Democracy and Security Dialogue
Working Paper Series

Democracy and Violent Crime

By Ted Piccone[1]

1 Introduction

In preparation for the Community of Democracies' Democracy and Security Dialogue, Brookings Institution researchers analyzed the relationship between democracy and violent crime from 2000-14. Without controlling for other variables, we found that countries with low homicide rates tend to be strong autocracies and strong democracies, whereas democratically weaker regimes are more likely to have higher levels of homicide.

This paper is organized as follows. First, we outline the extant literature on democracy and crime before detailing how we conceptualize and measure these two variables. Second, we analyze the relationship between these two variables. We conclude with a discussion of our results.

2 Variables of Interest

This paper conducts a bivariate analysis of the relationship between democracy and crime, specifically homicide rates.[2] The following analysis compares levels of democracy and homicide rates in 83 countries during the years 2000 through 2014.[3] These 83 countries were chosen because they were the only ones with sufficient reliable data available, as discussed below. Overall, Europe, North America, Latin America, and parts of Asia are well represented in our sample and the rest of the world is underrepresented.

2.1 Literature Review

A 2011 review of 54 studies found that the most robustly supported predictors of murder were levels of income inequality, location in Latin America, divorce rates, location in Asia, and "the Decommodification Index," which is the measure of social welfare expenditure and worker protection. The first three of these predictors were positively correlated with homicide rates, whereas the last two were negatively correlated with homicide rates. Conversely, population density and size, unemployment levels, economic development, and democracy indices were

[1] This paper was prepared with major research contributions from Julian Duggan, and research support by Christopher Meserole and Matthew Koo.

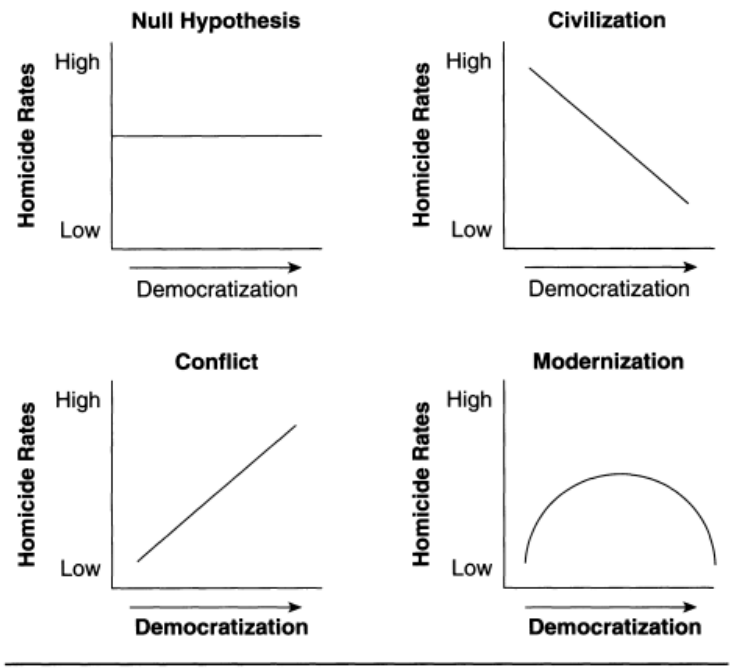
[2] Most academic research has focused on homicide rates because they are by far the most reliable and widely available crime statistic, including for countries outside Europe and North America.
[3] See *Supplement 5.1* for complete list of included countries.

among the weakest predictors of homicide rates.[4] In light of this, we must be cautious in our interpretation of our results so far. Established democracies do in fact experience lower homicide rates, it seems, but it is unclear that democratization per se produces this effect.

In the figure below, Gary LaFree and Andromachi Tseloni succinctly summarize the four main hypotheses concerning the relationship between democracy levels and homicide rates[5]:

- H_1: "Null"—There is no relationship between increasing levels of democracy and homicide rates.
- H_2: "Civilization"—Democracy is negatively correlated with homicide rates. Higher levels of democracy are associated with lower levels of homicide.
- H_3: "Conflict"—Democracy is positively correlated with homicide rates. Higher levels of democracy are associated with higher levels of homicide.
- H_4: "Modernization"—A curvilinear relationship between democracy and homicide rates, where crime rates are highest in transitional democracies.

FIGURE 1
EXPECTED RELATIONSHIP BETWEEN DEMOCRACY AND VIOLENT CRIME FROM FOUR PERSPECTIVES



In their own research, LaFree and Tseloni find evidence for the Modernization Hypothesis, which maintains that homicide rates are lower in stable regimes (be they democratic or autocratic), and higher in "transitional democracies," defined as a diverse mix of political systems in between fully

[4]Amy Nivette, "Cross-National Predictors of Crime: A Meta-Analysis." *Homicide Studies* 15, no. 2 (2011): 103-31.
[5] Gary Lafree and Andromachi Tseloni, "Democracy and Crime: A Multilevel Analysis of Homicide Trends in Forty-Four Countries, 1950-2000," *The Annals of the American Academy of Political and Social Science* 605 (2006): 26-49.

competitive and factional ones (polities with parochial or ethnic-based political factions). Yet, other articles by other academics have come out in favor of the other positions.[6]

Though not explored in this working paper, proponents of these different theses offer a set of causal mechanisms to explain the relationship (or lack thereof) between democracy and homicide rates. For example, modernization theorists point to the political and economic instability inherent to "transitional" societies and governments as the cause for the increase in homicides. Other popular explanations for why murder rates are generally lower in full-fledged democracies include the following:

1. Democracies enjoy higher levels of legitimacy in the eyes of their citizens, thus the rule of law is more highly respected.[7]
2. Democracies punish serious crimes more severely and petty crimes less severely, meaning that they deter murder more effectively than non-democracies.[8]
3. The cultural values espoused by the citizens of democracies are more peaceful and egalitarian than those of non-democracies, resulting in lower murder rates.[9]

2.2 Homicide Rates

We use the World Bank's data on homicide rates for our analysis.[10] This data, the World Bank acknowledges, are subject to several biases, including underrepresentation of the developing world, asymmetries in reporting countries' definitions of homicide, and those imposed by difficulties in collecting and compiling reliable data in nations with limited statistical capacity. Therefore, democracies outnumber non-democracies in our own analysis.[11] It bears mention that Latin America, which has 14 out of the 15 countries with the highest homicide rates in our

[6] See e.g., Theresa P. R. Caldeira, and James Holston, "Democracy and Violence in Brazil," *Comparative Studies in Society and History* 41, no 4 (1999): 691–729; Manuel Eisner, "Modernization, Self-Control, and Lethal Violence: The Long-term Dynamics of European Homicide Rates in Theoretical Perspective," *The British Journal of Criminology* 41, no 4: 618-638; Nivette, "Cross-National Predictors of Crime," 103-31.

[7] Amy Nivette, "Legitimacy and Crime: Theorizing the Role of the State in Cross-National Criminological Theory," *Theoretical Criminology* 18, no 1 (2014): 93-111.

[8] Ming-Jen Lin, "Does Democracy Increase Crime? The Evidence from International Data," *Journal of Comparative Economics* 35, no 3 (2007): 467-83.

[9] Janet Stamatel, "Democratic Cultural Values as Predictors of Cross-National Homicide Variation in Europe," *Homicide Studies* 20, no 3 (2016): 239-256.

