Correlates of Media Freedom: An Introduction of the Global Media Freedom Dataset

Online Appendix

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# 1. Overview

In this document we provide additional information about the coding of the Global Media Freedom Dataset (section 2) and the sources used for the coding (section 3). We also provide more detailed information about other measures of press freedom and how these measures compare to the GMFD (section 4). In sections 5-7, we provide additional information about our empirical analysis of the correlates of media freedom.

# 2. Coding Information for the Global Media Freedom Dataset

The Global Media Freedom Dataset (GMFD) is a revised and updated version of a definition-driven data set first collected by Van Belle (2000) and expanded by Whitten-Woodring and Van Belle (2014). The media environment for each country is placed in one of the following categories:

* 1 – Free: Countries where criticism of government and officials is a common part of the political dialogue
* 2 – Imperfectly Free: Countries where social, legal, or economic costs related to the criticism of government or officials limits public criticism, but investigative journalism and criticism of major policy failing can and does occur
* 3/4 – Not Free: Countries where it is not possible to safely criticize the government or officials, and media are either indirectly controlled (coded 3) or directly controlled (coded 4)[[1]](#footnote-1)
* 0 – No Media: Countries were there is no effective national media

Only the Congo (1960-1968) and Nepal (1948-1959) fall into the *No Media* category. There are also several codes for missing data (8=missing because political or social disruption make it impossible to code the country’s media; 9=insufficient data). The three basic categories of *Free*, *Imperfectly Free* and *Not Free* reflect the definition of media freedom as the ability to safely criticize the government. Although intuitively this definition suggests a binary measure where journalists either can or cannot criticize the government, in reality there are many cases where journalists can criticize government, but will pay some costs for doing so; hence the need for the *Imperfectly Free* category. Thresholds determine the categories, and the coding scheme was designed around this conceptualization. For the update, advanced undergraduate students majoring in political science were hired to code all available countries from 1995 to 2001. The process began with coders working independently (at least two evaluated each country-year) to assess the media environment based on two critical questions. The first threshold is whether conditions exist for the media to be functionally free. To distinguish between this most important divide between the *Not Free* and the *Imperfectly Free* categories, coders were asked, “Could a domestic news organization publish or broadcast the full story of a government scandal on the scale of Watergate?”[[2]](#footnote-2) If “no,” then the coding was *Not Free*. If “yes,” then the coders were asked, “Is the criticism of government, political leaders and economic elites sufficiently costless as to appear routine?” If “yes” then the coding was *Free*. Otherwise the coding was *Imperfectly Free*.

**Table A1: Coder Agreement for the Global Media Freedom Dataset**

|  |  |
| --- | --- |
|  | Percentage of Cases with Agreement |
| GMFD Round 1  (Functionally Free/Not Free) | 89.5% |
| GMFD Round 2  (Imperfectly Free/Free) | 88.1% |

In most cases there was coder agreement for each country-year. As depicted in Table A1, for the *Not Free/Imperfectly Free* divide, coders were in agreement for 89.5% of the cases. For the *Imperfectly Free/Free* divide, coders were in agreement for 88.1% of the cases. Where there was not agreement, an additional two coders, including one of the principal investigators, became involved (the percentages of reviewed cased are shown in Table A2). In addition to the cases where there was a discrepancy, another 3% of the cases were randomly selected and checked an additional two coders. There were no problems found with the coding of these cases.

**Table A2: Reviewed Cases**

|  |  |  |
| --- | --- | --- |
|  | **Percentage of Cases Reviewed** | **Reviewing Coder Agreement** |
| **GMFD Round 1 Discrepancies**  **(Functionally Free/Not Free)** | 10.5% | 100% |
| **GMFD Round 2 Discrepancies**  **(Imperfectly Free/Free)** | 7%  (11.9% of all Free/Imperfectly Free cases) | 100% |
| **Randomly Selected Cases** | 3% | 100% |
| **Total Reviewed Cases** | 20.5% | 100% |

Finally, both of the principal investigators reviewed all of the codes in order write the country reports for the *Historical Guide to World Media Freedom: A Country-by-Country Analysis* (Whitten-Woodring and Van Belle 2014), which provide qualitative information documenting the reasons for each shift in the coding of media freedom in each of the 196 countries. 91% of the codes remained unchanged. Of the 9% of the codes that were changed, more than half were shifts from missing data to coded cases due to improved information from the historical research for the book. Thus, only about 4% of the cases were actually changed from one category to another in this final review.

**Table A3: Final Review of Global Media Freedom Dataset**

|  |  |
| --- | --- |
|  | **Percentage of Total Cases** |
| **Unchanged Cases** | 91.1% |
| **Cases changed from missing to coded** | 4.7% |
| **Cases changed from Imperfectly Free to Free** | .02% |
| **Cases changed from Not Free to Free** | 0% |
| **Cases changed from Free to Imperfectly Free** | 1.8% |
| **Cases changed from Not Free to Imperfectly Free** | 1.5% |
| **Cases changed from Free to Not Free** | .1% |
| **Cases changed from Imperfectly Free to Not Free** | .8% |
| **Total** | 100% |
| **Total cases with categorical changes** | 4.3% |

**Figure A1: The Distribution of *Free*, *Imperfectly Free* and *Not Free* Media Across Regime Type**



# 3. Sources for Coding Global Media Freedom Dataset

For this revised and expanded version of the dataset, coders were instructed to first consult the annual Country Reports on Human Rights, produced by the US Department of State and the annual reports produced by the International Press Institute (based in Vienna), which began tracking media freedom in the 1950s. Other sources were consulted as necessary. Here is a list of the primary sources for the GMFD coding:

1. Country Reports on Human Rights, which the U.S. Department of State began producing in the mid-1970s
2. The archives of the International Press Institute (based in Vienna), which began producing monthly reports on the state of news media in countries around the world in the in 1950s
3. The Inter American Press Association (headquartered in Miami), which began producing annual reports on the state of press freedom in the early 1950s.
4. Freedom House, Freedom of the Press reports
5. Reporters Without Borders reports
6. Committee to Protect Journalists reports
7. Consultations with historians and area experts

Sources used for the coding in each country are listed in the country reports in the *Historical Guide to World Media Freedom: A Country-by-Country Analysis* (Whitten-Woodring and Van Belle 2014).

# 4. Comparison of Global Media Freedom Dataset to Other Measures

In recent years several organizations have begun collecting data on media freedom, the most notable of which are from Reporters Without Borders, the International Research and Exchanges Board (IREX), and Freedom House.

Reporters Without Borders began producing its World Press Freedom Index in 2002. This index ranks about 180 countries from best to worst. These rankings are based on a survey that is sent to people working for NGOs, journalists and human rights activists. Although, Reporters Without Borders has become quite transparent about its methodology for this index (especially post-2012), it only covers recent years. IREX began producing its Media Sustainability Index in 2001. The MSI is aimed at assessing the ability of the media in a given country to serve as a “fourth estate.” The first version of the MSI focused on post-Soviet countries, but more recently, the MSI has covered countries in Africa and Asia. While these reports provide valuable information about the state of news media in many countries, the MSI does not provide comprehensive or historic data.

