Does Police Militarization Affect Civilian Deaths?

Abstract

State-level panel data is used to determine whether the militarization of police departments affects the number of civilians killed by law enforcement officers. Utilizing novel civilian death data and information from the U.S. Census Bureau, FBI Uniform Crime Report, and U.S. Fish and Wildlife Services, I estimate an ordinary least squares model containing state-level fixed effects. Given there are multiple datasets containing civilian death information measured in a variety of ways, I estimate multiple models and present sensitivity analysis. I find that police militarization has a significant effect on civilian death rates. Considering the negative impacts of civilian deaths, the consequences of federal programs that perpetuate police militarization must be weighed against the potential benefits when considering future policy.

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I. Introduction

Recent incidents of police involved shooting deaths of unarmed civilians have brought to the forefront a national discourse about the militarization of municipal police departments. National and local media outlets contain stories of police officers using deadly force against unarmed civilians more frequently than ever (see Fisher 2014; Wofford 2014; Whitehead 2015; and Kindy, et al. 2015). Modern police forces resemble soldiers of war more than officers of the peace. The images of paramilitary style police officers in mine-resistant ambush protected vehicles (MRAPs) that were broadcast out of Ferguson, MO brought to the public's awareness the fact that military tools and tactics are being deployed by local police departments.

A cursory inquiry reveals that the Department of Defense has been transferring surplus military gear to local law enforcement agencies free of charge since as early as 1990. The most current form of such programs being known as the 1033 program (McCaskill 2015). From typewriters to MRAPs; from aircraft to assault rifles, the 1033 program transfers a broad range of surplus military equipment to state and local police departments. While many of the transferred items are indeed harmless, the number of lethal weapons and armored vehicles transferred is staggering. More than 600 MRAPs and over 79,000 assault rifles were transferred to state and local police departments between 2006 and 2014 (Fisher 2014).

While the sheer volume of military hardware being allocated to local law enforcement nationwide is enough to cause concern, the ramifications of supplying domestic police with the trappings of war ought to be addressed. Government maintains a monopoly on the use of force. Some argue this monopoly is the very purpose of government and the source of government authority (Rand 1967). Complications arise when government's use of force strays from

justifiable measures to overt repression of citizens. When police misuse this authority, even if only in perception, public trust and police legitimacy erode (Jackson, et al. 2013). Military weaponry and tactics are the "ultimate tool of government abuse," so it is imperative that oversight be in place to avoid such abuses (Hall, et al. 2013). I examine the relationship between state civilian death rates and 1033 transfers in order to encourage such oversight.

II. Literature Review

Prior literature on the militarization of police has primarily followed one of two avenues of research. Economists have examined the growth of government, the militarization of police, and police in general, in terms of political economy and public choice theory (see Buchanan 1975; Brennan and Buchanan 1985; Higgs 1987; Weingast 1995; Gordon 2002). These works examine constraints on political institutions and their relationships with individuals under particular regimes. McGuire and Olson (1996) develop a theory of whether holders of coercive power have an incentive to exercise this power consistent with the interests of society. They find that those in power do face incentives to apply that power within the broader interests of society.

Within this line of research, some economists focus on the balance between forces that protect property rights and those that oppress and expropriate (Grossman and Helpman 1994; Hirshleifer 1991). Hall and Coyne (2013) expose the circumstances and mechanisms by which a government evolves from being "protective" to becoming "predatory." They determine that constraints on government power can dissolve over time due to the characteristics of the political processes through which police and military activities are carried out.

In order to determine which characteristics may allow constraints on governments to dissolve, one must recognize the incentives faced by government bureaucracies. Bureaucracies

engage in stiff competition for limited resources, albeit without the profit and loss incentive. In this competition, bureaus attempt to expand the scale and scope of their activities, budgets and personnel (Niskanen 1971, 1975; Migue and Belanger 1974). This line of research is relevant to my analysis because both military and law enforcement bureaucracies strive to expand their activities. Federal programs such as 1033 enable this expansion.

