations results in a higher *t*-statistic, just below the 5 percent level, 0.055. *See* Table A.1, model A1 (*t*-statistic of 1.977).

131. The components of the *excesses & vices* variable are defined above. *See supra* Section III.

significance). And, following the general pattern, in estimating *Giffords score, high excesses & vices* is of the opposite sign—negative.

iv. Influential observations.

It is desirable to assess whether the empirical results are significantly influenced by a small subset of observations. A procedure to address that involves "Cook's distance, which measures the aggregate change in the estimated coefficients when each observation is left out of the estimation."[132] "[V]alues of Cook's distance greater than 4/n should also be examined . . . ."[133] In this case, because the sample size is 50, that would call for examining observations where Cook's distance is greater than 0.08.

Model 4 was re-estimated with those observations, the States of Arizona (at 0.15) and Connecticut (at 0.18), removed. The results are in the Appendix (Table A.1, model A1). The results are qualitatively similar, except that it is possible *low greed* becomes negatively related to *Giffords score* in a statistically-significant way (which would support the view that greed is positively related to *Giffords score*). As noted above,[134] *Giffords score* has a positive estimated relationship with laziness (*high lazy*), at a *p*-value of 0.055, if two most-influential observations are removed.

The same procedure was followed as to the proxy for per capita firearms ownership. That resulted in eliminating the States of Connecticut (0.11), Hawaii (0.34) and Massachusetts (0.12). The results, shown in the Appendix, Table A.1, model A2, are qualitatively similar to those in Table 5.

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132. StataCorp LLC, *Stata Base Reference Manual: Release 18*, at 103, 118 (2023) (discussing Cook's Distance in connection with estimating a different type of model), https://www.stata.com/manuals/r.pdf#rregresspostestimation.
133. *Id.* at 2441.
134. *See supra* note 130 and accompanying text.

Table 5. OLS Regressions for the Relationships Between (x) each of (i) a State's *Giffords Score* and (ii) the Proxy for Per Capita Firearms Ownership (Dependent Variables), and (y) Vices

	(Model 3)	(Model 4)	(Model 5)	(Model 6)
VARIABLES	Giffords score	stepwise: Giffords score (paired, 0.10)	frac. suicide gun	stepwise: frac. suicide gun (paired, 0.10)
low vanity	-9.362*	-8.743**	0.144***	0.132***
	(-1.983)	(-2.202)	(4.041)	(3.748)
high vanity	9.019	8.680*	-0.031	-0.032
	(1.685)	(1.767)	(-0.623)	(-0.851)
low anger	2.719		-0.043	
	(0.605)		(-1.047)	
high anger	2.856		-0.046*	
	(0.656)		(-1.790)	
low lust	-1.197		-0.021	
	(-0.255)		(-0.415)	
high lust	-2.585		-0.015	
	(-0.540)		(-0.339)	
low jealousy	0.678		-0.056	-0.041
	(0.126)		(-1.331)	(-0.890)
high jealousy	-6.676		0.118**	0.113***
	(-1.427)		(2.425)	(3.002)
low excesses	-3.581	-0.533	0.013	0.012
& vices	(-0.683)	(-0.109)	(0.330)	(0.291)
high excesses	-19.063***	-14.640***	0.201***	0.170***
& vices	(-3.379)	(-3.887)	(4.052)	(4.792)
low greed	-5.872	-5.683	0.064**	
	(-1.307)	(-1.422)	(2.040)	
high greed	2.604	2.499	0.017	
	(0.667)	(0.762)	(0.484)	
low lazy	-4.541	-1.487	0.053	0.032
	(-0.740)	(-0.282)	(1.057)	(0.672)
high lazy	9.775**	7.700*	-0.135***	-0.118***
	(2.354)	(1.790)	(-3.437)	(-3.251)
Constant	80.910***	76.483***	0.460***	0.459***
	(10.921)	(13.242)	(6.147)	(8.007)
Observations	50	50	50	50
R-squared	0.569	0.518	0.615	0.553

Robust *t*-statistics in parentheses. Significance: *** p<0.01, ** p<0.05, * p<0.1.

This collection of dummy variables accounts for between 52% and 62% of the variation among States in *Giffords score* and the proxy for firearms ownership, *frac. suicide gun* (i.e., that is the range of the R^2 for the four models).

As noted above,[135] use of the overall vice ranking, *WalletHub vice index*, appears suspect, because it appears to be primarily a linear combination of ordinal (ordered rank) values for the various components. Nevertheless, for completeness, the *WalletHub vice index* was regressed against *Giffords score* and *frac. suicide gun*. The results are shown in Table 6. The overall *WalletHub vice index* is not statistically significant in either estimation.

Table 6: OLS Regression of the Relationship Between the Overall Vice Index and both Giffords Score and Fraction of Suicide Using a Gun

VARIABLES	(Model 7) Giffords score	(Model 8) frac. suicide gun
WalletHub vice index	0.307	0.002
	(1.405)	(0.765)
Constant	59.643***	0.483***
	(6.641)	(5.308)
Observations	50	50
R-squared	0.034	0.011

Robust *t*-statistics in parentheses. Significance: *** p<0.01, ** p<0.05, * p<0.1.