Freedom House began producing annual Freedom of the Press Reports in 1980 (for 1979) that provided the status (not free, partly free, or free) of both print and broadcast media. In the mid 1990s, Freedom House began to report scores as well as the status for print and broadcast media, but over the years the categories that were scored and distribution of the points for those scores changed repeatedly. In 2001, the Freedom House Freedom of the Press index became much more transparent and consistent with its methodology (for more about this current version of the FOP index, see the main paper). Since both datasets included codes for 2001 and three status categories, we compared these for 2001 and found the correlation to be reasonably high: .864. More than half of the differences (27 out of 53 cases) were cases that the Freedom House codes placed within 5 points of their cut-offs between *Free* (30 or less) and *Partly Fre*e (31-60), and *Partly Free* and *Not Free* (61 and over). Table A1 shows the correlation between the GMFD and the Freedom House FOP data for different time periods.

**Table A4: Correlation Between Global Media Freedom Data and Freedom House Freedom of the Press Data**

|  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  | **Freedom House Freedom of the Press Data** | | | | | | | | | |
| **Global Media Freedom Data** | 1979-1992 Status | 1993-1996  Status | 1993-1996  Score | 1997-2000  Status | 1997-2000 Score | 2001 Status | 2001 Score | 2001-2012 Status | 2001-2012 Score | 1979-2012 Status |
| .748\* | .746\* | -.761\* | .829\* | -.857\* | .864\* | -.893\* | .953\* | -.912\* | .834\* |

\*p<.05

Because the information provided in the Freedom House Freedom of the Press country reports from 2001 to the present is comprehensive and detailed, we used these reports as a primary source for our post-2001 coding. Although the Freedom House FOP is an excellent source of information about the media environments, especially from 2001 forward, it is different from the GMFD in several important ways, which are noted in Table 1 of the main paper.

# 5. Correlates of Media Freedom: The Early Hypotheses and Assumptions

The universal assumption that all states are capable of media freedom is particularly apparent in the publications and the conference or workshop agendas of IGOs and NGOs associated with media freedom. For example, in the introductory comments at the workshop (World Bank, 2008) that led to a volume on the media as watchdog (Norris 2009), the goal of the conference, at least in part, was described as an effort to provide research into the positive value of a free press, particularly for the developing world. This was described as a fundamental part of a broader, more holistic effort to move toward global media freedom by giving leaders and governments evidence that the benefits of free media could justify the costs and risks of altering government and political structures in order to accommodate an independent and open news media.

While it might be reasonable to expect that a group of Western scholars and IGO/NGO officials whose interests are focused on the role of news media in development would agree that global press freedom was a desirable thing, it was telling that not once during the conference and not once in the resulting edited volume did anyone question the belief that all states

could adopt media freedom if only they chose to. Authoritarian government structures and/or a lack of political will in the leadership were presumed to be the only real impediments to the adoption of media freedom. Is that true or might there be some minimum necessary conditions for media freedom? Resolving this question is well beyond the scope of a single study, but it is used here to organize this analysis and subsequent discussion. We consider a wide variety of factors that have been explicitly or implicitly proposed as correlates or causal variables associated with media freedom or press freedom and build and test a multivariate model as an empirical foundation for future study and theorizing. We start with the correlates used in the first empirical studies. We consider the logic of the presumed causal connection and, where possible we extend that logic to bring in what may be more effective indicators.[[3]](#footnote-3)

With limited and primarily cross sectional data, Nixon (1960; 1965) identified several correlates of press freedom.[[4]](#footnote-4) While neither his data nor the statistical methods available at the time allowed a robust exploration of necessary conditions for press freedom, his discussion clearly indicated that he was looking for indications of what kinds of conditions might foster or prevent the existence of press freedom. Most interesting was his expectation that some conditions might make media freedom unsustainable or unattainable. Following Lerner’s (1958) development communication theory, Nixon (1960) hypothesized that wealth, distribution of wealth and literacy were critical to the development and sustainment of media freedom.

Among Nixon’s independent variables wealth was probably the most robust correlate of press freedom. While the predominance of press freedom in wealthy, developed states in his cross section makes it difficult to draw any conclusions from that correlation, it is reasonable to expect that media freedom requires some minimum level of economic prosperity, that the vast majority of the population of a state must attain a level of economic security somewhere above the struggle to survive before the politics of a state can be structured around a free press. It is hard to imagine that people and politicians would be able to engage in anything close to a civil, non-violent and politically literate discourse when starvation and massive deprivation are a norm. Of course wealth at the country level does not necessarily translate to wealth at the individual level. If economic security for the majority is a necessary condition for media freedom, then distribution of wealth or the lack thereof (inequality) should matter. Firstly if the majority of a country needs to have a certain level of income to afford access to news media, income needs to be distributed accordingly. Secondly if the wealth in a given state is highly concentrated, it follows that the wealthy elites might seek to suppress media because concentration of wealth can fuel discontent and news media can potentially be used as a mobilizing force. Thus Hypotheses 1a and 1b.

* H1a: Wealth as measured by gross domestic product per capita is positively related to media freedom
* H1b: Inequality is negatively related to media freedom

There is much confusion regarding the relationship between media freedom and political institutions. Certainly media freedom is associated with democracy, but whether media freedom causes democracy or democracy causes media freedom is unclear. Proponents of media democracy programs (programs that encourage media freedom in non-democracies) argue that media freedom will lead to democracy, others have argued that it is democratic institutions that promote media freedom. Though we have some concerns about the literacy data (these are noted in online appendix *Measurement* and *Results* sections), early scholars (Nixon 1960 and 1965; Lerner 1958) theorized that literacy was important, so we report results for literacy (Models 1A and 2A in Table A8). Earlier studies of press freedom certainly linked it with regime type. For example the International Press Institute defined an authoritarian regime as having “a permanent censorship or a constant and general control of the press,” (IPI 1959, qtd in Nixon 1960). Intuitively, it is difficult to conceptualize a democracy without media freedom and media freedom existing in the absence of democracy, but these scenarios do exist. Figure 1 (in the main paper) depicts the dispersion of cases of free, imperfectly free and not free media across regime types from 1948 to 2012.[[5]](#footnote-5) Clearly most cases of not free media occur in non-democracies and most cases of free media and imperfectly free media occur in democracies. Yet, there are cases of free and imperfectly free media in non-democracies (Mexico 1960-1996; Tanzania 1992-2007; Nepal 1980-1992). There are also cases of not free media in democracies (Columbia 2000-2005; Portugal 1976-1994; Poland 1991-1997; Mauritius 1970-1977; Thailand 1992-1997). Thus, the relationship between regime type and media freedom is complicated.