A growing number of recent studies examine causes and trends concerning police militarization. Coyne and Hall (2014) investigate foreign interventions as a method for governments to experiment with domestic social-control mechanisms. Their analysis shows that coercive foreign interventions expand government's domestic scope and lead to losses of liberty at home. Endebak (2014) and Rahall (2015) explore the role that federal programs play in facilitating police militarization. Kraska and Cubellis (1997) utilize survey data to convey disturbing tendencies in the rise of paramilitary policing. More recently, numerous white papers have documented the continuation and expansion of these trends (see ACLU 2014; Balko 2006; Healy 2003).

While many economists have focused on validating perceived mission creep through the avenues of public choice theory and political economy, others have adopted an empirical approach to observe and quantify the determinants of police use of force and use of force as a crime deterrent. Gary Becker's (1968) groundbreaking economic analysis of crime and punishment opened the door for empirical research in crime and crime deterrence. Becker (1968) evaluates criminal activity within a cost/benefit analysis, asserting that crime is no different than any other activity that produces external harms. Models of this type are called deterrence models because of the inverse relationship between crime rates and measures of risk and potential punishment. He finds that greater likelihood of punishment improves social

welfare by discouraging some offenders from engaging in criminal activities. Under the assumptions offered by Becker, it does not require a substantial leap in judgment to assume that a police force armed with military equipment may, in fact, increase public welfare by increasing the costs of criminal activity.

Ehrlich (1975) incorporates into the deterrence model the probability of capital punishment. Later, he evaluates crime within a market framework, establishing equilibrium conditions between the quantity of offenses supplied and the quantity of protection demanded (Ehrlich 1996). Economists have paid much attention to the deterrence effect of enforcement measures not only for public policy repercussions but also as an opportunity to examine whether choices to participate in illegal behavior are sensitive to changes in risk and potential gain or loss.

Cloniger (1991) built upon Becker (1968) and Ehrlich (1975) by evaluating the probability of death to an offender caused by official action (police use of force). Cloniger utilizes a cross sectional study of 57 cities and finds that non-homicide violent crime rates are inversely related to police use of lethal force. His study suggests the existence of a deterrence effect on crime with police use of lethal force. In following with this line of research, I examine the possibility that 1033 serves as a deterrent to crime. While my analysis may be categorized exclusively as neither a deterrence nor equilibrium model, studies along this line offer valuable insights when determining public policy implications to which my research contributes.

Aside from economists that undertake an empirical approach to evaluating the effects of police use of force on crime, other academics, namely criminologists, apply a similar approach to quantify the determinants of police use of force. Klahm and Tillyer (2010) offer an exhaustive literature review examining the history and findings of this line of research. Most of

the works in the past two decades utilize multivariate analysis of the determinants of police use of force (Garner, et al. 2002; Friedrich 1980). Independent variables that quantify suspect, encounter, officer, agency-specific and community level characteristics are exploited to predict police use of force. With few exceptions, ordered probit and multinomial logit models are consistently used in this line of research. They generally find that police-public interaction results in the use of force when suspects resist arrest while under the influence of drugs or alcohol.

Lawton (2007), McCluskey and Terrill (2005), and Terrill and Reisig (2003), use linear modeling techniques to estimate the effects of independent variables on police use of force. Ross (2014) employs data from the United States Police-Shooting Database (USPSD) to examine the extent racial bias plays in the shooting of civilians between the years 2011 and 2014. My analysis draws from these works' methodologies to demonstrate how 1033 and community factors at the state-level affect civilian deaths.

My study contributes to both lines of research by bridging the gap between the political economy and the empirical avenues of research. By recognizing the growth in paramilitary policing then isolating one of the federal programs that contribute to this growth, I seek to establish an empirical link between the militarization of police departments and its consequences on society. The implications are huge. The effects of police militarization must be understood in the context of crime prevention and balanced with the constitutional guarantee of due process.

III. Data

State level panel data from numerous sources is used in my analysis to determine the effect of the Department of Defense's 1033 program on the number of civilians killed by law

enforcement officers each year. The years in my analysis range from 2000-2014 and data from all fifty states plus the District of Columbia is included.