The regressions using the overall *WalletHub vice index* as an independent variable explain little of the variation in *Giffords ranking* and the proxy for per capita firearms ownership, *frac. suicide gun*—R^2 is three percent and one percent, respectively. And the *WalletHub vice index* is not statistically significant. In view of the manner in which the overall *WalletHub vice index* is constructed, the result does not seem informative.

135. *S*ee Williams, *supra* note 100 and accompanying text.

B. Relationship Between Firearms and Freedom Within a State

Table 7 shows the results of ordinary least squares regressions of the relationship among the States between *Giffords score* and various measures of a State's freedom, as reported by the Cato Institute.[136] Panel A shows the relationship within the set of all States. Panel B shows the relationship within the set of all States that did not receive an F rating from Giffords.

136. The computation of the independent variable reflecting personal freedom with the gun rights and SSN components backed-out is addressed above. *See supra,* Section III(B).

Table 7: OLS Regressions Estimating Various State Freedom Indices (per Cato Institute) with *Giffords Score*

Panel A: All 50 States

VARIABLES	(Model 9) overall freedom	(Model 10) personal freedom w/o gun rights	(Model 11) personal freedom w/o gun and SSN	(Model 12) regulatory policy freedom	(Model 13) personal freedom (w/ gun rights)
Giffords score	-0.012***	0.002***	0.002***	-0.008***	0.001
	(-4.370)	(3.780)	(3.243)	(-5.905)	(1.147)
Constant	0.965***	-0.073	-0.054	0.526***	0.041
	(5.105)	(-1.673)	(-1.237)	(5.822)	(0.911)
Observations	50	50	50	50	50
R-squared	0.328	0.176	0.138	0.484	0.019

Robust *t*-statistics in parentheses. Significance: *** p<0.01, ** p<0.05, * p<0.1.

Panel B: 24 States Not Having an "F" Rating from Giffords

VARIABLES	(Model 14) overall freedom	(Model 15) personal freedom w/o gun rights	(Model 16) personal freedom w/o gun and SSN	(Model 17) regulatory policy freedom	(Model 18) personal freedom (w/ gun rights)
Giffords score	-0.027***	0.001	0.000	-0.016***	-0.001
	(-3.498)	(0.451)	(0.118)	(-4.527)	(-0.867)
Constant	2.227***	0.058	0.088	1.215***	0.204
	(3.442)	(0.522)	(0.832)	(4.128)	(1.604)
Observations	24	24	24	24	24
R-squared	0.370	0.007	0.000	0.528	0.030

Robust *t*-statistics in parentheses. Significance: *** p<0.01, ** p<0.05, * p<0.1.

A few aspects of these results merit express identification.[137] As among all 50 States, subject to one exception, the relevant components of freedom are significant, but the sign is not consistent. The exception: the variable for *personal freedom* is not significant where the duplicative appearance of *gun rights* is not removed (model 13). As to the sign of the relationships: *Giffords score* is negatively related to Cato's measure of *overall freedom* and *regulatory policy freedom*. But *Giffords score* is positively related to Cato's measure of personal freedom, after backing-out the gun rights component (*personal freedom w/o gun rights*) and after additionally backing-out the component for whether a Social Security Number is required for a driver's license (*personal freedom w/o gun and SSN*).

Let us turn to the relationship between the proxy for per capita firearms ownership and measures of freedom. As noted above,[138] both Kopel et al. and this author previously investigated the relationship among countries between measures of freedom and per capita firearms ownership. This author found Transparency International's Corruptions Perception Index and the Heritage ratings of Government Integrity and Judicial Effectiveness were all positively related to estimates of civilian firearms ownership per capita.[139] And, before that, Kopel et al. found, for example, "For all three indices of liberty, [including one combining political rights and civil liberty scores,] the top firearms quartile rates [are] higher than every other quartile."[140]

The following table shows the relationship among various components of freedom, as reported by the Cato Institute, for States and the proxy for per capita firearms ownership.

137. These results are qualitatively the same as those omitting observations with a Cook's distance greater than 0.08. Compare model 9, model 11 and model 12 with Appendix, Table A.2, model A3, model A4 and model A5.

138. *See supra* notes 45–52 and accompanying text.

139. Barondes, *supra* note 40, at 374–75 tbl.3, panels A & B.

140. Kopel et al., *supra* note 21, at 18.

Table 8: OLS Regressions Estimating Various State Freedom Indices (per Cato Institute) with the Proxy for per Capita Firearms Ownership (Fraction of Suicide Deaths That Had a Firearm Instrumentality)

Panel A: All 50 States

VARIABLES	(Model 19) overall freedom	(Model 20) personal freedom w/o gun rights	(Model 21) personal freedom w/o gun and SSN	(Model 22) regulatory policy freedom	(Model 23) personal freedom (w/ gun rights)
frac. suicide gun	1.208***	-0.220***	-0.195***	0.765***	-0.086
	(3.339)	(-3.943)	(-3.537)	(5.422)	(-1.445)
Constant	-0.583**	0.196***	0.180***	-0.459***	0.134***
	(-2.665)	(6.664)	(6.200)	(-5.273)	(4.244)
Observations	50	50	50	50	50
R-squared	0.270	0.172	0.144	0.391	0.029

Robust *t*-statistics in parentheses. Significance: *** p<0.01, ** p<0.05, * p<0.1.

