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Media Density and (Non-)Violence: An Extension of "Not by the Sword Alone"

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Introduction

In this paper we extend "Not by the Sword Alone: Soft Power, Mass Media, and the Production of State Sovereignty" by T. Camber Warren (2014). Warren (2014) makes a key contribution to research on the relationship between state power and the onset of civil wars. Most prior research focused on the extent to which variation in greed, grievances, or opportunities for rebellion explained civil war onset (Cederman & Vogt, 2017). This body of scholarship largely defines greed and opportunities for rebellion in materialist terms and grievance in terms of the socio-political composition of states (Fearon & Laitin, 2003; Collier & Hoeffler, 2004; Cederman & Girardin, 2007). Warren (2014) advances this research agenda by arguing that states' ability to project soft power domestically is better at predicting the onset of civil wars than material and socio-political factors.

Nye famously defined soft power as the ability to get others to "want what you want" (Nye, 1990, 167); soft power operates through shaping norms. It manifests when actors influence others' behavior through persuasion, attraction, and the shaping of attitudes toward what is and is not desirable. This norm-shaping component makes the concept of soft power largely immaterial, a fact that has limited scholars' ability to study the concept quantitatively. The primary empirical and theoretical innovation of Warren (2014) is the construction of a means to quantify states' soft power. Rather than measure soft power directly, Warren (2014) focuses on the set of resources necessary for the domestic generation and projection of soft power: variation in the national media environment. Warren (2014) develops the MEDIA DENSITY INDEX (MDI), which is defined on a country-year basis as:

$$MDI_{it} = \frac{TV_{it} + Radio_{it} + Newspaper_{it}}{Population_{it}} * 100$$

where TV_{it} is the number of television receivers used for broadcasts to the public in a given country-year; $Radio_{it}$ is the number of radio receivers used for broadcasts to the public in a given country-year; $Newspaper_{it}$ is the number of newspapers published at

least four times a week in a given country-year;[1] and $Population_{iy}$ is the population in a given country-year. Warren (2014) uses logistic regression and a dataset of 177 countries from 1945-1999 to demonstrate that MDI is a better predictor of civil war onset than population, natural resources, level of democracy, religious fractionalization, and levels of mountainous terrain.

One observable implication of Warren's theoretical argument is that variation in states' ability to project soft power should also relate to other types of political action that challenge state authority. In this paper, we extend Warren's findings by using MDI to predict the presence of other forms of contentious domestic politics. We find that MDI is strongly associated with violent forms of contentious politics, but not peaceful protests. In particular, MDI is a robust predictor of the number of violent riots occurring within a country in a given year; however, MDI appears to have no relationship to the incidence of non-violent anti-government protests. This is a notable finding, suggesting that a states' ability to project soft power has heterogenous effects on the incidence of violent and non-violent forms of collective action.

The remainder of this paper proceeds in three sections. First, we provide a brief theoretical motivation for our extension of Warren (2014). Second, we describe the data we use in our analysis, explain our empirical model, and present briefly our results. Third, we conclude with a discussion of the implications of our findings and avenues for future research.[2]

Theoretical Motivation

The relationship between media density and contentious political events is not intuitively obvious. On one hand, dense communications networks make it easier for political

[1] Warren does not specify whether $Newspaper_{it}$ represents state-owned newspapers or all newspapers in a state; his theoretical argument is that any means of disseminating state decisions, not just state-owned means, affect a state's soft power.

[2] Our initial replication of Warren (2014) is presented in an appendix.

actors to connect with each other and coordinate their actions, which could make anti-government mobilization more likely. Dense communication networks also facilitate the dissemination and articulation of goals, strategies, and mutual understandings of meaning that are necessary for mobilization. Tarrow's work on social movements argues that "solutions to the problem of mobilizing people into campaigns and coalitions of collective action depend on shared understandings, social networks, and connective structures and the use of culturally resonant forms of action" (Tarrow, 2011, 16). A dense media environment helps facilitate all of Tarrow's solutions to the problem of collective action.