[10] The World Bank gathers its data solely from the United Nations Office on Drugs and Crime (UNODC), which in turn collects its information from the World Health Organization (WHO), the Pan American Health Organization (PAHO), and the United Nations Survey of Crime Trends and Operations of Criminal Justice Systems, among other sources. Academic researchers generally regard the WHO data as the most trustworthy, but as Marshall and Block argue, "In view of the importance of retaining as many countries as possible in a multinational analysis, limiting cross-national analysis of homicide to countries with data available from a single data source appears unwarranted. Even if one data source, such as WHO data, were considered more valid or reliable than others, it would be a potential waste of scarce data to completely dismiss other data, such as Interpol or UN homicide statistics, as useless."

[11] Depending upon the measure of democracy used, there are 2 to 3.5 times as many democracies in our sample as non-democracies. See *Supplement 5.2* for exact figures.

sample, may play a role in dragging up the average homicide rates we find among weak democracies and non-democracies.[12]

Throughout this report, national homicide rates are given in terms relative to 100,000 citizens per year. For example, a statement "Spain has an average homicide rate of one" means that in an average year, Spain has one person murdered for every 100,000 in its population. Our analysis included only those countries that had homicide data available for 11 or more of the 15 years between and including 2000 and 2014, a list of which can be found in *Supplement 5.1*.

2.3 Democracy

Our data on democracy are drawn from the Varieties of Democracy (V-Dem) Project, Freedom House, and Polity. Throughout this report, we will use three types of democracy variables. The first type is the raw democracy score assigned to each country in each year by the three democracy databases. Each country has annual V-Dem scores, annual Freedom House scores, and annual Polity Scores for all (or almost all) years between and including 2000 and 2014.

The second type of democracy variable is what we call a "democracy level." We create each democracy level in the following way: for all of the years between and including 2000 and 2014, we average each country's V-Dem score. Next, we group countries with similar average scores together into the 10 V-Dem levels, which run from 0 to 9. We repeat this same process using each country's annual Freedom House scores and annual Polity scores. Thus, each country has a V-Dem level, a Freedom House level, and a Polity level. We should note that, as demonstrated in *Supplement 5.2*, some democracy levels include significantly more countries than others do, and this is a direct result of the aforementioned homicide data limitations.

The third type of democracy variable is what we call "democracy quartiles." We create each democracy quartile in the following way: for all the years between 2000 and 2014, we average a country's V-Dem score. Then, we split the countries into two groups—democracies and autocracies—by designating all countries with an average V-Dem score of less than .4 as autocracies and all countries with an average V-Dem score of .4 or greater as democracies. Within the autocracy group, we find the country with the median average V-Dem score. Then, we call all countries with average scores less than the median "Strong Autocracies" and all countries with average scores greater than or equal to the median "Weak Autocracies." Similarly, in the group of democratic countries, we find the country with the median average score. Then, we call all countries with average scores less than the median "Weak Democracies" and all countries with average scores greater than or equal to the median "Strong Democracies." Each country falls into exactly one of these four categories. We repeat this process using each country's annual Freedom House scores, where all countries with an average score below 4 are autocracies and the rest are democracies. Finally, we repeat this process one more time using each country's annual Polity scores, where all countries with an average score below 6 are autocracies and the rest are democracies. Recall that we chose the cutoff points for V-Dem democracies (i.e., .4 and higher) and Freedom House democracies (i.e., 4 and higher) based on our own best judgement, whereas the cutoff for Polity democracies (i.e., 6 and higher) is a

[12] Again depending upon the measure of democracy used, Latin America has either 3 or 4 strong democracies, and between 8 and 10 weak democracies (in our sample).

convention in academic literature. As with the democracy levels, *Supplement 5.2* demonstrates that the democracy quartiles are of unequal sizes, which is a result of our data limitations.

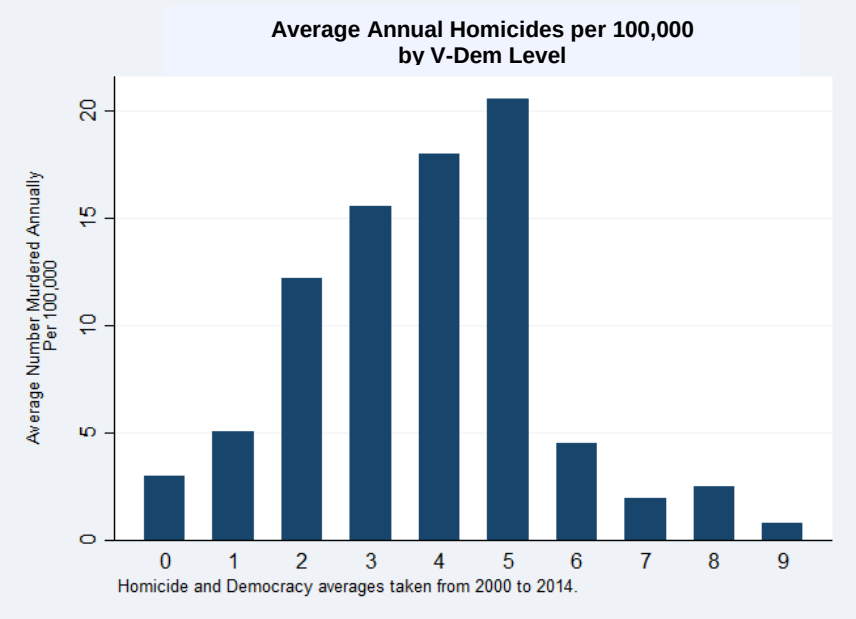
3 Empirical Strategy

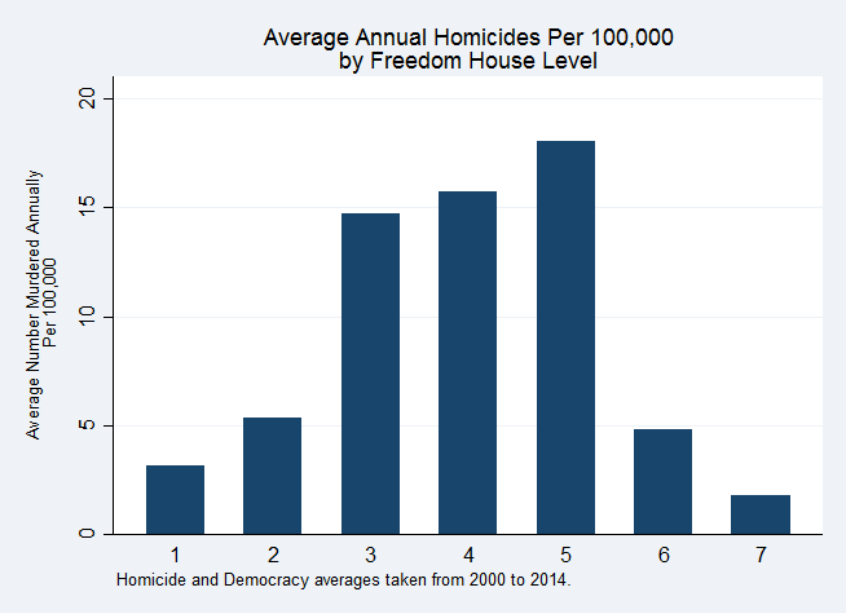
This section of our paper has three components: mean analysis, standard deviation analysis, and regression analysis.