Panel B: 24 States Not Having an "F" Rating from Giffords

VARIABLES	(Model 24) overall freedom	(Model 25) personal freedom w/o gun rights	(Model 26) personal freedom w/o gun and SSN	(Model 27) regulatory policy freedom	(Model 28) personal freedom (w/ gun rights)
frac suicide gun	1.539**	-0.012	0.003	0.758***	0.099
	(2.697)	(-0.140)	(0.031)	(3.440)	(1.100)
Constant	-0.764**	0.111***	0.099***	-0.477***	0.054
	(-2.648)	(3.152)	(2.851)	(-4.271)	(1.443)
Observations	24	24	24	24	24
R-squared	0.323	0.001	0.000	0.323	0.052

Robust *t*-statistics in parentheses. Significance: *** p<0.01, ** p<0.05, * p<0.1.

As to all 50 States, the results are comparable to those estimating *Giffords score*, with the signs reversed. Subject to one exception, the relevant components of freedom are significant. The exception: the variable for *personal freedom* is again not significant where the duplicative appearance of *gun rights* is not removed (model 23). As to the signs of the relationships: *Frac. suicide gun* is positively related to the Cato Institute's measure overall freedom and regulatory policy freedom. But *frac. suicide gun* is negatively related to the Cato Institute's measure of personal freedom, after backing-out the gun rights component (*personal freedom w/o gun rights*) and after additionally backing-out the SSN for drivers' license component (*personal freedom w/o gun and SSN*).

In view of there being a variation in sign between the primary components of freedom in the estimations, it seems suitable to examine the relationship between the individual components of personal freedom and each of *Giffords score* and the proxy for per capita firearms ownership, *frac. suicide gun.*

Table 9 shows the relationship between individual components of personal freedom and *Giffords score.* Multiple regressions are included to account for Cato Institute's choice to include an atypical variable, requiring a Social Security Number for a driver's license. Model 29 shows the results with travel freedom, as reported by Cato Institute. Model 30 shows the results with the SSN component backed-out from travel freedom, *alternate travel freedom*. Model 31 uses both *alternate travel freedom* and a dummy variable for whether a Social Security Number is required in the jurisdiction to get a driver's license (*SSN*, equaling 1 where a driver's license is *not* required). The last two models, models 32 and 33, are, respectively, stepwise estimations,[141] as discussed above,[142] of the first (model 29) and third (model 31) estimations shown in the table.

Table 10 shows estimations using the same independent variables, but estimating the proxy for per capita firearms ownership, *frac. suicide gun.*

141. The reported results were generated using Stata's stepwise command, using backward-selection estimation, with a significance level of 0.10. None of the independent variables was grouped.

142. *See supra* notes 123–125 and accompanying text.

Table 9. OLS Regressions Estimating the Components of Personal Freedom Index (per Cato Institute) with *Giffords Score*

VARIABLES	(Model 29) Giffords score	(Model 30) Giffords score	(Model 31) Giffords score	(Model 32) stepwise Giffords score w/ travel freedom (p=0.10)	(Model 33) stepwise Giffords Score w/ alt. travel & SSN (p=0.10)
alcohol freedom	322.574**	60.035	221.717	302.972***	196.545*
	(2.479)	(0.724)	(1.572)	(3.615)	(1.981)
cannabis freedom	-77.643	-8.126	-78.157		
	(-1.063)	(-0.116)	(-1.342)		
travel freedom	1,256.239**			1,233.685***	
	(2.254)			(3.535)	
gaming freedom	55.162	108.225**	30.524		
	(1.061)	(2.437)	(0.586)		
mala prohibita	257.732**	371.307***	305.663**		199.267**
	(2.116)	(3.131)	(2.670)		(2.068)
educational freedom	-139.506***	-136.384***	-80.850*	-127.150***	-84.130**
	(-2.881)	(-2.933)	(-1.919)	(-2.985)	(-2.147)
tobacco freedom	-285.775***	-306.216***	-223.407**	-272.643***	-205.607**
	(-3.421)	(-3.853)	(-2.433)	(-3.397)	(-2.460)
asset forfeiture	-86.616	-2.833	-31.726		
	(-1.335)	(-0.036)	(-0.531)		
incarceration and arrests	25.030	63.837	31.171		
	(0.622)	(1.626)	(1.007)		
marriage freedom	893.454	1,120.543*	339.554		
	(1.397)	(1.788)	(0.627)		
campaign finance freedom	3,048.196	871.478	1,611.106		
	(1.180)	(0.317)	(0.691)		
alt. travel freedom (w/o SSN component)		-882.444*	-32.657		
		(-1.942)	(-0.084)		
SSN (=1 if not needed)			17.057***		16.971***
			(3.417)		(4.425)
Constant	45.299***	36.336***	52.893***	61.688***	59.771***
	(3.492)	(3.101)	(5.093)	(23.035)	(30.970)
Observations	50	50	50	50	50
R-squared	0.771	0.718	0.823	0.720	0.803

Robust *t*-statistics in parentheses. Significance: *** p<0.01, ** p<0.05, * p<0.1.
SSN equals 1 where the State does not require a Social Security Number to obtain a driver's license.