Still, if states themselves use dense media networks to generate shared understandings that reinforce state power, then dense media networks may make collective action against the state less likely. Weber's definition of the state as an entity with a monopoly on the "legitimate" use of force within a given territory presaged the importance of beliefs about when and by whom the use of power is acceptable (1998). States capable of communicating that only they (the state) may appropriately use force could find that dense media environments increase their soft power and dissuade others from challenging their authority.

It is also possible that MDI could have different effects on different types of contentious politics. If MDI enables the state to disseminate norms of appropriate political behavior domestically, then MDI may correspond with decreases in violent, anti-government behavior, but with increases in other forms of political engagement. Understanding the differential effects of MDI on violent and non-violent collective action is worthwhile because recent research has demonstrated the surprising efficacy of non-violent relative to violent activism (Chenoweth & Stephan, 2011). Overall, the literature suggests a theoretically meaningful relationship between variation in MDI and the incidence in different forms of violent and non-violent collective action.

Data, Methods, and Analysis

Warren (2014) aims to explain variation in the onset of civil war. His main dependent variable is drawn from Sambanis (2004), which defines civil war onset as a country-year experiencing 1,000 or more battle deaths. To extend Warren (2014), we change his question by investigating the relationship between MDI and other forms of contentious politics. We gather data on a variety of forms of violent and non-violent events from the Cross-National Time-Series Data Archive (Banks & Wilson, 2017). For simplicity of presentation, in this paper we examine the relationship between MDI and two dependent variables: the number of violent riots occurring in a country-year and the number of peaceful anti-government demonstrations occurring in a country-year.[3] We focus on these two outcomes because they are in many respects opposite sides of the same coin: both events entail the mobilization of large numbers of people, but they differ in their level of violence. Therefore, the relationship between these outcomes variables and MDI offers perspective on the relationship between MDI and collection action generally as well as its specific relationship with violent versus non-violent behavior. Table 1 presents the definitions of these two variables as provided by Banks & Wilson (2017).

Table 1: Measurements of Contentious Politics

Dependent Variable	**Definition**
Riots	Any violent demonstration or clash of more than 100 citizens involving the use of physical force.
Anti-government Demonstrations	Any peaceful public gathering of at least 100 people for the primary purpose of displaying or voicing their opposition to government policies or authority, excluding demonstrations of a distinctly anti-foreign nature.

[3] In our replication code we also analyze the relationship between MDI and the number of armed attacks by guerrilla groups, assassinations, government purges, and government crises per country-year and find similar statistically significant results. We also analyze the number of revolutions and strikes occurring in a country-year, but do not find statistical evidence that MDI is associated with these outcomes. For simplicity of presentation and to preserve space, these results are only presented in our replication file.

Although we adopt new outcome variables, we employ the same set of covariates presented by Warren (2014). These include MDI as defined in the introduction – which is based upon data from Banks & Wilson (2017) as our new dependent variables – as well as gross domestic product per capita, population, land area, proportion of a country that is mountainous terrain, whether or not a country derives a third or more of its export revenue from fossil fuels, level of democracy and its square, ethnic and religious fractionalization.[4] To address concerns with endogeneity, all independent variables are lagged by one year. We also include the dependent variable lagged by one year to help address concerns with autocorrelation.

Warren (2014) models the onset of civil war using a logistic regression. Given that our outcomes variables are event counts, and not dichotomous, we use both Poisson and Negative Binomial models. Altogether we report the results of three different regressions. In models (1) and (2) we run a Poisson regressions with country-level cluster robust standard errors. The only difference between model (1) and (2) is that model (1) excludes the covariate for GDP per capita. Following Warren (2014), we do this to investigate whether or not MDI has an effect independent of a states' level of development and when controlling for per capita GDP. We also found evidence of overdispersion, leading us to question the validity of a Poisson model specification. To account for overdispersion, we also report in model (3) the results of a Negative Binomial regression using all of the same covariates as model (2) with country-level cluster robust standard errors.