There is empirical evidence that free media function differently in the context of democratic institutions than they do in authoritarian settings (Whitten-Woodring 2009). For this reason democratic institutions need to be explored as potential correlates of media freedom. Although disentangling this relationship is going to be well beyond this foundational analysis, we begin this process by disaggregating democratic institutions. Since we are focusing here on the causes of media freedom, we need to distinguish the aspect(s) of democracy that promote(s) media freedom from those that depend on it. While there is considerable debate about the characteristics that define democracy, most definitions incorporate free and fair elections, political participation, political competition, and checks and balances on executive power (executive constraints).[[6]](#footnote-6) Arguably media freedom is necessary for free and fair elections and political participation and political competition. Therefore, we propose that these democratic institutions are more likely to be effects of media freedom than causes of it, and we do not include these institutions in our model. However, media freedom is not required for executive constraints. Also known as decision rules, executive constraints are the “extent of institutionalized constraints on the decision-making powers of chief executives,” (Marshall, Gurr and Jaggers, 2010: 28).[[7]](#footnote-7) These constraints are not limited to democracies and come in many forms including legislatures, militaries and judiciaries. A constrained executive will likely have less ability to control the media.

Kellam and Stein (forthcoming) argued that empowered judges and legislators will seek to maintain the checks on the executive’s power, and one mechanism for doing so is to minimize the executive’s control of information by facilitating free or imperfectly free media. Thus we begin to explore the relationship between democratic institutions and media freedom using executive constraints, and we propose that increased executive constraints lead to increased media freedom.

Table A5 shows the breakdown in our sample of democracies and non-democracies by the levels of executive constraints. Although there are no democracies with lower levels of executive constraints, there are non-democracies with high levels of executive constraints, including Guyana 1968-1977 (level 6 executive constraints), Greece 1949-1966 (level 7 executive constraints), South Africa 1948-1991 (level 7 executive constraints), and Egypt 1948-1951 (level 7 executive constraints). Thus, while executive constraints are a characteristic of democracies, they are also present in non-democracies. For this reason, we do not consider executive constraints to be a proxy for democracy; rather we view them as a characteristic that is more prominent in democracies than non-democracies, and one that is likely to promote media freedom. Therefore, Hypothesis 2.

* H2: Executive constraints are positively related to media freedom

**Table A5: Levels of Executive Constraints in Democracies and Non-Democracies, 1950-2011**

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
|  | **Level 1**  **Unlimited Authority** | **Level 2**  **Intermediate**  **Category** | **Level 3**  **Slight to Moderate Limitation** | **Level 4**  **Intermediate Category** | **Level 5**  **Substantial Limitations** | **Level 6 Intermediate**  **Category** | **Level 7**  **Executive Parity or Subordination** |
| **Democracies** | 0 | 0 | 0 | 0 | 384 | 473 | 2161 |
| **Non-Democracies** | 1227 | 653 | 1302 | 175 | 305 | 21 | 68 |
| **Total** | 1227 | 653 | 1302 | 175 | 689 | 494 | 2229 |

Nixon (1960) also hypothesized that increased literacy translates to more people being able to access media, which increases both economic and political participation, which in turn generates more demand for press freedom. In this view, increased literacy sets in motion a virtuous spiral: the more people can read, the more they can access news and information, the more information they have, the more they can participate economically and politically, the more they participate, the more they need access to news and information from a source they can trust, hence, the more they demand an independent press. Therefore, a potential causal mechanism could be an increased demand for news and information brought about by increased literacy. However, while literacy is certainly a prerequisite to the consumption of print media, radio and television are accessible to the illiterate. Thus, while literacy may have been a correlate of media freedom prior to the penetration of broadcast media, this is less likely to be the case now. Even so, in what will essentially serve as an initial, foundational analysis, it is worth testing for this relationship. Thus Hypothesis A.

* HA: Literacy is positively related to media freedom

Conflict, both domestic and international, has been identified as a leading cause of government repression of many types of human rights, including civil rights ([Poe and Tate 1994](#_ENREF_32); [Poe, Tate, and Keith 1999](#_ENREF_33); [Davenport and Armstrong 2004](#_ENREF_12); [Bueno de Mesquita et al. 2005](#_ENREF_6)). Because of the potential for opposition groups to use media for mobilization and the desire of government to control the flow of information in times of crisis, communication sources in general and news media in particular are often the first casualties in civil violence and civil war. Similarly, violence and war between states can lead to concerns about communication as a threat to national security. In a time of crisis, be it domestic or international, information can be used as a weapon, therefore, we expect that governments facing such a threat will seek to control communication and limit media freedom. This leads to two conflict-oriented hypotheses.

* HB: Civil conflict is negatively related to media freedom
* HC: International conflict is negatively related to media freedom

The emergence of new media technology—satellite television, mobile phones, the internet, social media—prompted many to question the ability of government to control media and led to speculation of worldwide freedom of information. Yet, in the U.S. and much of western Europe, the rise of new media comes at the expense of traditional media, especially newspapers, and some see this as a threat to media freedom because newspapers are credited with providing more investigative reporting, thereby fulfilling the idealized watchdog role ([Jones 2009](#_ENREF_21); [Starr 2012](#_ENREF_40)). However, in other parts of the world, especially Asia and Africa, newspaper circulations continue to increase ([Clark 2012](#_ENREF_7)). Still, new media have been credited with facilitating the wave of uprisings in the Middle East and North Africa that began in January of 2011. Clearly, governments that wish to constrain the flow of news and information via digital media face technological challenges and political trade-offs. Citizens can use tools like virtual private networks to get around filters that governments use to censor or block access to undesired information. While some governments have temporarily closed down all internet access by controlling internet service providers (Egypt did this briefly during the Arab Spring), this method of control is politically costly and difficult to sustain because shutting down all internet access creates a barrier to economic and diplomatic activity. Even so, the events of the Arab Spring have also illustrated that new media are vulnerable to old fashioned tactics of threats and intimidation. Consider the restrictions placed on journalists in Bahrain and Syria.[[8]](#footnote-8) Thus, while we know very little about the effect of accessibility to new media on media freedom, certainly these new technologies present new challenges to governments seeking to control the flow of information. Therefore, a hypothesis on the accessibility of new media as a potential correlate of media freedom.

* H3: The accessibility of new media technology is positively related to media freedom

Highlighting the need to empirically analyse the correlates of media freedom, it has been hypothesized that a lack of resources may actually promote media freedom in an authoritarian state. Egorov, Guriev and Sonin (2009) posit that dictators of resource-poor countries are more likely to allow media freedom because independent media provide a mechanism for holding lower level bureaucrats accountable; whereas dictators in resource-rich countries have the ability to keep lower level bureaucrats in line with pay offs, and consequently have little or no need to rely on or tolerate free news media. Of course this assumes that free news media will actually hold the bureaucrats accountable and that authoritarian leaders control the natural resources in question. Egorov, Guriev and Sonin test their argument using oil reserves as a proxy for natural resources and do indeed find that autocratic states with lower proven oil reserves are more likely to have free media. Of course, most of the authoritarian regimes with large oil reserves have long histories of government control of press that may well precede their involvement in significant oil production.[[9]](#footnote-9) Nonetheless, we find it plausible that a free or imperfectly free press may provide an affordable means for a leader or central government to monitor local, regional and/or opposition leaders. Therefore with Hypothesis 8 we seek to test and confirm the predictions of Egorov, Guriev and Sonin.