Unfortunately, the federal government does not keep sufficient records of individuals killed by law enforcement officers (Ross 2014; Klinger 2012). For seven years the Justice Department, in coordination with the Bureau of Justice Statistics (BJS), conducted an ongoing national survey to document such occurrences known as the Arrest Related Deaths (ARD) program. Regrettably, participation in ARD was voluntary and it is estimated that less than one tenth of all state and local police departments participated. Following the 2010 report publication, BJS initiated an evaluation of the validity and dependability of the ARD data. Results indicated the ARD data collection methodology did not adequately capture all reportable deaths so BJS suspended data collection and reporting. Because of these shortcomings, ARD data will be used only for robustness checks.

Seeing that government data sources may prove insufficient, I utilize novel data from a public database for my dependent variable. Data on civilian deaths is from the website, www.FatalEncounters.org. Fatal Encounters was spawned following the 2012 shooting of an unarmed college student at the University of South Alabama. Since that time, the Fatal Encounters database has documented 8,882 civilian deaths at the hand of law enforcement since January 1, 2000 (Burghart 2014). Deaths reported in this database are not categorized as justifiable or otherwise. As such, my analysis does not attempt to consider such qualifications.

According to the website, data collection methods include the following: paid staff researchers, public records requests and crowd-sourced. Each submitted incident is independently verified by staff researchers. Data from Fatal Encounters remains far superior to official records; therefore it is used to estimate my model.

State civilian death totals are aggregated for each year of interest. Raw yearly totals are converted into per million estimates using population estimates from the U.S. Census Bureau. The mean of civilian deaths per million citizens indicates that roughly 2 (1.7138) people for every million citizens were killed annually in each state by law enforcement officers between 2000 and 2014. A full list of my summary statistics is available in Table 1.

Dollar amounts for 1033 disbursements were retrieved from the Defense Logistics Agency Law Enforcement Support Office's website, which documents every item transferred to law enforcement agencies since 1997 (DLA 2015). These files document each item by name, state, receiving department name, item number, description, acquisition value and ship date. State totals are aggregated per year based on the ship date. Table 1 shows the mean annual 1033 expenditure per law enforcement officer is $834.85.

The Federal Bureau of Investigation (FBI) maintains annual reports known as its Uniform Crime Report (UCR) series. UCR data is employed for many of the independent variables in my analysis, as well as the number of law enforcement officers (LEO) per state at time (t) to determine per LEO values for my key variable. UCR data includes Law Enforcement Officers Killed and Assaulted (LEOKA). I utilize state totals for the number of law enforcement officers feloniously killed each year. UCR data is also used to estimate the following: homicide rates, violent and property crime rates, as well as the number of law enforcement officers. All aforementioned rates are per thousand citizens.

The variable *FIREARMS* is a proxy variable used to indicate the prevalence of privately held firearms in each state at time, t. Data for this variable was retrieved from the United States' Fish and Wildlife Service's National Hunting License Report. This report contains data on non-

resident licenses, resident licenses, total licenses and total costs by state. I utilize the resident license count per one thousand citizens in my model to proxy gun prevalence.

The remaining variables' observations are from the U.S. Census Bureau's Statistical Abstract of the United States. Included are unemployment rates, per capita median income, percent of the population living at or below the poverty line, percent of the population that is white, percent that is African-American and percent that is Hispanic.

IV. Methodology

In an effort to gain insight into the effects of police militarization, I apply a balanced approach that frames the Department of Defense's 1033 program within a pseudo-cost/benefit analysis. I call my analysis a pseudo-cost/benefit analysis because I do not attempt to apply economic values to my estimations. I simply evaluate potential components of costs and benefits that could be employed in future research. On the cost side of the equation, I develop a model that evaluates civilian deaths as a function of the 1033 program with multiple state-level covariates. The following equation is estimated using Ordinary Least Squares with state-level fixed effects:

$$DEATH_{st} = \beta_o + \beta_1 PERLEO1033_{st} + \beta_2 LEOP1K_{st} + \beta_3 HOMICIDE_{st} + \beta_4 VIOLENT_{st} + \beta_5 PROPERTY_{st} + \beta_6 UNEMPLOYED_{st} + \beta_7 POVERTY_{st} + \beta_8 INCOME_{st} + \beta_9 DENSITY_{st} + \beta_{10} WHITE_{st} + \beta_{11} BLACK_{st} + \beta_{12} HISPANIC_{st} + \beta_{13} POLITICS_{st} + \beta_{14} FIREARMS_{st} + \beta_{15} FE_s + \epsilon \quad (1)$$