The results of our main analysis are presented in Table 2. Model (1) shows that MDI is negatively correlated with the number of riots and positively correlated with the number of peaceful demonstrations in a country-year. At first glance this provides evidence supporting the theoretical claim that increases in soft power lead to less violent behavior and more non-violent collective action. However, as model (2) shows, this result is sensitive

[4]For a more detailed explanation of why these variables are included, see (Warren, 2014, 125-126); for the time being, we accept all of these as appropriate covariates. In subsequent drafts of this article we will consider modifying the choice of covariates.

to adding GDP per capita as a covariate. As noted above, Warren (2014) uses these different models as a way to demonstrate that MDI has an independent effect on the incidence of civil war onset and is not just another means of measuring level of development. We take Warren's modeling choices as a given. The difference in the results between model (1) and (2) suggest MDI is not a good predictor of peaceful demonstrations when controlling for per capita GDP. In order to test our finding's dependence on overdispersion, in model (3) we replicate the analysis of model (2), but using the Negative Binomial distribution. We can see that the results here are substantively similar to those presented in model (2). Again MDI is a statistically significant predictor of riots, but has no significant correlation with the incidence of peaceful demonstrations.

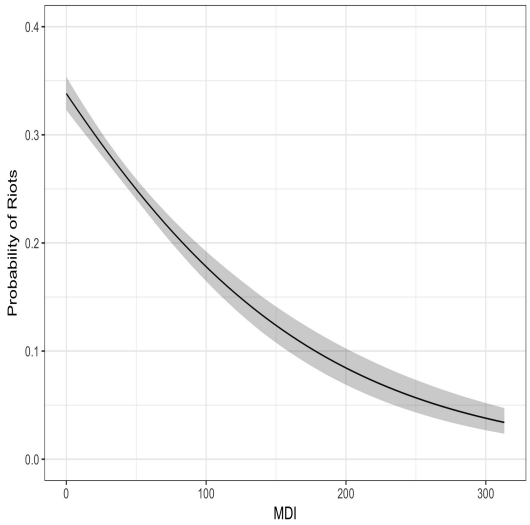
Ultimately, we do not find that MDI is statistically significant in model (2) or model (3) when the dependent variable is peaceful anti-government demonstrations, but MDI is significant in those same models when the dependent variable is riots. The magnitude of the coefficient on model (3) also suggests a substantively meaningful relationship between MDI and the number of riots in a country-year: a one-unit increase is MDI is associated with the number of riots decreasing by approximately one percent ($exp(-0.0089) = 0.99$). Given that MDI ranges from a minimum of 0 to a maximum of 313, large changes in MDI coincide with meaningful changes in the incidence of riots. For instance, the 25th percentile of MDI is 8 and the 75th percentile is 68, meaning that a shift from the 25th to the 75th percentile of MDI would be associated with the number of riots decreasing by approximately 60 percent.

In order to investigate these findings more closely, we present plots of the marginal effect of MDI on the number of riots and peaceful demonstrations when all other covariates are held at their means using model (2) in Figure 1 and model (3) in Figure 2. These plots confirm our earlier analysis showing a steep decrease in the probability of riots as MDI increases and a relatively flatter relationship between MDI and the incidence of peaceful anti-government protests.

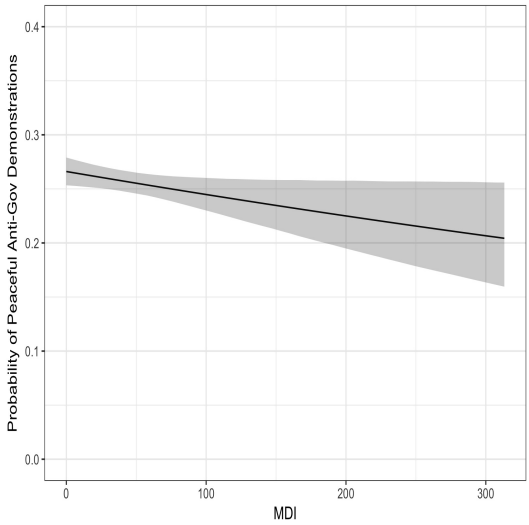
Table 2: Poisson and Negative Binomial Regression of Riots and Peaceful Protests