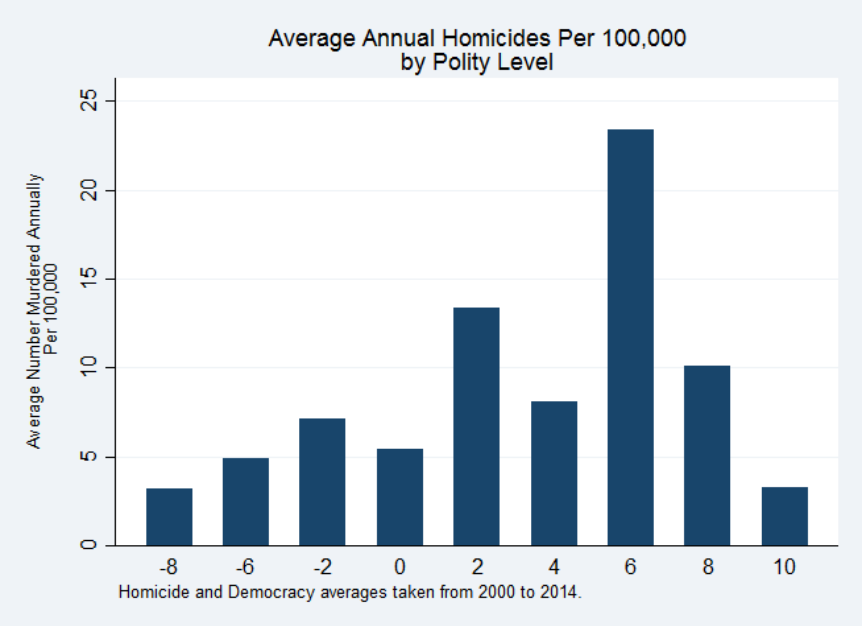
3.1 Mean Analysis

Through mean analysis we seek to compare the homicide rates of countries with different levels of democratic development. We repeat this analysis using the V-Dem, Freedom House, and Polity scores. To begin with the mean analysis, we first group countries by their democracy levels, and then within each democracy level, we average the mean homicide rates to find the average for that democracy level. In general, the bar graphs below support the Modernization Hypothesis, thereby suggesting that homicide rates are higher at intermediate levels of democracy.

Democracy Level Graphs





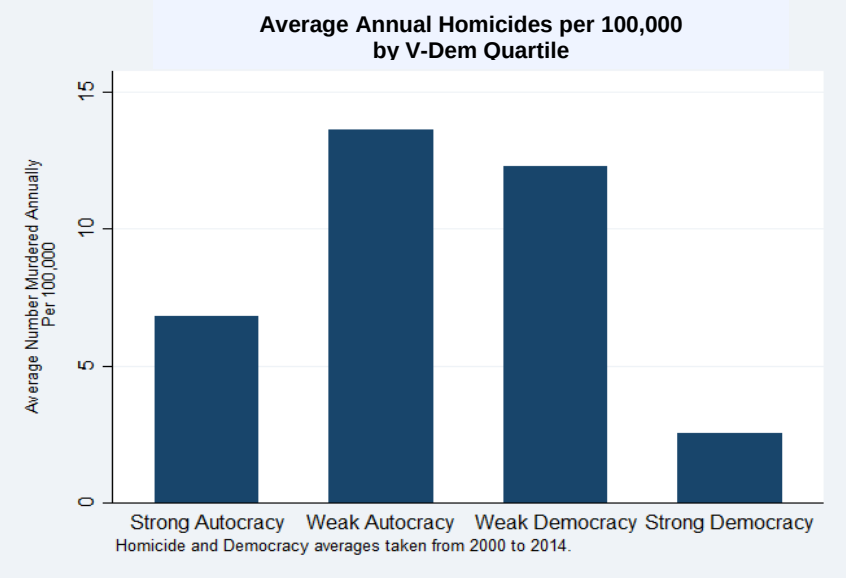


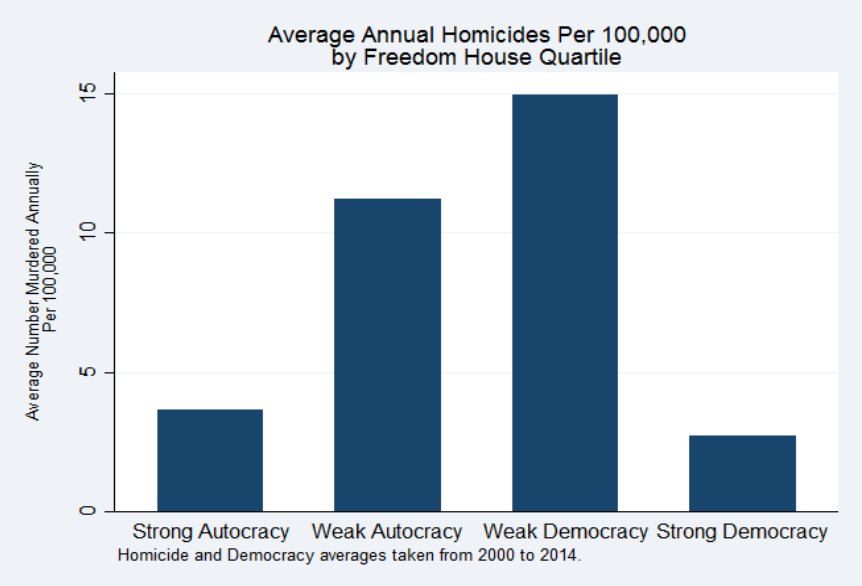
The aforementioned trend is also apparent in the "democracy quartiles" graphs below. In the second iteration of this mean analysis, we group countries by their democracy quartiles, rather than their democracy levels. Interestingly, two out of the three quartiles graphs show that weak democracies have meaningfully higher average homicide rates than weak autocracies do. Further analysis revealed that this fact remains true even when all Latin American countries are removed from the calculations, demonstrating that this trend is not just an accident of where the high-homicide-rate Latin American countries tend to fall. On the other hand, this finding is heavily dependent on where we decide to place the line between "democracies" and "autocracies."[13]

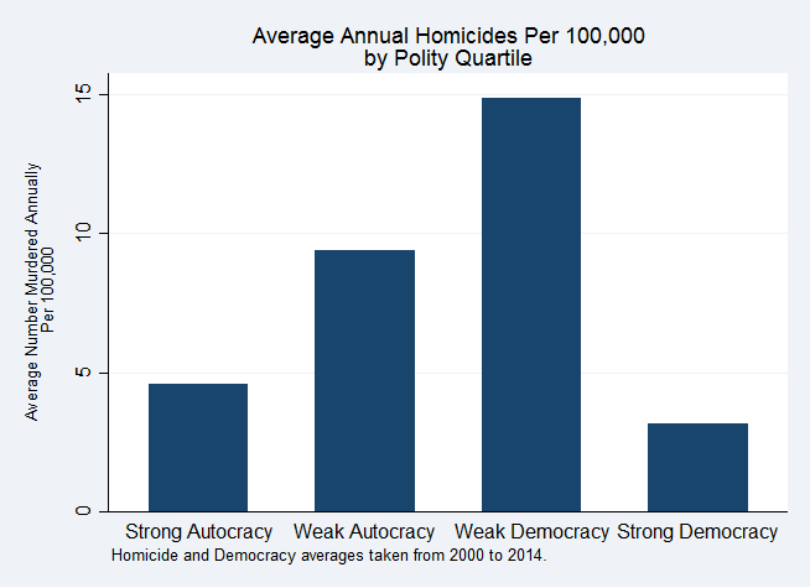
[13] In the V-Dem and Freedom House models, we cautiously decided to call every country with average scores greater than or equal to .4 (for V-Dem) and 4 (for Freedom House) "democracies." See *Supplement 5.3*.

Finally, it is worth noting that the highest level democracies uniformly have the lowest average rates of homicide.