Table 10. OLS Regressions Estimating the Proxy for per Capita Firearms Ownership (Fraction of Suicide Deaths That Had a Firearm Instrumentality) with the Components of Personal Freedom Index (per Cato Institute)

	(Model 34)	(Model 35)	(Model 36)	(Model 37)	(Model 38)
VARIABLES	frac. suicide gun	frac. suicide gun	frac. suicide gun	stepwise frac. suicide gun w/ travel freedom (p=0.10)	stepwise frac. suicide gun w/ alt. travel & SSN (p=0.10)
alcohol freedom	-3.737***	-2.000*	-3.072***	-3.273***	-2.714***
	(-2.904)	(-1.767)	(-3.215)	(-2.899)	(-3.341)
cannabis freedom	1.253**	0.792	1.256**	1.412**	1.406***
	(2.165)	(1.683)	(2.569)	(2.467)	(2.844)
travel freedom	-8.340*			-7.257*	
	(-1.964)			(-1.907)	
gaming freedom	0.284	-0.069	0.446		
	(0.835)	(-0.244)	(1.258)		
mala prohibita	-1.618	-2.369*	-1.934	-1.807*	-2.409**
	(-1.430)	(-2.011)	(-1.639)	(-1.803)	(-2.488)
educational freedom	0.010	-0.008	-0.377		
	(0.026)	(-0.021)	(-1.005)		
tobacco freedom	2.453***	2.590***	2.041**	2.486***	2.092**
	(2.815)	(3.041)	(2.212)	(2.860)	(2.362)
asset forfeiture	0.603	0.049	0.241		
	(0.772)	(0.054)	(0.275)		
incarceration and arrests	-1.248***	-1.505***	-1.289***	-1.323***	-1.325***
	(-3.395)	(-3.554)	(-3.524)	(-3.645)	(-4.017)
marriage freedom	0.525	-0.998	4.179		
	(0.102)	(-0.199)	(0.768)		
campaign finance freedom	-16.369	-1.986	-6.889		
	(-0.915)	(-0.106)	(-0.391)		
alt. travel freedom		5.795	0.162		
		(1.081)	(0.037)		
SSN(=1 if not needed)			-0.113**		-0.093**
			(-2.477)		(-2.582)
Constant	0.662***	0.722***	0.612***	0.680***	0.690***
	(6.185)	(7.816)	(5.523)	(26.785)	(31.677)
Observations	50	50	50	50	50
R-squared	0.703	0.675	0.730	0.695	0.720

Robust *t*-statistics in parentheses. Significance: *** p<0.01, ** p<0.05, * p<0.1.
SSN equals 1 where the State does not require a Social Security Number to obtain a driver's license.

Let us first turn to what seems common in the results between the two preceding tables (except for the independent variables having the opposite sign when estimating *Giffords score* versus when estimating the proxy for per capita firearms ownership, *frac. suicide gun*). Focusing on the stepwise regressions where travel freedom has been replaced with its two components, *SSN* and *alternate travel freedom* (models 33 and 38): The following are consistently significant: [freedom re.] *mala prohibita*, *SSN* (not required for a driver's license)[143] and *tobacco freedom*. As to the signs: where estimating *Giffords score*, the first two are positive, and the last, tobacco freedom, is negative.

As to each of the relationships, referenced in the immediately preceding paragraph that are significant in estimating both *Giffords score* and the proxy for per capita firearms ownership, the sign for the independent variable flips when estimating the proxy for per capita firearms ownership. If it is positive in estimating *Giffords score*, it is negative in estimating the proxy for per capita firearms ownership, and vice versa.

However, the relationship between *SSN* and the proxy for per capita firearms ownership is materially influenced by the presence of a few observations. Eliminating those with a Cook's distance over 0.08 results in the relationship not being significant. See Table A.5, models A13 and A14.

Alcohol freedom[144] also appears to be consistently significant, positively related to *Giffords score* and negatively related to the proxy for per capita firearms ownership. However, in estimating *Giffords score*, the result for this variable is highly influenced by one state, Utah. As shown in Table A.4 in the Appendix, omission of Utah from the sample results in *alcohol freedom* not being significant in estimating *Giffords score.*

There are components of freedom that are significant in estimating the proxy for per capita firearms ownership, but are not in estimating *Giffords score*, and vice versa. The proxy for per capita firearms ownership is positively associated with *cannabis freedom*, and negatively associated with freedom as to *incarceration and arrests*.

143. However, the relationship between *SSN* and the proxy for per capita firearms ownership is not significant if one removes some highly influential observations (about 10 percent of the sample). *See infra* Appendix, Table A.5.

144. Some discretion has been exercised at to the variable *alcohol freedom* in estimating the *Giffords score.* The *p*-value is 0.054.

But each is not statistically significant when estimating *Giffords score*.

Two implications of the results for cannabis merit mention. First, Federal law currently makes it unlawful for a user of marijuana, even one whose use is for medical purposes and not criminal under State law, to possess a firearm or ammunition.[145] So, there is some tension posed by the finding that firearms ownership within a State is positively related to *cannabis freedom*. One might suggest the two are related because there is a variation among States as to general willingness to submit to restrictions that are perceived as unnecessary or inappropriate. That view calls to mind the following observation made about Americans in 1775: "In 1775, the great Anglo-Irish statesman Edmund Burke tried to warn the British Parliament that the Americans could not be subjugated: '[T]he people are Protestants, and of that kind which is the most adverse to all implicit submission of mind and opinion.' "[146] But that would be entirely speculative.