* HD: Oil Reserves are negatively related to media freedom

This set of hypotheses is neither comprehensive nor exclusive; rather it is a starting point in investigating the correlates of media freedom.

# 5. Measuring the Correlates of Media Freedom

To test the hypothesis that wealth is positively related to media freedom (H1a) we use the gross domestic product (GDP) per capita. This is a standard measure for wealth and economic development used in much of the human rights literature ([Poe and Tate 1994](#_ENREF_32); [Poe, Tate, and Keith 1999](#_ENREF_33); [Davenport and Armstrong 2004](#_ENREF_12); [Bueno de Mesquita et al. 2005](#_ENREF_6)). Specifically we use the RGDPE variable from Penn World Tables version 8 (Feenstra, Inklaar and Timmer 2013), which is the expenditure-side GDP chain series that has been adjusted for purchasing power parity (PPP) to compare standards of living across countries and over time. Because GDP/capita has a trend of exponential growth, we transform this variable by taking a natural log. In our sample GDP/capita ranges from 226 (Nigeria 1995) to 124,720 (Qatar 2011), with a mean of 7996.

While GDP per capita is a good indicator of overall wealth in a given state, it does not capture the distribution of wealth among citizens within a state. Therefore we also include a measure for distribution of wealth. Specifically we use a Gini-Coefficient, which measures income inequality. Theoretically the Gini-Coefficient ranges from 0, where income is equally distributed among all units, to 100, where all of the income goes to one unit. Difference indices use different definitions for income and different units (possibilities include household, employees and individuals). To compare the effects of income inequality across countries and over time, we use the Gini\_Net variable from the Standardized World Income Inequality Database ([Solt 2009](#_ENREF_39)), which is an estimate of the Gini index of inequality based on household disposable income. This dataset is the most comprehensive version Gini index we could find because Solt (2009) uses a custom missing-data algorithm to provide Gini indices that are comparable across countries and over time, but it does not cover the years prior to 1960. This dataset provides multiple estimates for each country/year. For our sample, the mean was about 38.

The literacy rate from the Cross-National Time-Series Data Archive (Banks and Wilson 2014) is used to test Nixon’s hypothesis about literacy and media freedom (HA). This variable is the percentage of people ages 15 and over who can read, and is based on information from the UN Demographic Yearbook. In our evaluation of these data, we noticed that two countries (Cuba and Albania) have literacy rates that exceed 100%. After consulting with the manager of the dataset, we determined that these values were probably the results of estimates based on formulas. We suspect though, that the literacy rates of many developing countries have been inflated, so results based on these data need to be interpreted cautiously. That said, the Cross-National Time-Series dataset covers more country/years for this variable than any other dataset we could find, and we believe there is some consistency in the inflation of literacy rates across countries. In our sample, the literacy rate ranges from 1.4 (Niger 1962) to 110.7 (Albania 2007), with a mean of 69.15.[[10]](#footnote-10)

To test our hypothesis that executive constraints are positively related to media freedom (H2) we use the executive constraints (XCONST) variable from the Polity IV Project ([Marshall, Gurr, and Jaggers 2010](#_ENREF_24)). This variable is a seven-category scale that ranges from 1 (where the executive enjoys “unlimited authority” to 7 (where there exists “executive parity or subordination”). Our sample includes cases for each category of this variable, and the sample mean is 4.3. As shown in Table A5, there are 1227 countries in our sample with level 1 executive constraints, all of which are non-democracies (as defined by Polity IV), including Iraq (1970-2002), the Philippines (1972-1980), and Uzbekistan (1992-2011); there are 2232 countries with level 7 executive constraints, 68 of which are non-democracies, including Zimbabwe (1970-1978) and South Africa (1950-1991), and many democracies, among them Australia (1950-2011), Thailand (1992-2005) and Denmark (1950-2011). We should note that all democracies (as defined by Polity IV) have executive constraints above level 4.

To investigate the effects of civil conflict (HB) and international conflict (HC) on media freedom, we use the Major Episodes of Political Violence (MEPV) and Conflict Regions, 1945-2012 dataset (Marshall 2013). Specifically we use the CIVTOT variable to measure the presence and intensity of civil conflict (including civil and ethnic violence and war), and the INTTOT variable to measure presence and intensity of international conflict and war. To qualify as a major episode of violence or war, there must be a minimum of 500 directly related deaths over the entire episode and the magnitude of each episode is coded 0 to 10, and this score is entered for each related country/year. If there is more than one episode for a given country/year, the impact scores are summed (Marshall 2013). In our sample, the CIVTOT variable ranges from 0 (5,653 cases) to 10 (4 cases including India 1991-1993 and Rwanda 1994), with a mean of .56. The INTTOT variable ranges from 0 (6519 cases) to 9 (Vietnam 1979) with a mean of about .1.

Writing in the 1960s, Nixon (1960, 1965) proposed that media accessibility, in particular newspaper circulation, might be associated with media freedom. The Cross-National Time-Series dataset includes data on newspaper circulation per capita. We used these data in a preliminary analysis to decide which indicator of media accessibility to use. In this preliminary analysis, newspaper circulation did not have a statistically significant effect. Given the changing media landscape, in particular the availability of alternatives to print journalism, we are not convinced that there are theoretical reasons to include newspaper circulation in our model. For this reason and because we suspect newspaper circulation is driven by the literacy rate and economic development, we have not included this variable in the models presented here. Instead we posit that, rather than newspapers, the accessibility of new media technology, specifically the internet might positively influence media freedom (H3). To test this hypothesis we use the percentage of individuals using the internet from the International Telecommunication Union. In our sample the percentage of internet users ranges from less than 2 (Liberia 2000) to 93 (Sweden 2011) with a mean of 20.09.

To test the hypothesis (HD) that oil (or the lack thereof) influences media freedom, we use the proven oil reserves from the BP Statistical Review of World Energy (2014). This variable also shows a trend of exponential growth, so we use a logged version of it. In our sample, proven oil reserves range from 0 (many cases) to 298-thousand million barrels (Venezuela 2011), with a mean of about 7-thousand million barrels.

Table A6 shows the correlation of the variables in our analyses.