Democracy Quartile Graphs





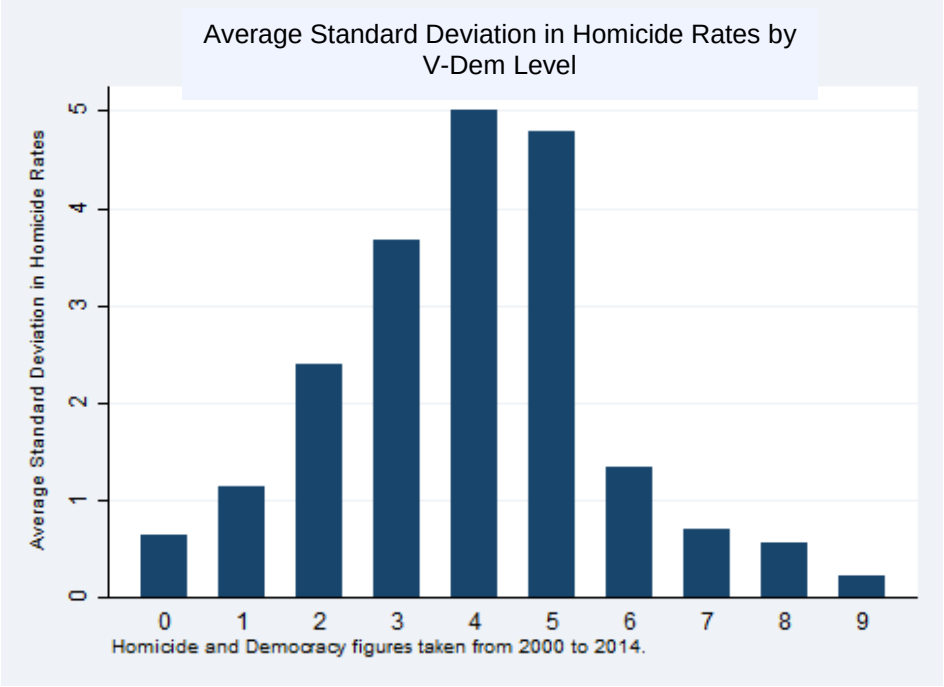


3.2 Standard Deviation Analysis

For standard deviation analysis, we first identify the standard deviation of each country's annual homicide rate between 2000 and 2014. Taking the standard deviation of each country's homicide rates gives us a sense of how frequently that rate fluctuates up and down from year to year (i.e. how "volatile" the country's homicide rate is). Having found the standard deviation for each country's homicide rate, we then group countries into democracy levels, and take the average standard deviation for each level, creating a bar graph to display the results. Finally, utilizing data from V-Dem, Freedom House, and Polity, we compare the volatility of homicide rates in countries at different levels of democracy.

The following graphs suggest that hybrid regimes have a higher volatility in homicide rates than strong democracies and autocracies. This trend remains consistent even when Latin American countries, which have 12 out of the 13 most volatile homicide rates,[14] are excluded from our analysis.[15]

[14] South Africa joins this group with the eighth most volatile homicide rate.
[15] See *Supplement 5.4* for an ordering of countries by homicide rate volatility.


Average Standard Deviation in Homicide Rates by V-Dem Level
Average Standard Deviation in Homicide Rates
0
1
2
3
4
5
0
1
2
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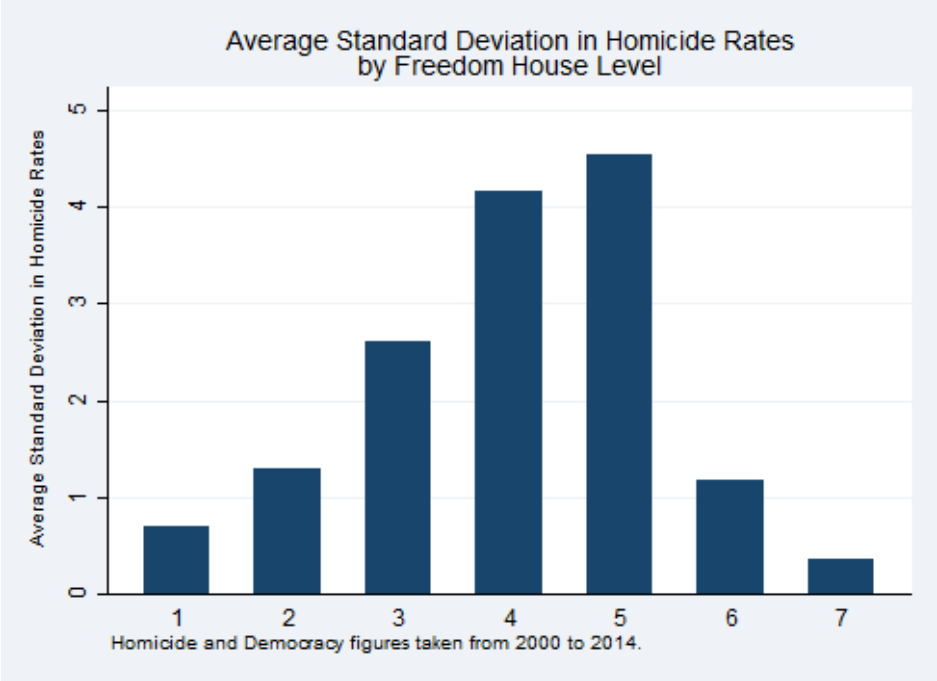
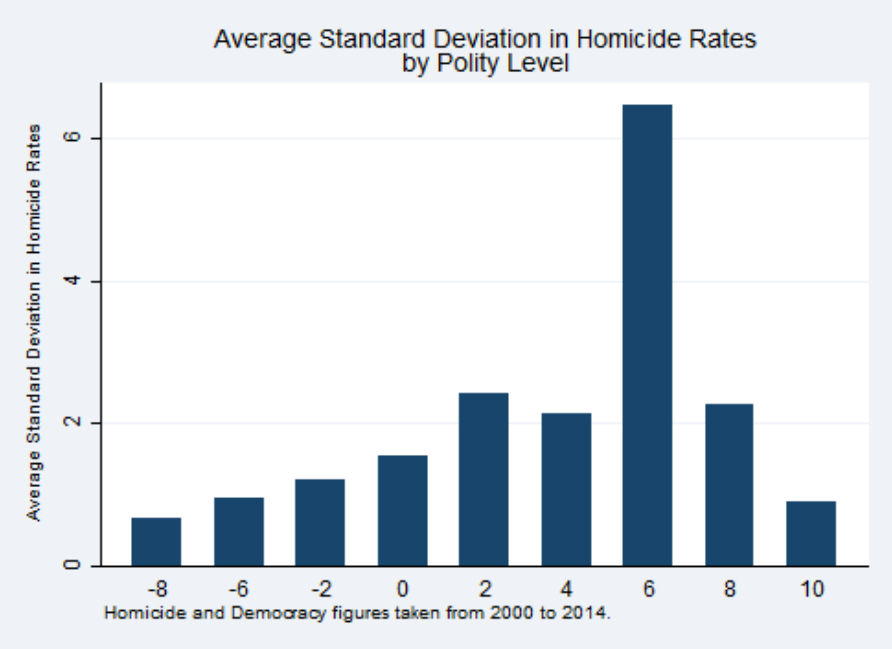
4
5
6
7
8
9
Homicide and Democracy figures taken from 2000 to 2014.


Average Standard Deviation in Homicide Rates by Freedom House Level
Average Standard Deviation in Homicide Rates
0
1
2
3
4
5
1
2
3
4
5
6
7
Homicide and Democracy figures taken from 2000 to 2014.