My analysis begins with a model that evaluates the number of civilian deaths utilizing law-enforcement related independent variables. The dependent variable, *DEATH*, is the number of civilian deaths per one million citizens in each state at time, t. *PERLEO1033*, my key variable, is the dollar amount of 1033 military surplus transferred per law enforcement officer in

each state at time, t. *LEOP1K* represents the number of law enforcement officers per thousand citizens in each state at time, t.

Understanding that civilian deaths would not occur without police-public interaction, I attempt to control for state-level determinants of police mobilization. Rates of crime serve as an appropriate gauge for the frequency of police-public interactions, therefore homicide rates (per 1,000; *HOMICIDE*) as well as violent and property crime rates (per 1,000; *VIOLENT* and *PROPERTY*, respectively) are controlled for. Next, I incorporate state-level median income (*INCOME*), percent of the population living at or below 100% of the poverty level (*POVERTY*), and average annual statewide unemployment rates (*UNEMPLOYED*).

Additionally, I include demographic variables such as percent of the population that is white (*WHITE*), percent of the population that is African-American (*BLACK*), percent of the population that is Hispanic (*HISPANIC*) and population density (*DENSITY*). Furthermore, I control for political preferences by adding a dummy variable equal to 1 if the governor of the state is Republican at time, t; equal to zero if the governor is Democrat or other (*POLITICS*). Next, I use a proxy for gun prevalence, *FIREARMS*, which exploits the number of resident hunting licenses issued per 1,000 citizens. Finally, state-level fixed effects are used to control for time-invariant unobserved heterogeneity among states.

I consider two measures in order to assess the possible benefits of 1033. First, I estimate the effect 1033 has on violent crime, all else constant. Second, I evaluate the effect of 1033 on the number of law enforcement officers feloniously killed. If 1033, in concordance with Becker's (1968) analysis, serves as a deterrence mechanism, I expect to find an inverse relationship with the 1033 program and violent crime. The 1033 program's effect on law

enforcement officers feloniously killed could serve as a cost or benefit, depending upon a positive or inverse causal relationship.

The following equations are estimated using Ordinary Least Squares with state-level fixed effects:

$$VIOLENT_{st} = \beta_o + \beta_1 PERLEO1033_{st} + \beta_2 UNEMPLOYED_{st} + \beta_3 POVERTY_{st} + \beta_4 INCOME_{st} + \beta_5 DENSITY_{st} + \beta_6 FIREARMS_{st} + \beta_7 WHITE_{st} + \beta_8 BLACK_{st} \; B_9 HISPANIC_{st} + \beta_{10} POLITICS_{st} + \beta_{11} FE_s + Є \quad (2)$$

$$LEOKA_{st} = \beta_o + \beta_1 PERLEO1033_{st} + \beta_2 UNEMPLOYED_{st} + \beta_3 POVERTY_{st} + \beta_4 INCOME_{st} + \beta_5 DENSITY_{st} + \beta_6 FIREARMS_{st} + \beta_7 WHITE_{st} + \beta_8 BLACK_{st} \; B_9 HISPANIC_{st} + \beta_{10} POLITICS_{st} + \beta_{11} FE_s + Є \quad (3)$$

V. Results

The results of my first regression point to some interesting findings. The coefficient for *PERLEO1033* (.0002066) instructs that there is a positive effect on civilian deaths for every dollar amount of surplus transferred to a law enforcement officer. While at first this may seem miniscule, when total state population numbers and mean 1033 transfers are tabulated, the real effect becomes clear. My model suggests a more than one percent increase in civilian deaths for every $100.00 worth of military surplus transferred per officer. This translates to nearly 52 civilian deaths nationally every year as a direct consequence of 1033.