Second, at least to the currently older generations, this relationship seems to contrast with one's understanding concerning values that traditionally have gone hand-in-hand. A 1970s view might tie marijuana use to "beatnicks and hippies,"[147] which is a group that

145. 18 U.S.C. § 922(g)(3) (referencing one "who is an unlawful user of or addicted to any controlled substance (as defined in section 102 of the Controlled Substances Act (21 U.S.C. 802))," subject to an interstate commerce nexus, which is satisfied by, e.g., "possess[ing] in or affecting commerce"); United States v. Bellamy, 682 F. App'x 447, 450–51 (6th Cir. 2017) (stating use within a State's medical marijuana regime nevertheless triggers a firearms prohibition, and discussing written guidance from ATF, styled as an "Open Letter" to a similar effect); Bradley v. United States, 402 F. Supp. 3d 398, 403 (N.D. Ohio 2019) ("[M]arijuana is an unlawful drug under federal law (which does not recognize any medical benefit to the use of that drug), and §§ 922 (d)(3) and (g)(3) bar the possession of firearms by, and sale of firearms to, unlawful drug users."); Wilson v. Lynch, 835 F.3d 1083, 1098 (9th Cir. 2016) (addressing the legality of the issuance of the Open Letter).

146. JOHNSON ET AL., *supra* note 13, at 222 (quoting Edmund Burke, Speech on Moving His Resolutions for Conciliation with the Colonies (Mar. 22, 1775), *in* EDMUND BURKE: SELECTED WRITINGS AND SPEECHES 159–60 (Peter J. Scanlis, ed., 1963)).

147. *E.g.*, John Hudak, *Marijuana's Racist History Shows the Need for Comprehensive Drug Reform*, Brookings (June 23, 2020), https://www.brookings.edu/articles/marijuanas-racist-history-shows-the-need-for-comprehensive-drug-reform/ ("By painting the drug as a scourge from south of the border to a "jazz drug" to the corruptive intoxicant of choice for beatniks and hippies, marijuana as a drug and the laws that sought to control it played on some of America's worst tendencies around race, ethnicity, civil disobedience, and otherness.").

does not naturally come to mind when one thinks of firearms owners. The change in pairings of values seems worthy of mention.[148]

Giffords score is negatively associated with educational freedom, whereas the variable is not statistically significant in estimating the proxy for per capita firearms ownership. This result is somewhat sensitive to a few data points. As shown in Table A.4 in the Appendix, the relationship is not statistically significant when all observations with a Cook's distance over 0.08 are eliminated (six observations).

Lastly, it bears mention that whether a jurisdiction requires a Social Security Number to get a driver's license is highly related to the *Giffords score*. That is shown in Table 11. Whether a Social Security Number is required explains 67% of the variation in *Giffords score.* It explains 41% of the variation in the proxy for per capita firearms ownership. In sum, States that want the public to be populated with illegal immigrants wish to curtail substantially the right of members of the public to defend themselves with firearms.

Table 11. OLS Regressions Using only SSN Not Needed for Driver's License to Estimate Gifford's Score and Proxy for per Capita Firearms Ownership

	(39)	(40)
VARIABLES	Giffords score	frac. suicide gun
SSN (=1 if not needed for driver's license)	23.843***	-0.170***
	(9.381)	(-4.851)
Constant	63.750***	0.611***
	(48.086)	(48.769)
Observations	50	50
R-squared	0.672	0.406

Robust *t*-statistics in parentheses. Significance: *** p<0.01, ** p<0.05, * p<0.1.

148. Perhaps of note is the following said of prominently anti-firearm public persona Michael Bloomberg, *see, e.g., supra* note 57: "Even Michael Bloomberg—billionaire, corporate executive, and the former mayor of New York City—despite having a mixed record on marijuana policy, has admitted he used marijuana and liked it." JOHN HUDAK, MARIJUANA: A SHORT HISTORY, at 100 (2d ed. 2020).

In sum, the results show the relationships between both Giffords Law Center's ranking of States' firearms laws and a proxy for per capita firearms ownership, on the one hand, and components of personal freedom, on the other hand, provide a complex mosaic. In estimating the *Giffords score*, of those parameter estimates that are significant, some are positive and some are negative. The same goes in estimating the proxy for per capita firearms ownership. In general, if a significant estimate is positive in estimating *Giffords score*, it is negative in estimating the proxy for per capita firearms ownership, and vice versa. Yet, although some components of personal freedom are significant in estimating both independent variables, others are not. And, for a few components of personal freedom, there is a statistically significant relationship with only one of the independent variables.

In some sense, then, it does not seem supported to say that either Giffords Law Center ratings or the proxy for per capita firearms ownership are positively or negatively related to personal freedom in a State. The individual dimension of freedom being considered matters tremendously. Any effort to provide an overall assessment of the relationship between either and personal freedom overall is controlled by an arbitrary choice as to the weighting of the components of personal freedom.