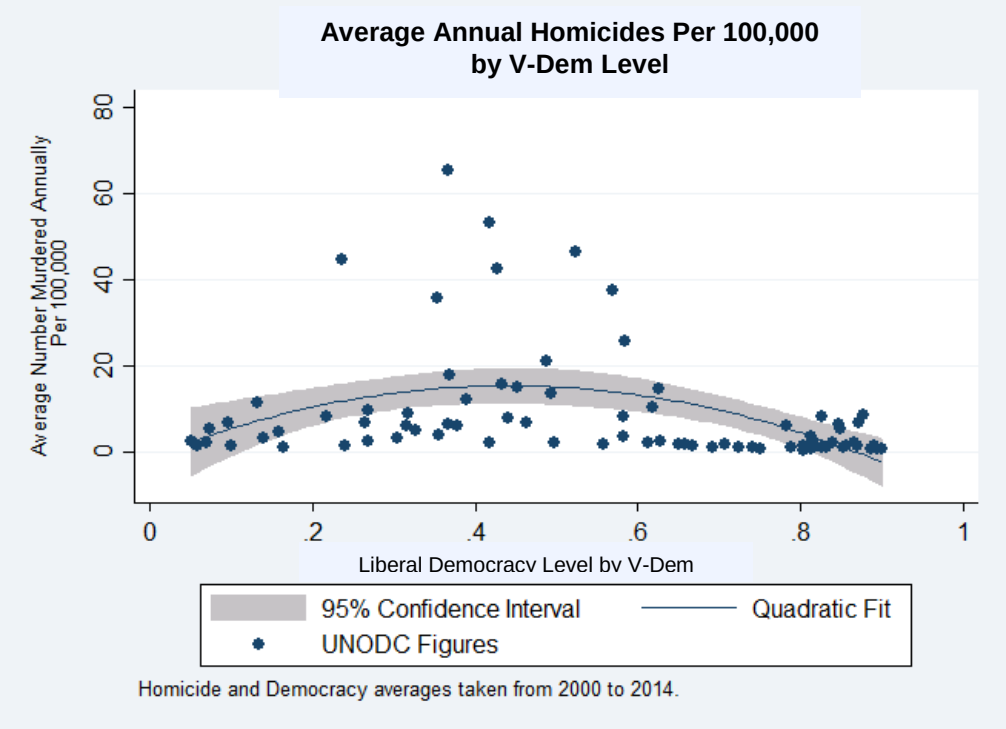
3.3 Regression Analysis

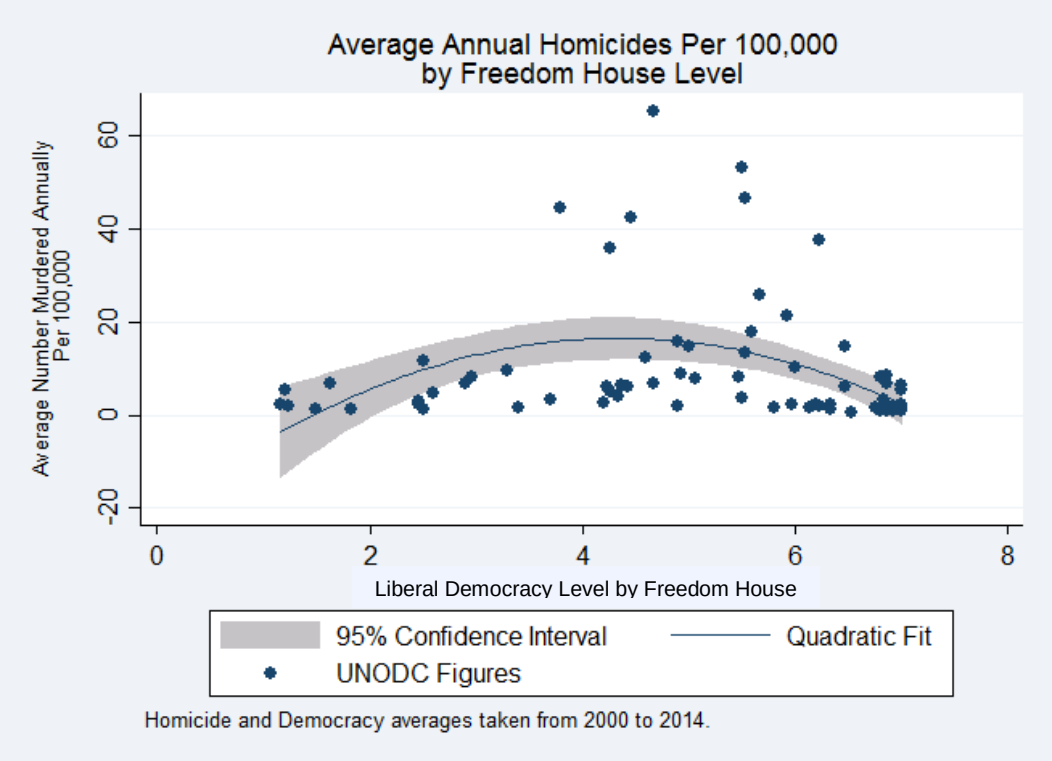
Regression analysis involves us plotting all 86 countries on one chart. The y-axis measures their average annual homicide rates and the x-axis measures their average level of democracy. We then run a bivariate quadratic regression to probe whether the Modernization Hypothesis holds when studying the relationship between average homicide rates and average democracy levels. In addition, we test the Null, Conflict, and Civilization Hypotheses. Our analysis uses V-Dem, Freedom House, and Polity scores.

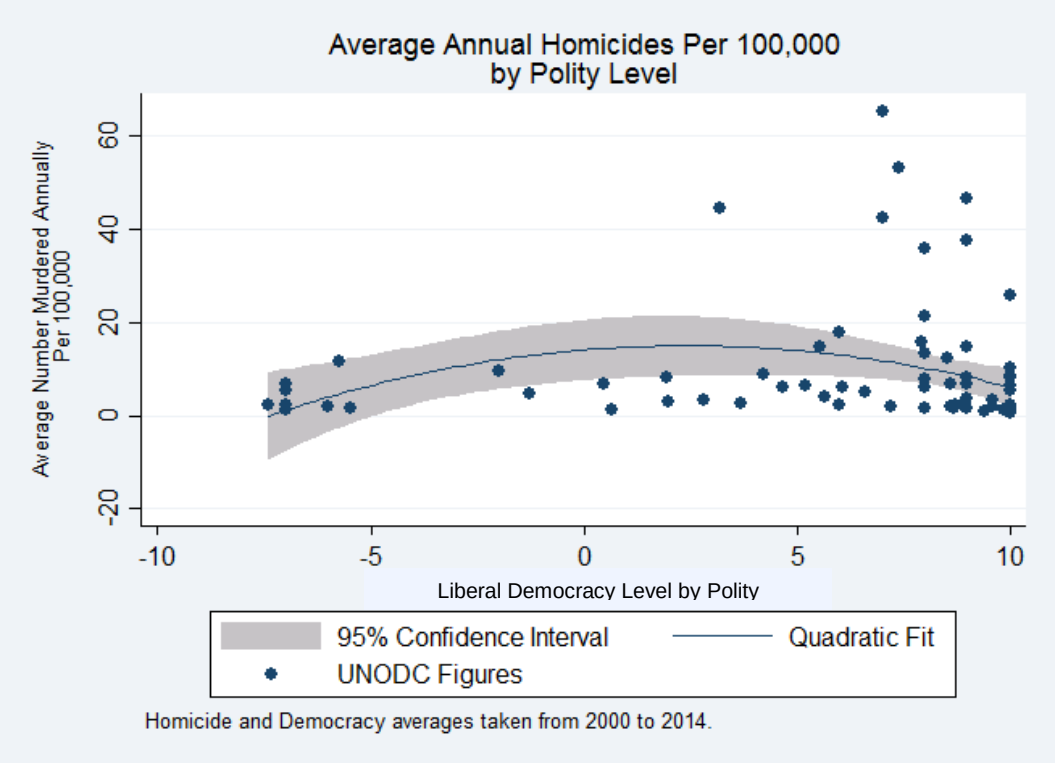
In general, the following scatter plots and quadratic regressions are evidence for the Modernization Hypothesis described above. Homicide rates are uniformly lower in countries at both extremes of the democracy range. Though many hybrid regimes have low average homicide rates, a sizable proportion of them still have average homicide rates that are greater than countries at the extremes. The quadratic regressions and their confidence intervals testify to this trend, since they look like an inverted "U." This trend is fairly consistent across all three methods of measuring democracy.[16]