Another fascinating result concerns the resident populations of African-Americans. The coefficients of *BLACK* and *WHITE* suggest that a one percentage point increase in the African-American resident population has roughly three times the effect of a similar increase in whites, all else constant. A one percentage point increase in the Caucasian population indicates a 7.5% increase in civilian deaths ($\beta = .128$). However, a one percentage point increase in the African-

American population suggests nearly a twenty-three percent increase in civilian deaths (β = .388). This is consistent with previous research that finds African-Americans have a much greater probability of being shot by police. (Ross 2014, Jacobs 1998). Refer to Table 2 for a complete list of my results.

For sensitivity analysis, I replaced the variable, *DEATH* with Arrest Related Death data from the FBI Uniform Crime Reports. Following are the results from regressing *ARD* as the dependent variable. As the right-hand side of Table 2 illustrates, *PERLEO1033* is no longer significant at any conventional level. With the exceptions of *POVERTY, DENSITY* and *FIREARMS,* no other robust results are found.

The sign for *POVERTY* becomes negative and it is now significant at the 99% confidence level. Population density (*DENSITY*, β = .0465) retains its positive effect and is now significant at the 95% confidence level. The coefficient indicates an increase of one person per square mile increases civilian deaths by 2.7%. Firearm prevalence (*FIREARMS*, β = -.0385) retains its negative sign, but unlike the previous regression, it is now significantly different from zero at the 95% confidence level. This result suggests increased prevalence of privately held firearms decreases civilian deaths by law-enforcement officers.

Having demonstrated a positive relationship between 1033 and civilian deaths, it is now important to weigh the costs of 1033 against any conceivable social-welfare improving aspects. In doing so, I look at 1033's effect on violent crime and law enforcement officers feloniously killed. Tables 3 and 4 offer a complete list of my results from these regressions. I find no evidence that 1033 has any significant effect on violent crime rates. However, for every $100.00 in 1033 surplus transferred, there is a 1.488% decrease in law enforcement officers feloniously

killed in the line of duty. These outcomes should be considered when weighing the costs of 1033 with its potential benefits.

Indeed, there are visible trade-offs that demand scrutiny before any policy judgments are considered. Any public policy that exhibits potentially severe consequences deserves rigorous study. In conclusion I discuss limitations in my research and offer insight and suggestions for moving forward with research concerning police militarization and the consequences thereof.

VI. Conclusion

Police militarization and its effects on social welfare are of grave concern to all members of society. The notion that federal programs perpetuate police militarization and result in civilian deaths must be considered when developing policy recommendations. Researchers that evaluate programs such as 1033 within the context of police use of force should remain conscious of the trade-offs that exist with such programs.

It should be noted that President Obama quietly suspended the 1033 program while my research was being conducted. This suspension does not diminish the importance of my findings as there are no guarantees the suspension will last beyond his presidency. Furthermore, the president's actions did nothing to address the overwhelming amount of material already accumulated by local law enforcement. My results inform the broader study of police militarization which should continue to be evaluated extensively.

One obvious limitation to my research concerns the availability of quality data. My research illustrates the importance of collecting and recording usable data on the number of civilians killed by government agents. The degree to which errors in variables cause distortions in my analysis can only be determined when public agencies are required to maintain sufficient databases of their agents' actions.

Further examinations of 1033 and similar programs should continue to incorporate methods utilized in political economy, public choice and empirical avenues of research. With improved data, future analyses will be able to integrate circumstantial variations at individual-incident levels to better evaluate the effects of such programs. Much can be accomplished utilizing agency-specific and community level data to assess 1033.

As new data becomes available, the potential to include measures for justifiable police homicides should be expanded. Future estimates could be extended in a framework that includes data unique to police departments and counties. Examinations that offer greater precision should provide clearer insights into the consequences of police militarization.