**Table A6: Correlation of Variables**

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
|  | Media Freedom | Executive Constraints | GDP/Capita | Civil Conflict | International Conflict | Literacy | Internet |
| Media Freedom | 1 |  |  |  |  |  |  |
| Executive Constraints | .751\* | 1 |  |  |  |  |  |
| GDP/Capita (logged) | .552\* | .519\* | 1 |  |  |  |  |
| Civil Conflict | -.179\* | -.1\* | -.229\* | 1 |  |  |  |
| International Conflict | -.05\* | -.032\* | -.042\* | .124\* | 1 |  |  |
| Literacy | .481\* | .525\* | .732\* | -.157\* | -.021 | 1 |  |
| Internet | .526\* | .454\* | .754\* | -.188\* | -.024 | .484\* | 1 |
| Oil (logged) | -.151\* | -.13\* | .201\* | .107\* | .111\* | .063\* | .032 |

\* p<.05

# 6. Model Specification

Using these variables, we conducted a series of multivariate analyses of the correlates of media freedom. Given the categorical nature of the dependent variable, we use multinomial logistic regression.[[11]](#footnote-11) Since our dependent variable, media freedom is an ordinal variable with three levels (Not Free, Imperfectly Free and Free), ordinal logistic regression seemed like a logical choice, but in our preliminary analyses we found that the parallel regression assumption was violated. Moreover, we have theoretical reasons to believe that although it is possible to put the categories of media freedom in a meaningful order, there are probably very different reasons that lead a country to have Imperfectly Free media rather than Not Free or Free media. For example, some resource-poor authoritarian governments might allow imperfectly free media as a means to keep track of lower level bureaucrats (Egorov, Guriev and Sonin 2009) or to gain legitimacy in the international arena (Whitten-Woodring 2009). In other cases Imperfectly Free media in non-democratic setting might be an indicator that the regime does not have the capacity to control media; evidence of this can be seen in developing countries such as Tanzania, Libya (in 2011 and 2012) and the Maldives. In democratic settings, Imperfectly Free or Not Free media may be the result of third party actors attacking and threatening news media. A case in point is Mexico, which for years was a one-party state with Imperfectly Free media and is now a democracy with Not Free media, largely because of the drug cartels. Another example of this is the Philippines where media are Imperfectly Free, but attacks on journalists carried out by non-government actors largely go unpunished, including the killing of 32 journalists in 2009 in the Maguindanao massacre. Thus we suspect there are different factors influencing a country’s level of media freedom and that the importance of these factors is different for each level of media freedom. Therefore, multinomial logistic regression is the most appropriate method for both methodological and theoretical reasons because it allows us to compare and contrast the effects of each independent variable on each category of media freedom. We considered a variety of specifications with and without regional and year fixed effects. While the results (shown in Table A7) were substantively similar, we decided to report the model with regional and year fixed effects in the paper (Table 2).

**Table A7: Model 1 with and without Fixed Effects**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
|  | **Model 1**  **149 Countries**  **1951-2011** | **Model 1**  **with Regional Fixed Effects** | **Model 1**  **with Year Fixed Effects** | **Model 1 with Regional and Year Fixed Effects** |
| **Imperfectly Free Media** | Coefficient (Standard Error) | | | |
| Past Media Freedom | **5.730\*\*\* (0.204)** | **5.474\*\*\* (0.202)** | **6.177\*\*\* (0.244)** | **5.862\*\*\* (.242)** |
| Executive Constraints | **0.515\*\*\* (0.05)** | **0.549\*\*\* (0.057)** | **0.494\*\*\* (0.052)** | **.531\*\*\* (.057)** |
| Civil Conflict | -0.099 (0.064) | -0.069 (0.06) | -0.126(0.07) | -.105 (.071) |
| International Conflict | **-0.401\*\*\* (0.113)** | **-0.384\*\* (0.141)** | **-.321\*\* (0.117)** | **-.269\* (.116)** |
| GDP/Capita (logged) | -0.123 (0.088) | -0.075(0.125) | -0.163 (0.091) | -.122 (.116) |
| Constant | -4.113\*\*\* (0.648) | -3.582\*\*\* (1.062) | -3.595\*\*\* (0.883) | -3.05\*\* (1.126) |
| **Free Media** | Coefficient (Standard Error) | | | |
| Past Media Freedom | **12.52\*\*\* (0.373)** | **12.23\*\*\* (0.368)** | **13.928\*\*\* (0.505)** | **13.585\*\*\* (.518)** |
| Executive Constraints | **1.012\*\*\* (0.099)** | **1.019\*\*\* (0.102)** | **1.045\*\*\* (0.118)** | **1.047\*\*\* (.119)** |
| Civil Conflict | **-0.403\*\*\* (0.116)** | **-0.341\*\* (0.111)** | **-0.4\*\* (0.13)** | **-.312\* (.136)** |
| International Conflict | 0.018 (0.179) | -0.06 (0.177) | 0.057 (0.194) | .125 (.179) |
| GDP/Capita (logged) | **0.313\* (0.151)** | 0.34(0.196) | .342\*\*\* (0.196) | **.53\* (.238)** |
| Constant | -20.82\*\*\* (1.41) | -19.86\*\*\* (2.025) | -24.18\*\*\* (2.237) | -24.891\*\*\* (2.904) |
| Observations | 6769 | 6769 | 6769 | 6769 |
| Pseudo *R*2 | 0.845 | 0.849 | .86 | .865 |

We posit that non-democracies and democracies have very different reasons for tolerating (or not tolerating) media freedom, so we include a set of separate models for non-democracies and democracies. We chose not to use a multilevel framework because our data are at the country-year level of analysis, and theoretically, while we acknowledge that there will be within country variation in media freedom, we conceptualize media freedom as the ability of at least some sector of the media within a given country to criticize the government so that most citizens have access to this information.

To model the persistence of media freedom and correct for autocorrelation, we include a lagged measure of media freedom on the right side of the equation. Because media freedom can change literally overnight, we use contemporary versions of the independent variables. Additionally, to control for the unspecified effects of each state, we employ robust standard errors, clustering on country identification.

# 7. Results

In our preliminary analyses we found that even with the more comprehensive SWIID data, inequality did not have statistically significant effects on media freedom in any of our models while the effects of the other variables remained substantively similar. Because incorporating these data constrained our sample size, we do not report those results here.

As mentioned earlier, we have concerns regarding the literacy data. Additionally we found that literacy is highly correlated with GDP/capita (.729) and diagnostics showed including both variables made our models unstable. Yet, early scholars (Nixon 1960 and 1965; Lerner 1958) theorized that literacy was important, so we report results for literacy (Models 1A and 2A in Table A8, which also includes Models 1 and 2 from Table 3 in the main paper). The effects of literacy are not robust, but Model 2A predicts that literacy has a statistically significant and negative effect on the likelihood of a having *Free* media over *Not Free* media. Again, given the problems with the literacy data, we are not confident in these results.