[16] Note that in the Polity graph, the conventional cutoff for a "democracy" is at a 6, so the lopsidedness of the scatter plot to the right is a product of this fact. This shift right may also be a result of our sample, which, as we said above, favored moderately to highly developed democracies.

Quadratic Regressions

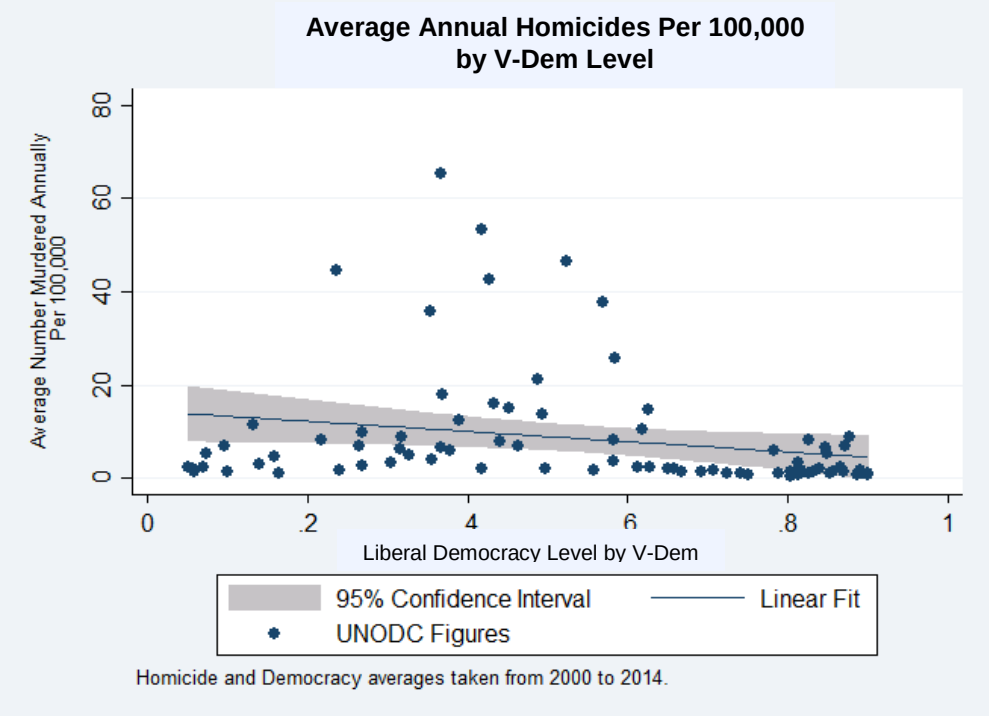


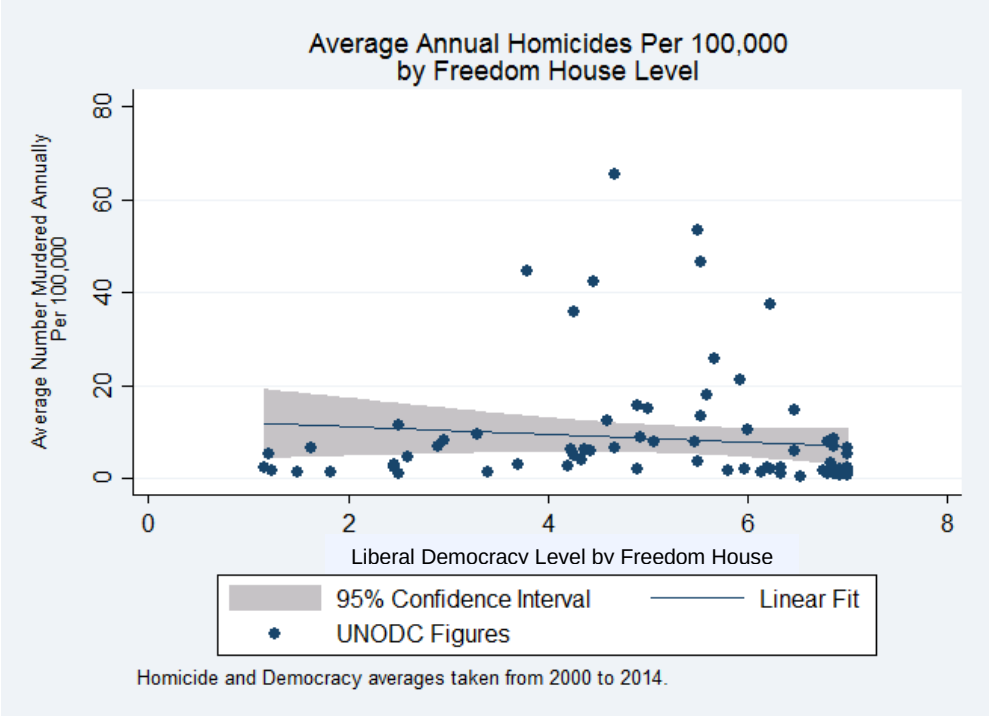


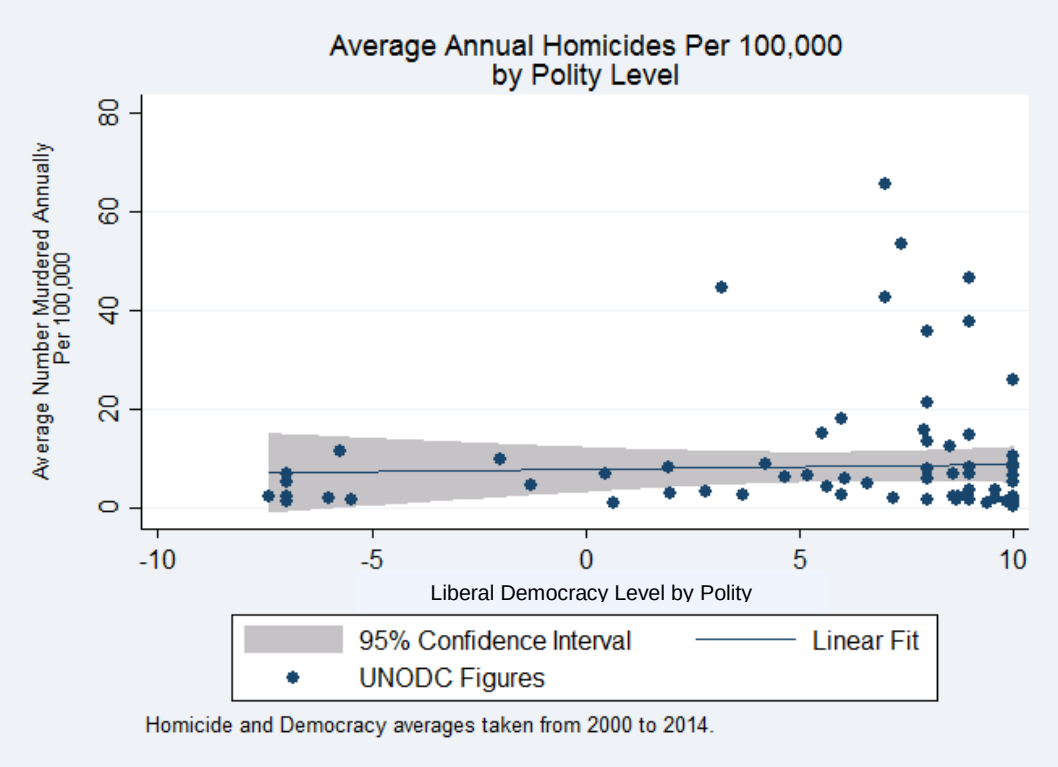


When we run the linear regressions below, however, the results are more mixed. Models running on data from V-Dem and Freedom House support the Civilization Hypothesis, while Polity appears to support the Null Hypothesis.

Linear Regressions







4 Conclusion

Broadly speaking, our results suggest that homicide rates are lower in strong autocracies and full-fledged democracies, and higher in weak autocracies and weak democracies. Additionally, our analysis finds that homicide rates may fluctuate more from year to year in hybrid regimes. We also find that weak democracies and weak autocracies have roughly equal levels of violence. To strengthen our confidence in these tentative insights further, more research needs to be done to control for confounding variables and preclude endogeneity.

5 Supplement

5.1 Countries, V-Dem Levels, and Average Homicide Rates

The following table orders countries by their V-Dem level and then by their average homicide rate.

Country	V-Dem Level	Average Homicide Rate	Country	V-Dem Level	Average Homicide Rate
Switzerland	9	0.83	Peru	5	8.05
Costa Rica	8	8.67	India	5	3.63
Lithuania	8	8.05	Serbia	5	1.75
Estonia	8	6.87	El Salvador	4	53.32
Uruguay	8	6.52	Colombia	4	42.45
United States	8	5.31	Dominican Republic	4	21.21
Chile	8	3.42	Paraguay	4	15.83
Finland	8	2.26	Ecuador	4	14.91
Belgium	8	2.10	Mexico	4	13.55
Canada	8	1.63	Philippines	4	7.97
France	8	1.50	Moldova	4	6.75
United Kingdom	8	1.39	Romania	4	2.13
Poland	8	1.39	Macedonia	4	2.09
Australia	8	1.37	Honduras	3	65.39
Portugal	8	1.25	Guatemala	3	35.84
New Zealand	8	1.17	Guyana	3	17.96
Ireland	8	1.11	Nicaragua	3	12.31
Czech Republic	8	1.05	Papua New Guinea	3	8.95
Spain	8	1.05	Thailand	3	6.39
Netherlands	8	1.00	Sri Lanka	3	6.19
Denmark	8	0.88	Georgia	3	6.00
Norway	8	0.86	Kenya	3	4.99
Sweden	8	0.79	Malawi	3	4.08
Austria	8	0.73	Nepal	3	3.18
Japan	8	0.43	Venezuela	2	44.49
Latvia	7	5.97	Uganda	2	9.68
Hungary	7	1.73	Kyrgyzstan	2	8.18
Greece	7	1.09	Pakistan	2	6.94
Italy	7	1.03	Bangladesh	2	2.67
Slovenia	7	0.99	Morocco	2	1.49
Germany	7	0.82	Kazakhstan	1	11.49
Panama	6	14.64	Yemen	1	4.60
Mongolia	6	10.33	Cambodia	1	3.05
Israel	6	2.45	Algeria	1	1.08