Another possibility for research is to consider optimality conditions for inclusion within an empirical model. Forthcoming research should take into account the economic costs associated with loss of life, possible litigation as a result of officer use of force, as well as financial and opportunity costs surrounding surplus military transfers.

If, as my research indicates, Federal programs like 1033 cause a substantial increase in civilian deaths, policy makers should be obligated to modify such programs in such a fashion as to eliminate, or at least diminish, these negative consequences. More transparent representation of officer-involved shooting data as a function of federal law enforcement aid programs will help the public, academics, and government agencies better assess the actions of police in the United States. Until such records are required, the true consequences of police militarization will remain but a fleeting mist, available only through theoretical insights and emotion driven agendas.

Table 1. Summary Statistics

Variable	Observations	Mean	Std. Dev.	Minimum	Maximum
DEATH	765	1.7138	1.9592	0	11.67
PERLEO1033	765	834.85	1132.04	0	5783.74
LEOP1K	765	3.1349	.94992	1.1015	8.7955
LEOKA	765	.98431	1.4837	0	10
HOMICIDE	765	.049628	.043767	.004677	.4555
VIOLENT	765	4.0817	2.1737	.7791	17.18
PROPERTY	765	31.869	8.3635	15.24	62.94
UNEMPLOY	765	5.9731	2.0577	2.2	14.4
POVERTY	765	12.730	3.4443	5.2	23.1
INCOME	765	48046.62	8442.72	29359	76165
POPDENSITY	765	378.59	1354.13	1.1	10731.16
FIREARMS	765	79.21	68.58	0	317.52
WHITE	765	81.232	13.263	25.59	97.249
BLACK	765	11.640	11.278	.3096	61.078
HISPANIC	765	9.7505	9.5466	.6833	47.668
POLITICS	765	.52810	.49954	0	1

Table 2. Results

	Fatal Encounters		Arrest Related Deaths	
Variable	β	Robust Std. Error	β	Robust Std. Error
1033	.0002066*	.000082	-.0001915	.0001343
LEOP1K	-0.15906	.245274	-.500046	.445274
HOMICIDE	-13.1352	8.19824	3.80038	18.6163
VIOLENT	-0.28419*	.129901	-.090936	.5290998
PROPERTY	- .027124	.024217	.032356	.0518831
UNEMPLOY	- .12368**	.037841	.066108	.0604652
POVERTY	.037142	.045359	-.19896**	.0757516
INCOME	.0000209	.00002	.0000358	.0000421
DENSITY	.002188	.002395	.046453*	.0224143
FIREARMS	-.005174	.008285	-.038534*	.0184605
WHITE	.127964**	.039779	.153889	.3262918
BLACK	.388298**	.12423	-.103622	.4200449
HISPANIC	.189267	.10074	.009107	.2716822
POLITICS	.179542	.100783	-.061779	.2198581

* 95% Confidence Level **99% Confidence Level

Table 3. Results (Benefit Analysis, the crime deterrent effects of 1033)

Variable	β	Robust Std. Error
1033	-.0000299	.0000205
UNEMPLOYED	-.030086*	.0131016
POVERTY	-.0283201*	.0137134
INCOME	.0000238 **	7.95 e-06
DENSITY	-.0015214 **	.0005302
FIREARMS	.003059	.0021318
WHITE	-.0330398*	.0138964
BLACK	.0805991	.0442753
HISPANIC	-.2578657 **	.0408596
POLITICS	-.020946	.0333731

* 95% Confidence Level **99% Confidence Level

Table 4. Results (Benefit Analysis, the LEOKA effects of 1033)

Variable	β	Robust Std. Error
1033	-.0001465**	.0000418
UNEMPLOYED	.0130079	.033519
POVERTY	.0140694	.032128
INCOME	.0000183	.0000133
DENSITY	.0003703	.0005708
FIREARMS	.0000255	.0041947
WHITE	-.0026493	.0189615
BLACK	.0688789	.0692804
HISPANIC	-.1009254	.051899
POLITICS	-.1055241	.103189

* 95% Confidence Level **99% Confidence Level

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