	Dependent variable:					
	Riots			Peaceful Demonstrations		
	Poisson		*Negative Binomial*	*Poisson*		*Negative Binomial*
	(1)	(2)	(3)	(1)	(2)	(3)
MDI	−0.0022*	−0.0086***	−0.0089***	0.0046***	−0.0011	−0.0017
	(0.0013)	(0.0025)	(0.0023)	(0.0009)	(0.0016)	(0.0017)
GDP Per Capita		0.4708***	0.3890***		0.4978***	0.3896***
		(0.1274)	(0.1093)		(0.1228)	(0.1125)
Land Area	−0.0798	−0.0852	−0.0765	−0.1776***	−0.1696**	−0.1667***
	(0.0642)	(0.0616)	(0.0506)	(0.0669)	(0.0682)	(0.0478)
Mountainous Terrain	0.0763**	0.0782**	0.0674**	0.0941***	0.0990***	0.0969***
	(0.0306)	(0.0311)	(0.0300)	(0.0348)	(0.0380)	(0.0302)
Population	0.4870***	0.5225***	0.5001***	0.5644***	0.5993***	0.5343***
	(0.0582)	(0.0543)	(0.0558)	(0.0552)	(0.0540)	(0.0508)
Oil Exporter	0.0415	−0.1536	−0.0977	−0.0637	−0.2639	−0.2027
	(0.2124)	(0.2222)	(0.1864)	(0.2317)	(0.2400)	(0.1606)
Democracy	0.2311***	0.2249***	0.2135***	0.2133***	0.2132***	0.2043***
	(0.0613)	(0.0565)	(0.0488)	(0.0544)	(0.0532)	(0.0450)
Democracy Squared	−0.0083***	−0.0085***	−0.0083***	−0.0090***	−0.0094***	−0.0085***
	(0.0027)	(0.0025)	(0.0021)	(0.0023)	(0.0022)	(0.0019)
Ethnic Fractionalization	−0.0849	0.0396	−0.3285	0.0747	0.2015	0.0425
	(0.2790)	(0.2653)	(0.2471)	(0.2865)	(0.2873)	(0.2531)
Religious Fractionalization	−0.3559	0.0453	−0.0151	−0.6108	−0.2265	−0.4836
	(0.3596)	(0.3447)	(0.2925)	(0.4182)	(0.4045)	(0.3067)
DV Lagged One Year	0.0788***	0.0816***	0.2219***	0.0686***	0.0661***	0.2325***
	(0.0101)	(0.0109)	(0.0129)	(0.0124)	(0.0136)	(0.0148)
Constant	−9.1472***	−9.8764***	−9.4113***	−9.5718***	−10.4969***	−9.4772***
	(0.7762)	(0.8191)	(0.7762)	(0.6917)	(0.7668)	(0.7336)
Observations	5,751	5,647	5,647	5,751	5,649	5,649