**Table A8: The Correlates of Media Freedom**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
|  | **Model 1**  **149 Countries**  **1951-2011** | **Model 1A**  **149 Countries**  **1951-2011** | **Model 2**  **147 Countries**  **2000-2011** | **Model 2A**  **146 Countries**  **2000-2011** |
| ***Imperfectly Free* Media** | **Coefficient (Standard Error)** | | | |
| Past Media Freedom | **5.862\*\*\* (0.242)** | **5.878\*\*\* (0.262)** | **5.485\*\*\* (0.352)** | **5.260\*\*\* (0.395)** |
| Executive Constraints | **0.531\*\*\* (0.0569)** | **0.540\*\*\* (0.0596)** | **0.748\*\*\* (0.0991)** | **0.743\*\*\* (0.111)** |
| Civil Conflict | -0.105 (0.0707) | -0.0997 (0.0720) | -0.188\* (0.0823) | -0.144 (0.0873) |
| International Conflict | **-0.269\* (0.116)** | **-0.269\* (0.120)** | -0.0679 (0.263) | -0.0392 (0.291) |
| GDP/Capita (logged) | -0.122 (0.116) | -0.0664 (0.125) | 0.177 (0.181) | 0.288 (0.242) |
| Literacy Rate | --- | -0.00404 (0.00597) | --- | -0.00995 (0.0121) |
| Internet Penetration | --- | --- | -0.0152 (0.0163) | -0.0106 (0.0185) |
| Oil Reserves (logged) | --- | --- | -0.0868 (0.0989) | -0.101 (0.104) |
| Constant | -3.050\*\* (1.126) | -2.150 (1.125) | -6.503\*\*\* (1.640) | 7.429\*\*\* (2.066) |
| ***Free* Media** | **Coefficient (Standard Error)** | | | |
| Past Media Freedom | **13.58\*\*\* (0.518)** | **14.09\*\*\* (0.625)** | **12.01\*\*\* (0.623)** | **12.43\*\*\* (0.859)** |
| Executive Constraints | **1.047\*\*\* (0.119)** | **1.060\*\*\* (0.119)** | **1.205\*\*\* (0.323)** | **1.109\*\* (0.369)** |
| Civil Conflict | **-0.312\* (0.136)** | **-0.291\* (0.138)** | 0.261 (0.195) | 0.274 (0.199) |
| International Conflict | 0.125 (0.179) | 0.0862 (0.190) | -0.0830 (0.431) | -0.437 (0.476) |
| GDP/Capita (logged) | **0.530\* (0.238)** | **0.903\*\*\* (0.268)** | **0.936\* (0.438)** | **1.553\*\* (0.527)** |
| Literacy Rate | --- | **-0.0238\* (0.0109)** | --- | -0.0235 (0.0198) |
| Internet Penetration | --- | --- | **0.0640\*\* (0.0242)** | **0.0722\*\* (0.0242)** |
| Oil Reserves (logged) | --- | --- | **-0.679\*\*\* (0.158)** | **-0.719\*\*\* (0.172)** |
| Constant | -24.89\*\*\* (2.904) | -26.68\*\*\* (3.304) | -30.12\*\*\* (3.971) | -19.18\*\*\* (4.723) |
| Observations | 6769 | 6282 | 1545 | 1209 |
| Pseudo *R*2 | 0.865 | 0.868 | 0.838 | 0.835 |

These results are from multinomial logistic regressions with regional and year fixed effects and robust standard errors, clustered by country. Multinomial logistic regression reports the coefficients for each independent variable on each outcome of the dependent variable relative to the base outcome of the dependent variable. Here Not Free is the base outcome. The results show the effect of a one unit change in each independent variable on the likelihood that a country will have Imperfectly Free media compared to Not Free media (top rows of the table) and Free media compared to Not Free media (bottom rows of the table). \* p < 0.05, \*\* p < 0.01, \*\*\* p < 0.001

Since we expected the factors that influence media freedom might vary depending on regime type, we conducted a set of analyses separating democracies from non-democracies, the main results of which are presented in Table A9. [[12]](#footnote-12) Because Stata’s multinomial logistic regression results only include the coefficients for independent variables on outcomes of the dependent variable in comparison to a selected outcome of the dependent variable, it is important to consider other possible comparisons. To do so, we employ the listcoef command from the SPost user package (Long and Freese, 2014). In Tables A10 and A11 we report the percent change in the odds of having one level of media freedom compared to another level, given a one-standard deviation increase in a given independent variable, holding all other variables constant. We chose to report the effects of a one-standard deviation increase of each of the independent variables on percent change in the odds of having one level of media freedom compared to another because it is likely that changes in the key independent variables of executive constraints and civil conflict will be incremental. Also the effects of moving from the least level to the highest level of executive constraints on the predicted probability of different levels of media freedom is easier to depict graphically, which is what we do in Figures A1 and A2.

These results (presented in Table A9, A10 and A11) show that in non-democratic settings executive constraints have statistically significant and positive effects on media freedom. Holding other factors constant, a one-standard deviation increase in executive constraints increases the odds that a country will have Free media rather than Not Free media by 361%, Free media rather than Imperfectly Free media by 157%, and Imperfectly Free media rather than Not Free media by 80% (see Table A9). To get a better picture of the effect of executive constraints in non-democracies, Figure A1 depicts a simulation in which executive constraints shift from their minimum to maximum values while all other variables are held at their means. [[13]](#footnote-13) We can see that the predicted probability of Free media remains at 0 regardless of the level of executive constraints. The predicted probability of Imperfectly Free media is close to 0 when executive constraints are minimal, but increases to between .15 and .5 as executive constraints approach maximum values. In contrast, when executive constraints are minimal the predicted probability of Not Free media is close to 1 and decreases to between .55 and .88 as executive constraints increase. Because of limited availability of other data, the sample of non-democracies used to generate Figure A1 actually only has 88 cases of free media, representing about 2.4 % of the 3751 cases in that analysis. Moreover, this figure depicts the predicted values of different types of media freedom from a simulation as executive constraints move from their lowest to their highest values in a non-democratic setting, while all other variables are held constant at their mean or modal values. So given that less than 3% of the cases in the sample have Free media, it is not all that surprising that the figure shows the predicted probability of Free media is basically 0.