V. CONCLUSION

This Essay presents empirical evidence addressing the relationship between (x) each of two aspects of the status of firearms in a State, (i) the restrictiveness of a State's firearms regulation (measured by a score assigned by the Giffords Law Group, *Giffords score*) and (ii) a proxy, used by others, for per capita firearms ownership, the fraction of suicides with a gun instrumentality), and (y) various aspects of the State: (i) indices of freedom, as reported by the Cato Institute, and (ii) level of assorted vices, as reported by Wallet Hub. The most salient findings are depicted in the following table:

Table 12: Graphical Depiction of Statistically Significant Relationships

	Relationship with: Per Capita Firearms Proxy	Giffords Score
Freedom Dimension		
overall freedom	↑	↓
regulatory policy freedom	↑	↓
personal freedom after removing:		
duplicative gun rights	↓	↑
duplicative gun rights & SSN not required	↓	↑
cannabis freedom	↑	
tobacco freedom	↑	↓
educational freedom		↓~
alcohol freedom†	↓	↑~
freedom re. *mala prohibita* (a grab-bag)	↓	↑
freedom re incarcerations and arrests	↓	
SSN not required for driver's license	↓~	↑
Vice Dimension		
Vanity	↓	↑
Lazy	↓	↑Ø
Jealousy	↑	
Greed		↑ØØ
excesses & vices	↑	↓

Note: †: The *p*-value for alcohol freedom, in estimating *Giffords score*, is 0.054; and it becomes insignificant if Utah is removed.
~: Those that seem potentially not robust to elimination of relatively influential observations are designated with "~". *See* the Appendix.
Ø: The *p*-value is 0.055 if only two highly-influential observations are removed (higher with all 50 States).
ØØ: With two influential States removed, *low greed* becomes negatively related to *Giffords score* in a statistically-significant way, with a *t*-statistic of –2.255 (which would support the view that greed is positively related to Giffords score). *See supra* note 134 and accompanying text.

Many of the components of freedom and vice are not statistically significant.

The core of this Essay relevant to assessing the Second Amendment's application to firearms regulation is to provide evidence of the

relationship between a proxy for per capita firearms ownership and freedom among the States. Prior literature reveals that, as among countries, per capita firearms ownership is positively related to freedom. For the United States, of course, Federal law provides a very high minimum level of freedom throughout the country. Yet there is a significant variation in firearms ownership among States. If freedom were to cause increased firearms ownership generally, one might encounter that same relationship when comparing States. On the other hand, if widespread firearms possession within a country strongly inhibits suppression of freedom in a country, as among the States (or for other countries, other political subdivisions) when a high level of freedom is assured, one might find a more complex mosaic of the relationship between freedom and firearms ownership. And that is what this Essay finds.

In particular, a proxy for per capita firearms ownership (the fraction of suicides where a firearm is the instrumentality—a proxy that has been used by others[149]) is positively associated with these components of personal freedom: cannabis freedom and tobacco freedom, as computed by Cato Institute. However, it is negatively associated with alcohol freedom, freedom as to *mala prohibita*, a grab-bag of different issues, identified above,[150] freedom as to incarceration and arrests, and not needing a Social Security Number to obtain a driver's license.[151] This is the type of result that is consistent with the perspective that, as among countries, a high level of firearms ownership in a country causes or preserves freedom (inhibits lack of freedom), although there surely are other interpretations one might seek to proffer.

The relationship among States between there being restrictive firearms laws (as measured by scores from Giffords Law Center) and freedom components are generally the opposite of those that the proxy for per capita firearms ownership has with freedom components. Notable differences are that, in estimating Giffords Law Center's scores, cannabis freedom is not significant, and educational freedom is negative and significant (though not significant in estimating the proxy

149. *See supra* note 62 and accompanying text.

150. *See supra* note 118 and accompanying text.

151. However, as noted above, *see supra* note 143, the relationship between *SSN* and the proxy for per capita firearms ownership is not robust to elimination of some relatively influential observations.

for per capita firearms ownership).[152] In addition, a negative relationship between restrictive firearms law and alcohol freedom is not robust to elimination of a single State, Utah.[153]

One of the circumstances related to States' grades assigned by Giffords Law Center to Prevent Gun Violence merits amplification. Whether a State requires a Social Security Number to obtain a driver's license accounts for 67% of the variation in the Giffords Law Center's scores. And, States that want the public to be populated with illegal immigrants wish to curtail substantially the right of members of the public to defend themselves with firearms.

In some sense, then, it does not seem supported to say that either Giffords Law Center ratings or per capita firearms ownership is positively or negatively related to personal freedom as among the States. The individual dimension of freedom being considered matters tremendously. Any effort, at the State level, to provide an overall assessment of the relationship between either and personal freedom is controlled by choice as to the weighting of the components of personal freedom.

Because this work is part of a symposium dedicated to vices, the relationship between both the proxy for per capita firearms ownership and the restrictions on firearms, on the one hand, and various levels of vices within the State on the other hand, are also examined. The following are related to our proxy for per capita firearms ownership—as to those positively related: *low vanity*, *high jealousy* and *high excesses & vices*; as to those negatively related: *high lazy*. The relationship for Giffords score is significant and of the opposite sign as to *low vanity*, *high excesses and vices* (and, if two highly influential States are removed, with a *p*-value of 0.055, *high lazy*). And, if two influential observations are removed, *Giffords score* is negatively related to *low greed* (i.e., *Giffords score* is positively related to greed). These generally support finding higher per capita firearms ownership is negatively associated with vanity and laziness, and positively associated with excesses and vices and jealousy, with the *Giffords score* being the opposite, except as to jealousy (for which it was not significant). Neither the gun-owning crowd nor the crowd that restricts firearms

152. The relationship between *Giffords score* and educational freedom is not robust to removal of six observations that are most influential. *See supra* note 144 and accompanying text.