Note: *p<0.1; **p<0.05; ***p<0.01

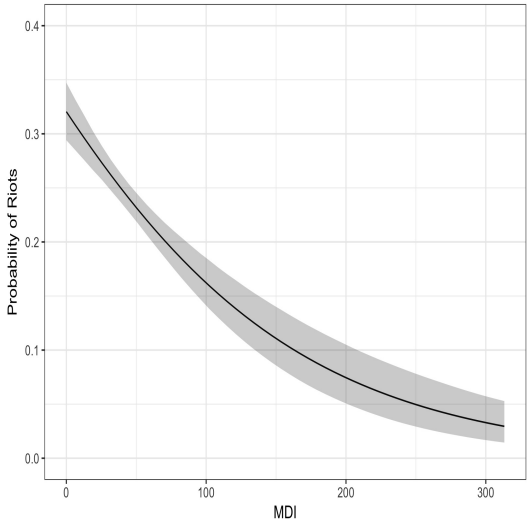


(a) DV = Riots

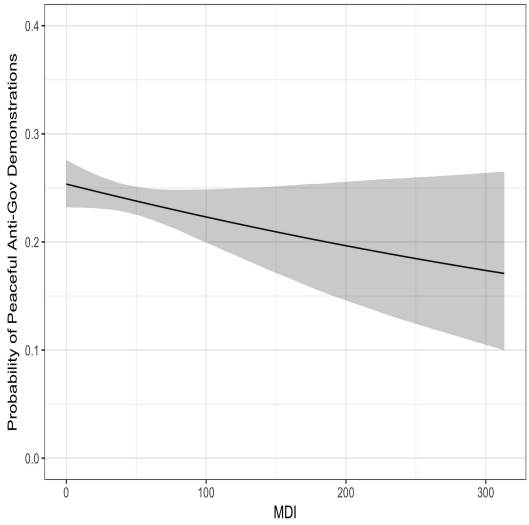


(b) DV = Peaceful Anti-Gov Demonstrations

Figure 1: Marginal Effects of MDI with Covariates at Mean using Poisson Regression



(a) DV = Riots



(b) DV = Peaceful Anti-Gov Demonstrations

Figure 2: Marginal Effects of MDI with Covariates at Mean using Negative Binomial Regression

Discussion

Our findings are noteworthy in at least two respects. First, they present a wrinkle in the theoretical argument of Warren (2014). On one hand, the negative association

between MDI and various forms of violent political mobilization appears consistent with Warren's argument. As a states' capacity to project soft power increases one would expect to observe fewer violent political events that fall outside the realm of institutional political engagement. On the other hand, the lack of correlation between MDI and non-violent demonstrations is intriguing. While we don't have strong theoretical reasons to think that the association would be negative or positive,[5] a lack of any relationship seems odd given the emphasis on communication networks on explanations of contentious political in the literature. One avenue for further developing this article for publication would involve gathering more nuanced panel data on non-violent political events, such as from Chenoweth & Stephan (2011), and trying to identify the mechanisms that account for this null result. This could lead to an important refinement of Warren's (2014) theoretical argument.

Second, our findings also have practical implications for governments, activists, and public policy more broadly. Violence is a public bad. As Warren demonstrates, the development of more dense media environments reduces the likelihood of civil war. We show that this finding generalizes to other types of violent collective action. Fostering and supporting a dense media environment appears to be, on average, to be associated with a reduction in the incidence of violent riots.

[5]It could be that peaceful protests are more likely if individuals have more affinity toward the state or that all protest in general is less likely as the state acquires more soft power.

Appendix

Effects of MDI on Other Types of Contentious Politics

We reported violent and non-violent protests in the main body of the paper, but also tested MDI's effects on other forms of anti-government activity. Definitions for those activities are listed in the table below (Banks & Wilson, 2017). Results of this analysis are presented in our replication file.

Table 3: Measurements of Contentious Politics (Non-Demonstration)

Dependent Variable	**Definition**
Purges	Any systematic elimination by jailing or execution of political opposition within the ranks of the regime or the opposition.
Revolutions	Any illegal or forced change in the top government elite, any attempt at such a change, or any successful or unsuccessful armed rebellion whose aim is independence from the central government.
Assassinations	Any politically motivated murder or attempted murder of a high government official or politician.
General Strikes	Any strike of 1,000 or more industrial or service workers that involves more than one employer and that is aimed at national government policies or authority.
Major Government Crises	Any rapidly developing situation that threatens to bring the downfall of the present regime - excluding situations of revolt aimed at such overthrow.
Guerrilla Warfare	Any armed activity, sabotage, or bombings carried on by independent bands of citizens or irregular forces and aimed at the overthrow of the present regime.

Replication of Warren (2014)

We present code that reproduces the analysis of Warren (2014) in our replication file. We decided to exclude this analysis from the text of this paper, because it is not central to the question at hand.

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