In non-democracies, once we controlled for other factors, wealth did not seem to make a difference in media freedom, but in democracies wealth had a statistically significant and positive effect. In democracies, executive constraints only had a significant effect on the chances that a country would have Free media rather than Not Free media. In particular, on average a one-standard deviation increase in GDP/capita increased the odds of a democracy having Free media rather than Imperfectly Free media by 75% and the odds of a democracy having Free media rather than Not Free media by 85% (see Table A10). The magnitude of the effect of GDP is easier to depict graphically. Figure A2 shows a simulation of the predicted probabilities of Not Free, Imperfectly Free and Free media in a democracy as GDP/capita shifts from its minimum to maximum values while all other variables are held at their means. We can see that in this scenario, the predicted probability of Not Free media is remains at 0, but the predicted probability of Imperfectly Free media shifts from between .65 and .9 when GDP/capita is low and decreases to between .1 to .3 as GDP/capita increases to its maximum. In contrast, the probability of Free media is between .1 and .36 when GDP/capita is at its minimum, but increases to between .7 and .9 as GDP/capita increases to its maximum. It is true that the results shown in Model 5 indicate that GDP/Capita does not have a statistically significant effect on the likelihood of Imperfectly Free Media rather than Not-Free Media, but as shown in Table A10 a one standard deviation increase in GDP/Capita does significantly increase the odds of having Free Media over Imperfectly Free Media and Free Media over Not Free Media and significantly decrease the odds of having Not Free Media over Free Media and Imperfectly Free Media over Free Media

Interestingly civil conflict did not appear to influence the level of media freedom in non-democracies, but it did have a statistically significant and negative effect in democratic settings. Controlling for other variables, a one-standard deviation increase in civil conflict decreased the odds of a democracy having Free media over Not Free media by 38% and Free media over Imperfectly Free media by 28%. The findings for international conflict are not robust. It did have a statistically significant and negative effect on the likelihood of a non-democracy having Imperfectly Free media over Not Free media, but otherwise was insignificant.

**Table A9: Regime Type and the Correlates of Media Freedom**

|  |  |  |
| --- | --- | --- |
|  | **Model 5**  **104 Democracies**  **1951-2011** | **Model 6**  **113 Non-Democracies**  **1951-2011** |
| **Imperfectly Free Media** | Coefficient (Standard Error) | |
| Past Media Freedom | **5.758\*\*\* (0.312)** | **5.700\*\*\* (0.271)** |
| Executive Constraints | 0.273 (0.163) | **0.424\*\*\* (0.0852)** |
| Civil Conflict | -0.132 (0.0882) | -0.0918 (0.0821) |
| International Conflict | -0.416 (0.242) | **-0.387\*\* (0.136)** |
| GDP/Capita (logged) | 0.0527 (0.153) | -0.245 (0.134) |
| Constant | -3.846\*\* (1.465) | -2.981\*\* (1.023) |
| **Free Media** | Coefficient (Standard Error) | |
| Past Media Freedom | **12.47\*\*\* (0.430)** | **12.96\*\*\* (0.876)** |
| Executive Constraints | **0.536\* (0.246)** | **1.105\*\*\* (0.263)** |
| Civil Conflict | **-0.404\*\*\* (0.0999)** | -0.570 (0.301) |
| International Conflict | -0.0565 (0.239) | 0.435 (0.287) |
| GDP/Capita (logged) | **0.577\*\* (0.202)** | 0.0832 (0.293) |
| Constant | -19.72\*\*\* (2.533) | -20.33\*\*\* (3.550) |
| Observations | 3018 | 3751 |
| Pseudo *R*2 | 0.810 | 0.729 |

These results are from multinomial logistic regressions with robust standard errors, clustered by country (in parentheses). The base outcome is “Not Free”media, so the coefficients report the effects of the independent variables on the likelihood that a country will have “Free” or” Imperfectly Free” media rather than “Not Free” media. \* p < 0.05, \*\* p < 0.01, \*\*\* p < 0.001

**Table A10: Increasing and Decreasing the Odds of Media Freedom in a Democracy (From Model 5)**

|  |  |  |  |
| --- | --- | --- | --- |
|  | **GDP/capita**  **(logged)** | **Executive**  **Constraints** | **Civil Conflict** |
| “Free” over  “Imperfectly Free” | 75% | --- | -28% |
| “Free” over  “Not Free” | 85% | 46% | -38% |
| “Imperfectly Free” over “Free” | -43% |  | 39% |
| “Imperfectly Free” over  “Not Free” | --- | --- | --- |
| “Not Free” over “Free” | -46% | -32% | 62% |

This table shows the percent change in the odds of having one type of media over another for a one standard deviation increase in each independent variable, holding all other variables constant. (Results for past media freedom are not shown because past media freedom is always associated with increased odds of media freedom; only statistically significant results at *p*<.05 for the remaining variables are shown.)

**Table A11: Increasing and Decreasing the Odds of Media Freedom in a Non-Democracy (From Model 6)**

|  |  |  |
| --- | --- | --- |
|  | **Executive**  **Constraints** | **International**  **Conflict** |
| “Free” over  “Imperfectly Free” | 157% | 75% |
| “Free” over  “Not Free” | 361% | --- |
| “Imperfectly Free” over “Free” | -61% | -43% |
| “Imperfectly Free” over  “Not Free” | 80% | -23% |
| “Not Free” over “Free” | -78% | --- |
| “Not Free” over “Imperfectly Free” | -44% | 30% |

This table shows the percent change in the odds of having one type of media over another for a one standard deviation increase in each independent variable, holding all other variables constant. (Results for past media freedom are not shown because past media freedom is always associated with increased odds of media freedom; only statistically significant results at *p*<.05 for the remaining variables are shown.)

**Figure A2: The Predicted Probability of Different Types of Media as Executive Constraints Increase in a Non-Democracy**



This figure shows the predicted probability of different types of media with 95% confidence intervals from a simulation as Executive Constraints shift from their minimum to maximum values while all other variables are held at their means.

**Figure A3: The Predicted Probabilities of Different Types of Media as GDP/capita Increases in a Democracy**



This figure shows the predicted probability of different types of media with 95% confidence intervals from a simulation as GDP/Capita shifts from its minimum to maximum values while all other variables are held at their means.

Finally, as a last look at the predictive power of our models, we generate confusion matrices for both the democracy analysis and the non-democracy analysis, and in both cases find that there is a high level of agreement between the model’s predicted values and the actual values in the sample.

**Table A12: Confusion Matrix for Model 6 (Non-Democracies)**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Predicted Values of Media Freedom | Actual Values of Media Freedom | | | | |
|  | Not Free | Imperfectly Free | Free | Total |
| Not Free | 3042 | 62 | 1 | 3105 |
| Imperfectly Free | 55 | 495 | 3 | 553 |
| Free | 3 | 6 | 84 | 93 |
| Total | 3100 | 563 | 88 | 3751 |

Percent Correctly Predicted: 96.53%

Percent in Modal Category: 82.64%

Proportional Reduction in Error: 80.03%

Expected PCP: 93.35%

Expected PMC: 70.61%

Expected PRE: 77.38%

**Table A13: Confusion Matrix for Model 5 (Democracies)**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Predicted Values of Media Freedom | Actual Values of Media Freedom | | | | |
|  | Not Free | Imperfectly Free | Free | Total |
| Not Free | 319 | 50 | 3 | 372 |
| Imperfectly Free | 17 | 889 | 37 | 943 |
| Free | 0 | 25 | 1678 | 1703 |
| Total | 336 | 964 | 1718 | 3018 |

Percent Correctly Predicted: 95.63%

Percent in Modal Category: 56.93%

Proportional Reduction in Error: 89.85%

Expected PCP: 91.73%

Expected PMC: 43.85%

Expected PRE: 85.28%

# 8. Additional References

Bates, Stephen. 1995. Realigning Journalism with Democracy: The Hutchins Commission, Its Times and Ours. Washington, D.C. : The Annenberg Washington Program in Communications Policy Studies of Northwestern University.