153. *See supra* note 144 and accompanying text.

rights, then, seems to have a monopoly on vices, but they do have different preferences.

APPENDIX

Table A.1

VARIABLES	(Model 4) Giffords	(Model A1) Giffords w/o outlier	(Model 6) frac suic.	(Model A2) frac suic. w/o outlier
low vanity	-8.743**	-6.295*	0.132***	0.097***
	(-2.202)	(-1.790)	(3.748)	(3.312)
high vanity	8.680*	13.766***	-0.032	-0.048*
	(1.767)	(3.646)	(-0.851)	(-1.850)
low excesses vices	-0.533	-5.333	0.012	0.008
	(-0.109)	(-1.402)	(0.291)	(0.264)
high excesses vices	-14.640***	-16.378***	0.170***	0.152***
	(-3.887)	(-4.776)	(4.792)	(4.753)
low greed	-5.683	-7.930**		
	(-1.422)	(-2.255)		
high greed	2.499	1.309		
	(0.762)	(0.512)		
low lazy	-1.487	-0.304	0.032	0.051
	(-0.282)	(-0.066)	(0.672)	(1.433)
high lazy	7.700*	7.854*	-0.118***	-0.107***
	(1.790)	(1.977)	(-3.251)	(-2.904)
low jealousy			-0.041	-0.040*
			(-0.890)	(-1.786)
high jealousy			0.113***	0.090***
			(3.002)	(3.094)
Constant	76.483***	76.878***	0.459***	0.496***
	(13.242)	(15.877)	(8.007)	(12.737)
Observations	50	48	50	47
R-squared	0.518	0.646	0.553	0.613

Robust *t*-statistics in parentheses. Significance: *** p<0.01, ** p<0.05, * p<0.1. Models A1 and A2 re-estimate models 4 and 6, respectively, with all observations having a Cook's distance of 0.08 removed. That results in the removal of for, in model A1, of the States of Arizona (at 0.15) and Connecticut (at 0.18), and, in model A2, of the States of Connecticut (0.11), Hawaii (0.34) and Massachusetts (0.12).

Table A.2

	(Model 9)	(Model A3)	(Model 11)	(Model A4)	(Model 12)	(Model A5)
	overall freedom		personal freedom w/o gun and SSN		regulatory policy freedom	
VARIABLES	all States	w/o highly influential	all States	w/o highly influential	all States	w/o highly influential
Giffords score	-0.012***	-0.008***	0.002***	0.002***	-0.008***	-0.006***
	(-4.370)	(-3.355)	(3.243)	(4.674)	(-5.905)	(-5.909)
Constant	0.965***	0.693***	-0.054	-0.085**	0.526***	0.395***
	(5.105)	(4.231)	(-1.237)	(-2.433)	(5.822)	(6.320)
Observations	50	47	50	47	50	45
R-squared	0.328	0.206	0.138	0.281	0.484	0.465

Robust *t*-statistics in parentheses. Significance: *** p<0.01, ** p<0.05, * p<0.1. Models A3, A4 and A5 re-estimate models 9, 11 and 12, respectively, with any observation having a Cook's distance greater than 0.08 removed. That removes the following observations: for model A3, States of California (0.10), Hawaii (0.18) and New York (0.22); for model A4, the States of Arizona (0.13), Maine (0.12) and Nevada (0.11); and for model A5, the States of California (0.18), Maine (0.19), Maryland (0.09), New Jersey (0.20) and New York (0.10).

Table A.3

	(Model 19)	(Model A6)	(Model 21)	(Model A7)	(Model 22)	(Model A8)
	overall freedom		personal freedom w/o gun and SSN		regulatory policy freedom	
VARIABLES	all States	w/o highly influential	all States	w/o highly influential	all States	w/o highly influential
frac suicide gun	1.208***	0.792**	-0.195***	-0.242***	0.765***	0.555***
	(3.339)	(2.669)	(-3.537)	(-4.645)	(5.422)	(6.376)
Constant	-0.583**	-0.338*	0.180***	0.203***	-0.459***	-0.328***
	(-2.665)	(-1.847)	(6.200)	(7.238)	(-5.273)	(-5.593)
Observations	50	45	50	48	50	46
R-squared	0.270	0.131	0.144	0.227	0.391	0.222

Robust *t*-statistics in parentheses. Significance: *** p<0.01, ** p<0.05, * p<0.1. Models A8, A7 and A8 re-estimate models 19, 21 and 22, respectively, with any observation having a Cook's distance greater than 0.08 removed. That removes the following observations: from model A6, California (0.10), Hawaii (0.26), Massachusetts (0.28), New Hampshire (0.09) and New York (0.30); from model A7: Hawaii (0.15) and Nevada (0.12); and from model A8: California (0.16), Massachusetts (0.16), New Jersey (0.21) and New York (0.09).