Bulgaria	6	2.23	Belarus	0	6.73
Ghana	6	1.92	Cuba	0	5.26
Slovakia	6	1.91	Syria	0	2.36
Croatia	6	1.46	Azerbaijan	0	2.28
Cyprus	6	1.20	Burma_Myanmar	0	1.83
Jamaica	5	46.59	China	0	1.35

South Africa	5	37.59	Vietnam	0	1.336364
Trinidad and Tobago	5	25.83			

5.2 Democracy Level and Quartile Sample Sizes

The following tables describe how many countries are in each democracy level and each quartile across the three democracy databases. As is immediately evident, many of the democracy levels and quartiles have very different numbers of countries included in them, with a heavy bias toward higher democracy levels. Some of the Polity levels have no countries in them altogether, which explains the absence of those levels in the Polity graphs throughout the report.

These asymmetries are a source of potential bias because they leave open the possibility that a selection effect is distorting our results. For example, perhaps the least developed, least democratic countries, which are notably absent from the U.N. Office on Drugs and Crime (UNODC) data that we rely upon, happen to have lower homicide rates than the handful of Latin American autocracies (e.g., Honduras, Guatemala, Nicaragua) included in our sample. Given the modest size of our autocracy groups, the small number of Latin American non-democracies in our sample could skew the homicide statistics upward for all autocracies.[17] Admittedly, this could bias our results in favor of democracies.

Democracy Level Sample Sizes

V-Dem Level	No. of Countries
Level 0	7
Level 1	4
Level 2	6
Level 3	11
Level 4	10
Level 5	6
Level 6	8
Level 7	6
Level 8	24
Level 9	1

Freedom House Level	No. of Countries
Level 1	6
Level 2	7
Level 3	4
Level 4	14
Level 5	12
Level 6	25
Level 7	15

Polity Level	No. of Countries	Polity Level	No. of Countries
Level -10	0	Level 2	4
Level -8	6	Level 4	5
Level -6	3	Level 6	9
Level -4	0	Level 8	24
Level -2	2	Level 10	27
Level 0	3		

[17] However, at the key points in our analysis, we excluded Latin American countries and repeated the calculations in order to account for this potential bias. This process always produced the same general result, suggesting that this bias does not invalidate our results.

Democracy Quartile Sample Sizes

V-Dem Quartile	No. of Countries
Strong Autocracy	14
Weak Autocracy	14
Weak Democracy	27
Strong Democracy	28

Freedom House Democracy Quartile	No. of Countries
Strong Autocracy	10
Weak Autocracy	7
Weak Democracy	33
Strong Democracy	33

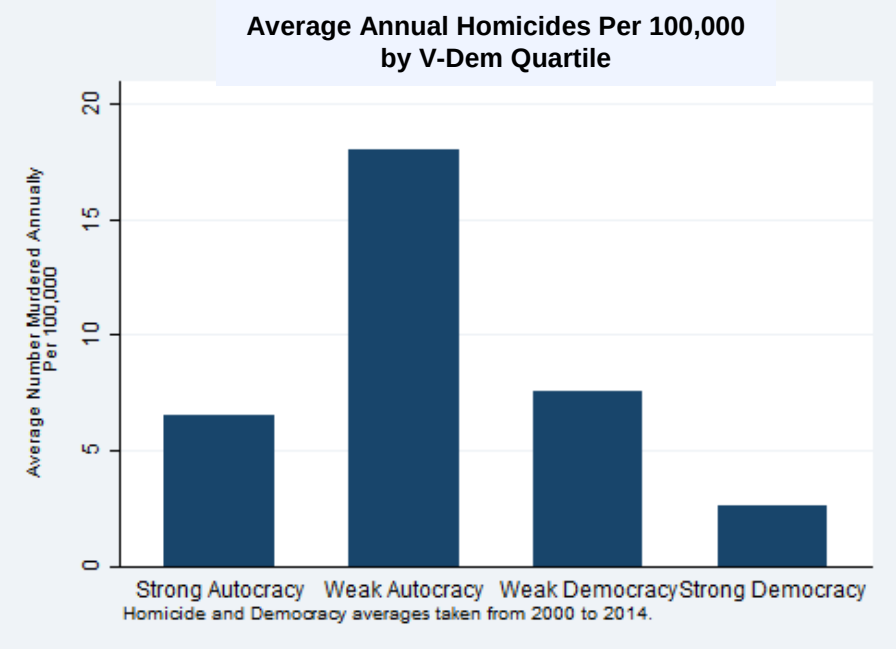
Polity Democracy Quartile	No. of Countries
Strong Autocracy	12
Weak Autocracy	11
Weak Democracy	30
Strong Democracy	30

