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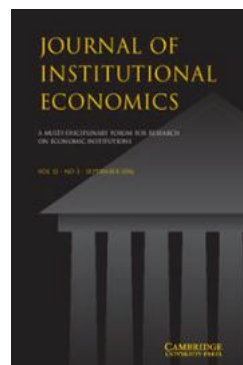
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Journal of Institutional Economics / Volume 12 / Issue 03 / September 2016, pp 603 - 621
DOI: 10.1017/S1744137415000557, Published online: 02 February 2016

Link to this article: http://journals.cambridge.org/abstract_S1744137415000557

How to cite this article:

NABAMITA DUTTA and CLAUDIA R. WILLIAMSON (2016). Can foreign aid free the press?.
Journal of Institutional Economics, 12, pp 603-621 doi:10.1017/S1744137415000557

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Can foreign aid free the press?

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Abstract. Can foreign aid help free the press? Aid may boost press freedom by incentivizing government to reduce media regulations and provide financial support for infrastructure. Alternatively, foreign aid may prevent press freedom by expanding the role of the state and promoting government over private enterprises. We contend that the magnitude of foreign aid's influence is conditional on the existence of democratic checks. Using panel data from 1994 to 2010, we find evidence suggesting that aid significantly increases press freedom in democracies but insignificantly relates to press freedom in autocracies. Collectively, the results suggest that a standard deviation increase in aid to a country at the mean level of democracy increases press freedom by approximately a 1/20th standard deviation. Overall, the findings suggest that donors should be cautious as most aid recipients are not democratic and aid leads to only relatively small marginal improvements in press freedom.

1. Introduction

‘The more I observe the main effects of a free press, the more convinced I am that, in the modern world, freedom of the press is the principal and, so to say, the constitutive element in freedom’.

–Alexis de Tocqueville (1988), *Democracy in America*.

Information is powerful and may carry enough weight to fundamentally change lives. Tocqueville conveys this sentiment several hundred years ago in the role he saw for a free press to underpin other freedoms. A modern research agenda on press freedom and development involving both theoretical and empirical analysis confirms this message. Press freedom – the ability for print, broadcast, and internet-based media to operate independently and freely – is shown to improve economic outcomes, lower corruption, increase political participation, monitor and punish politicians, promote better governance, and increase government accountability and responsiveness (for example, Besley and Burgess, 2002; Besley

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and Prat, 2006; Djankov *et al.*, 2003; Kalenborn and Lessmann, 2013; Sen, 1984, 1999).¹ However, according to 2014 Freedom of the Press Index, only 14 percent of the world's citizens live in countries with a free media (Freedom House, 2014).

Given the importance of press freedom, we seek to understand how a country can free its press. Specifically, we ask can foreign aid buy press freedom? Media development became an interest to international donors after the end of the Cold War. Many attributed the fall of communism, at least to some degree, to the rise of dissenting information spread through various 'underground' media outlets (Arsenault and Powers, 2010). As countries attempted transition from authoritarian socialism to democratic capitalism, donors recognized the importance of a liberated media and contributed aid dollars to help develop independent media outlets (Kumar, 2006). For example, it is argued that Poland was able to change from communist media outlets into independent media organizations, partly due to donor support. Donors provided policy advice, training to staff and journalists (including teachings in economics), investment in infrastructure, and outlined broadcasting rules (Nelson and Susman-Pena, 2012).

Currently, the aid community is recognizing the possibility that aid may be able to contribute to freeing the media sector. For example, the Media Map Project is a recent collaboration by the World Bank and Internews (funded by the Bill & Melinda Gates Foundation) to understand the role media plays in governance and development more generally. Therefore, we empirically evaluate foreign aid's influence on the media sector.

Foreign aid may positively influence press freedom with aid conditionality, direct monetary transfers used to support media infrastructure, or by transferring media specific knowledge such as training journalists and providing policy advice. However, it is also plausible that foreign aid prevents media sector freedom by expanding the role of the state, promoting government over private investments, and further entrenching inefficient regimes.

We contend that the magnitude of foreign aid's influence is conditional on the existence of democratic checks as democracies can minimize the ability for recipient governments to misappropriate aid funds. Democratic countries may be more willing to free their media outlets if donors provide financial incentives to reduce media regulations and barriers to entry. Additionally, aid is less likely to be wasted under democratic checks. Aid, however, may fail to have a similar

1 The other various contexts for which the role of media is studied are in increasing political knowledge (Gentzkow, 2006; Leeson, 2008; Snyder and Strömberg, 2010), in shaping public policy (Spitzer, 1993), in shaping corporate policy (Dyck and Zingales, 2002), in reducing domestic violence (Jensen and Oster, 2009), in reducing socio-political instability (Pal, 2011), in shaping public opinion (Bartels, 1993; Briens and Wattenberg, 1996), and supporting institutional changes (Coyne and Leeson, 2009). In addition, Kalenborn and Lessmann (2013) illustrate that the combined effect from democracy and press freedom is better at fighting corruption.

impact in autocratic countries due to misaligned incentives, corruption, lack of monitoring and accountability, or simply lack of interest.