Bueno de Mesquita, Bruce, George W. Downs, Alastair Smith, and Feryal Marie Cherif. 2005. "Thinking inside the box: A closer look at democracy and human rights." *International Studies Quarterly* no. 49 (3):439-457.

Clark, Rob. 2012. "Bringing the Media in: Newspaper Readership and Human Rights." *Sociological Inquiry* no. doi: 10.1111/j.1475-682X.2012.00417.x.

Commission on Freedom of the Press. 1947. *A Free and Responsible Press A General Report on Mass Communication: Newspapers, Radio, Motion Pictures, Magazines and Books*. Chicago: The University of Chicago Press.

Dahl, Robert A. 1998. *On Democracy*. New Haven & London: Yale University Press.

Davenport, Christian, and David A. Armstrong. 2004. "Democracy and the violation of human rights: a statistical analysis from 1976 to 1996." *American Journal of Political Science* no. 48 (3):538-554.

Freedom House. 2010. *Freedom of the press survey* Freedom House 2010 [cited December 20, 2010 2010]. Available from <http://freedomhouse.org/template.cfm?page=251&year=2010>.

———. 2013. Freedom of the World.

Hagen, Ingunn. 1992. "Democratic communication: media and social participation." In *Democratic communications in the information age*, edited by Janet Wasko and Vincent Mosco. Toronto, Ontario: Garamond Press.

Heston, Alan, Robert Summers, and Bettina Aten. 2011. Penn World Table Version 7.0. edited by Income and Prices at the University of Pennsylvania Center of International Comparisons of Production. Philadelphia.

Kellam, Marisa and Elizabeth A. Stein. Forthcoming. "Silencing Critics: Why and How Presidents Restrict Media Freedom in Democracies."

Jones, Alex S. 2009. *Losing the News: The Future of the News that Feeds Democracy*. Oxford: Oxford University Press.

Mailland, Julien. 2010. "The Semantic Web and Information Flow: A Legal Framework." *North Carolina Journal of Law & Technology* no. 11 (Spring).

Marshall, Monty G., Ted Robert Gurr, and Keith Jaggers. 2014. *Polity IV Users Manual*.

Marshall, Monty G., Keith Jaggers, and Ted Robert Gurr. 2003. Polity IV Project. Center for International Development and Conflict Management at the University of Maryland.

Poe, Steven C., and C. Neal Tate. 1994. "Repression of Human Rights to Personal Integrity in the 1980s: A Global Analysis." *American Political Science Review* no. 88 (4):853-872.

Poe, Steven C., C. Neal Tate, and Linda Camp Keith. 1999. "Repression of the Human Right to Personal Integrity Revisited: A Global Cross-National Study Covering the Years 1976-1993." *International Studies Quarterly* no. 43 (2):291-313.

Price, Monroe, Susan Abbott, and Libby Morgan. 2011. *Measures of Press Freedom and Media Contributions to Development: Evaluating the Evaluators*. New York: Peter Lang Publishing.

Riker, William H. 1982. *Liberalism Against Populism: A Confrontation Between the Theory fo Democracy and the Theory of Social Choice*. San Francisco: W.H. Freeman.

Schumpeter, Joseph A. 1950. *Capitalism, Socialism and Democracy*. New York: Harper & Row.

Solt, Frederick. 2009. "Standardizing the World Income Inequality Database." *Social Science Quarterly* no. 90 (2):231-242.

Starr, Paul. 2012. "An Unexpected Crisis: The News Media in Postindustrial Democracies." *The Journal of Press/Politics* no. 17 (2):234-242.

Tomz, Michael, Jason Wittenberg, and Gary King. 2003. Clarify: Software for Interpreting and Presenting Statistical Results.

1. The number of states in category 4 has shrunk considerably as direct government control has gone by the wayside, probably due to the collapse of the communist block and the rise of new media. Thus, we have collapsed these categories, but have retained the original coding for historical purposes. [↑](#footnote-ref-1)
2. Watergate was used as an example of a scandal that was so detrimental to those in political power that it brought about a change in leadership. [↑](#footnote-ref-2)
3. While it is beyond the scope of this paper to provide an extensive discussion of the all of the potential causal mechanisms, we begin this work here with the aim that these findings will lead to further exploration and theoretical work on the causes of media freedom. [↑](#footnote-ref-3)
4. Nixon (1960) first categorized and compared the press systems in 85 countries and later (Nixon 1965) compared the results from his first study to those of an expanded study, which included 117 countries. [↑](#footnote-ref-4)
5. The media freedom data come from the newly expanded Global Media Freedom Dataset and the democracy data come from the Polity IV Project. More information on these datasets is available in the Measurement and Research Design section below. Our definition of media freedom is discussed in the Defining Media Freedom section above. [↑](#footnote-ref-5)
6. Many definitions also incorporate civil rights, but as with media freedom, there is some debate as whether civil rights are a by-product of democracy or a characteristic of it. For more on defining democracy see Schumpeter ([1950](#_ENREF_37)), Riker ([1982](#_ENREF_35)), Dahl ([1998](#_ENREF_11)), Freedom House ([2013](#_ENREF_18)), and Marshall, Jaggers, and Gurr ([2003](#_ENREF_25)). [↑](#footnote-ref-6)
7. For more on executive constraints or decision rules, see Eckstein and Gurr 1975. [↑](#footnote-ref-7)
8. Additionally, governments can use the same technology that makes the web user friendly to label and filter content and track down users ([Mailland 2010](#_ENREF_22)). [↑](#footnote-ref-8)
9. Non-democratic countries with proved oil reserves that exceed 30,000,000,000 barrels include Nigeria, Libya, Iran, Iraq, Saudi Arabia, Kuwait, United Arab Emirates, and Mexico (considered a non-democracy until 1996). Of those, only Mexico, Kuwait and Nigeria have had periods of free media. [↑](#footnote-ref-9)
10. We ran models including and excluding the cases where the literacy rate exceeded 100%. While the results were substantively the same, we report the models which exclude these cases. [↑](#footnote-ref-10)
11. We did first run the models with ordered logistic regression, but because the Brant test indicated the parallel regression assumption was violated, we needed a more flexible model. [↑](#footnote-ref-11)
12. We operationalized democracy using the Polity dataset. Following the guidelines provided by the Polity IV Project (Marshall 2013), we included all country/year cases with a Polity score of 6 or greater in the Democracies model and all country/year cases with a Polity score of less than 6 in the Non-Democracies model. [↑](#footnote-ref-12)
13. Figures A2 and A3 were generated using Clarify Software ([Tomz, Wittenberg, and King 2003](#_ENREF_41)). [↑](#footnote-ref-13)