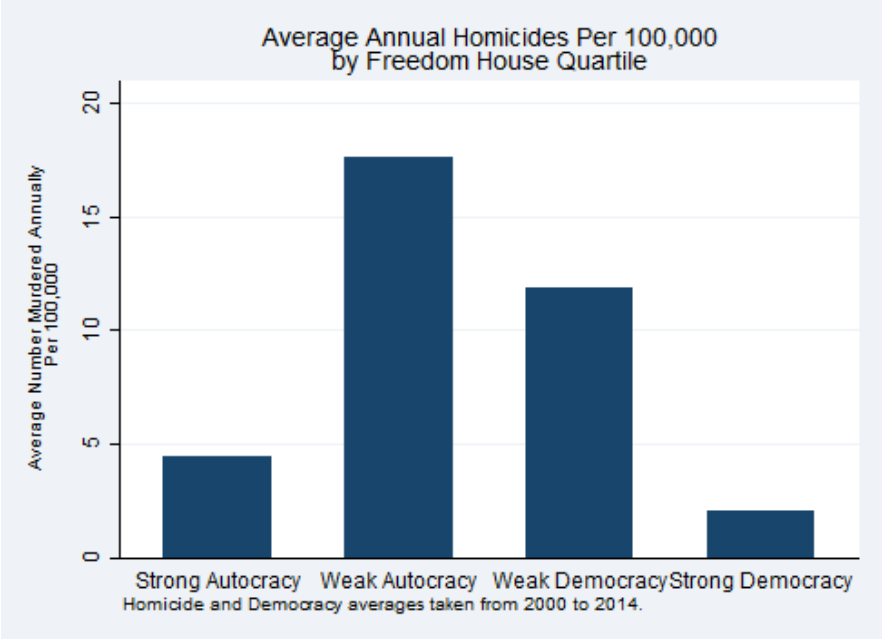
5.3 Weak Democracy vs. Weak Autocracy

The following bar graphs demonstrate that whether "weak democracies" have higher average homicide rates than "weak autocracies" depends heavily on how one distinguishes between the two groups. The first bar graph below shows what happens to this trend if you change the cutoff point in the V-Dem model from an average score of .4 to an average score of .5. The second bar graph below shows what happens in the Freedom House model if you change the cutoff from an average score of 4 to an average score of 5.[18] Since the cutoff point between democracies and autocracies in the Polity model is fixed at 6 by the academic literature, we never had any qualms making that our cutoff as well.

After these adjustments, both the V-Dem graph and the Freedom House graph show weak autocracies as substantially more violent than before. Conversely, both graphs also show weak democracies as substantially less violent than before. This tells us that many of the most violent countries—almost certainly Latin American—fall between an average score of .4 and a .5 in the V-Dem Index and between an average score of 4 and a 5 in the Freedom House index.

[18] The average scores of .5 and 5 are where we initially drew the lines before deciding that they were too exclusive.


Average Annual Homicides Per 100,000
by V-Dem Quartile
Average Number Murdered Annually
Per 100,000
0
5
10
15
20
Strong Autocracy
Weak Autocracy
Weak Democracy
Strong Democracy
Homicide and Democracy averages taken from 2000 to 2014.


Average Annual Homicides Per 100,000
by Freedom House Quartile
Average Number Murdered Annually
Per 100,000
0
5
10
15
20
Strong Autocracy
Weak Autocracy
Weak Democracy
Strong Democracy
Homicide and Democracy averages taken from 2000 to 2014.

5.4 Countries, V-Dem Levels, and Homicide Rate Variance

The following table orders countries by their V-Dem level and then by their homicide rate variance. It bears mention that these numbers describing each country's homicide rate variance have a less intuitive interpretation. Thus, the focus here should be more on the order in which countries appear than the distance between their variance.

Country	V-Dem Level	Homicide Rate Standard Deviation	Country	V-Dem Level	Homicide Rate Standard Deviation
Switzerland	9	0.2270138	Slovakia	6	0.5097151
Estonia	8	2.463872	Croatia	6	0.3775863
Costa Rica	8	1.962384	Ghana	6	0.1834022
Lithuania	8	1.694322	Trinidad and Tobago	5	9.56388
Uruguay	8	0.7437357	Jamaica	5	9.485605
United States	8	0.6909673	South Africa	5	6.231082
Czech Republic	8	0.4911599	Peru	5	2.685109
Finland	8	0.4500794	Serbia	5	0.3888934
Poland	8	0.4297142	India	5	0.3598941
Norway	8	0.4154172	Colombia	4	14.23014
Belgium	8	0.4053217	El Salvador	4	13.38508
Sweden	8	0.3814758	Paraguay	4	5.577335
Ireland	8	0.3673587	Mexico	4	5.370537
Chile	8	0.3600505	Dominican Republic	4	4.596564
United Kingdom	8	0.3384678	Ecuador	4	2.817666
Australia	8	0.3154739	Moldova	4	2.007794
Spain	8	0.2614975	Philippines	4	1.143095
France	8	0.2329929	Macedonia	4	0.6232022
Portugal	8	0.2231805	Romania	4	0.3614784
New Zealand	8	0.2171855	Honduras	3	16.85772
Denmark	8	0.1829468	Guatemala	3	6.571103
Netherlands	8	0.1797434	Guyana	3	4.394702
Austria	8	0.158865	Sri Lanka	3	2.653471
Canada	8	0.1266647	Malawi	3	2.021899
Japan	8	0.1154701	Georgia	3	1.639845
Latvia	7	2.419169	Thailand	3	1.612392
Greece	7	0.4718757	Papua New Guinea	3	1.570582
Slovenia	7	0.4382867	Nicaragua	3	1.406213
Germany	7	0.3949684	Kenya	3	1.325485
Hungary	7	0.357904	Nepal	3	0.3833663
Italy	7	0.1546979	Venezuela	2	8.501299
Panama	6	4.826484	Kyrgyzstan	2	12.93
Mongolia	6	3.016721	Uganda	2	1.75
Israel	6	0.6653513	Pakistan	2	0.42
Cyprus	6	0.5674505	Morocco	2	0.05
Bulgaria	6	0.5626641	Bangladesh	2	0.02

Country	V-Dem Level	Homicide Rate Standard Deviation	Country	V-Dem Level	Homicide Rate Standard Deviation
Kazakhstan	1	2.303998	China	0	0.4321195
Yemen	1	1.124924	Burma_Myanmar	0	0.3278719
Cambodia	1	0.678769	Azerbaijan	0	0.2939874
Algeria	1	0.41524	Syria	0	0.1629277
Belarus	0	2.534805	Vietnam	0	0.1026911
Cuba	0	0.5679309			