Table A.4

VARIABLES	(Model 31) Giffords score all States	(Model A9) Giffords score w/o highly influential	(Model 33) Giffords score all States	(Model A10) Giffords score w/o highly influential	(Model A11) Giffords score w/o .2 influential	(Model A12) Giffords score w/o .4 influential
alcohol freedom	221.717 (1.572)	194.433 (1.602)	196.545* (1.981)	137.873 (1.485)	70.358 (0.657)	36.736 (0.308)
cannabis freedom	-78.157 (-1.342)	-78.340 (-1.697)				
gaming freedom	30.524 (0.586)	40.669 (0.934)				
mala prohibita	305.663** (2.670)	280.370** (2.646)	199.267** (2.068)	203.871* (1.746)	211.748** (2.216)	216.234** (2.179)
educational freedom	-80.850* (-1.919)	-69.887* (-1.749)	-84.130** (-2.147)	-49.175 (-1.025)	-80.308** (-2.093)	-69.399* (-1.760)
tobacco freedom	-223.407** (-2.433)	-181.448** (-2.332)	-205.607** (-2.460)	-191.171*** (-2.741)	-189.867*** (-2.918)	-185.212** (-2.366)
asset forfeiture	-31.726 (-0.531)	-26.213 (-0.474)				
incarceration and arrests	31.171 (1.007)	32.793 (1.206)				
marriage freedom	339.554 (0.627)	108.961 (0.291)				
campaign finance freedom	1611.106 (0.691)	476.960 (0.294)				
alt travel freedom	-32.657 (-0.084)	28.381 (0.098)				
SSN	17.057*** (3.417)	20.478*** (4.604)	16.971*** (4.425)	19.619*** (5.282)	18.462*** (5.403)	18.864*** (5.047)
Constant	52.893*** (5.093)	57.371*** (8.039)	59.771*** (30.970)	58.960*** (38.403)	60.629*** (34.019)	60.759*** (32.045)
Observations	50	43	50	44	47	49
R-squared	0.823	0.912	0.803	0.893	0.852	0.819

Robust *t*-statistics in parentheses. Significance: *** p<0.01, ** p<0.05, * p<0.1. Models A9 and A10 re-estimate models 31 and 33, respectively, with any observation having a Cook's distance greater than 0.08 removed. That removes the following observations: from model A9, Alaska (0.20), Michigan (0.09), Nevada (0.71), North Carolina (0.11), Pennsylvania (0.23), Utah (0.60), Virginia (.09); and from model A10, Alaska (0.23), Arizona (0.14), Michigan (0.08), North Carolina (.08), Pennsylvania (0.24) and Utah (0.87). Models A11 and A12 re-estimate model 33 using higher elimination thresholds for Cook's distance: 0.2 and 0.4, respectively.

The following observations are removed: from model A11, Alaska (0.20), Pennsylvania (0.23) and Utah (0.60); and from model A12, Utah (0.60).

Table A.5

	(Model 36)	(Model A13)	(Model 38)	(Model A14)
	frac. suicide gun			
VARIABLES	all States	w/o highly influential	all States	w/o highly influential
alcohol freedom	-3.072***	-4.358***	-2.714***	-2.976***
	(-3.215)	(-3.304)	(-3.341)	(-3.602)
cannabis freedom	1.256**	0.985*	1.406***	0.816*
	(2.569)	(1.967)	(2.844)	(1.990)
alt travel freedom	0.162	-0.136		
	(0.037)	(-0.029)		
gaming freedom	0.446	-0.365		
	(1.258)	(-0.509)		
mala prohibita	-1.934	-1.858	-2.409**	-1.692*
	(-1.639)	(-1.484)	(-2.488)	(-1.727)
educational freedom	-0.377	-0.066		
	(-1.005)	(-0.168)		
tobacco freedom	2.041**	2.696**	2.092**	4.174***
	(2.212)	(2.398)	(2.362)	(7.509)
asset forfeiture	0.241	0.354		
	(0.275)	(0.397)		
incarceration and arrests	-1.289***	-1.288***	-1.325***	-1.012***
	(-3.524)	(-2.924)	(-4.017)	(-3.878)
marriage freedom	4.179	1.634		
	(0.768)	(0.321)		
campaign finance freedom	-6.889	3.071		
	(-0.391)	(0.164)		
SSN	-0.113**	-0.073	-0.093**	-0.033
	(-2.477)	(-1.546)	(-2.582)	(-1.190)
Constant	0.612***	0.675***	0.690***	0.743***
	(5.523)	(6.217)	(31.677)	(46.196)
Observations	50	45	50	44
R-squared	0.730	0.790	0.720	0.855

Robust *t*-statistics in parentheses. Significance: *** p<0.01, ** p<0.05, * p<0.1. Models A13 and A14 re-estimate models 36 and 38, respectively, with any observation having a Cook's distance greater than 0.08 removed. That removes the following observations: from model A13: Alaska (.12), Illinois (0.08), Nevada (0.17), New Mexico (0.10), Utah (0.10); and from model A14: Alaska (0.17), Colorado (0.09), Hawaii (0.12), Illinois (0.11), South Dakota (0.10) and Utah (0.18).