Our empirical approach utilizes panel data from up to 106 aid receiving countries from 1994 to 2010 to evaluate if aid has any impact, positive or negative, on press freedom. We create an interaction term between aid and democracy to condition aid's influence on press freedom. Instrumental variable (IV) estimations is used to help minimize endogeneity concerns.

In all specifications, we find that aid's coefficient is insignificant, but the coefficient from the aid*democracy interaction term is positive and significant. We calculate the marginal effects of aid with respect to different levels of democracy. These findings suggest that only in democratic countries does foreign aid have a positive and significant effect on press freedom. In autocratic countries, foreign aid insignificantly relates to a free media. Collectively, the results suggest that a standard deviation increase in aid given to a country at the mean level of democracy increases press freedom by approximately a 1/20th standard deviation. Thus, our results suggest that aid leads to only relatively small marginal improvements in press freedom. We provide robustness to our findings by including additional control variables and controlling for endogeneity.

Our results imply that donors should be cautious when attempting to influence press freedom. Although we find a positive association between aid and press freedom in democracies, the size of the effect is economically insignificant. In addition, most aid receiving countries are not democracies, and even if donors target democratic recipients, our results suggest that aid under democratic checks only leads to marginal improvements in press freedom.

2. Conceptual links

Some aid proponents argue for piecemeal, well-targeted goals instead of focusing on aid for economic growth.² In this view, donors may not know how to solve world poverty, but they can promote elimination of government-imposed barriers to entry or increase infrastructure. This argument implies that even if aid cannot buy growth it may be able to support projects that indirectly increase growth and development prospects such as freeing the media sector.³

This line of reasoning is most closely related to foreign aid's impact on political and economic institutions. Some findings conclude that aid has no effect on

² Aid's impact on economic growth is still hotly debated in the literature without reaching a conclusion, arguably because the literature lacks an accepted identification strategy. There is some evidence that suggests that aid relates positively to economic growth; other do not find any evidence of an association; and, finally, some conclude that aid in certain countries can be beneficial. For the most recent work, see Dreher and Langlotz (2015), Dreher *et al.* (2014), Clemens *et al.* (2012), and Rajan and Subramanian (2008).

³ Another channel where foreign aid has a positive effect is in reducing the effects of terrorism (Bandyopadhyay *et al.*, 2010, 2014).

democratization or corruption (Bueno de Mesquita and Smith, 2009; Djankov *et al.*, 2008; Knack, 2004; Rajan and Subramanian, 2007). Other studies find that aid can improve governance (Dunning, 2004; Goldsmith, 2001). Additional works argue that foreign aid's impact is institutionally entrenching rather than institutionally changing (Bueno de Mesquita and Smith, 2010; Frey and Eichenberger, 1994; Kono and Montinola, 2009; Wright, 2009). For example, aid does not have the ability to make a dictatorship into a democracy but it can entrench or even amplify the current institutional path (Dutta *et al.*, 2013).

Similarly, another strand of literature examines the ability for foreign aid to influence economic institutions. The main idea explored here is can aid 'buy' economic freedom (see, Dreher and Gehring 2012, for a review)? Conceptually, foreign aid may positively influence economic freedom through direct monetary transfers, conditionality, and the transfer of knowledge. However, foreign aid can degrade economic institutional quality by expanding the role of the state, promoting government over private investments, and propping up inefficient regimes.

Empirical studies find conflicting evidence. Several conclude that aid does not increase economic freedom and may decrease it (Heckelman and Knack, 2009; Knack, 2001; Young and Sheehan, 2014). Bearce and Tirone (2010) show that aid has no effect on economic freedom before the 1990s but has a positive effect after the Cold War. Dreher and Rupprecht (2007) and Knedlik and Kronthaler (2007) focus on changes in economic freedom and find that International Monetary Fund involvement reduces economic freedom. Boockmann and Dreher (2003) document that the number of World Bank projects increases economic freedom. Dutta and Williamson (2015) attempt to shed light on this ambiguity. They find that aid may improve economic freedom when given to wealthier, economically free, and mature democracies. This suggests that aid responds differently depending on the macroeconomic and institutional context.

Since press freedom can be seen as a subset of political/economic freedom, we build from these previous works to hypothesize how aid can influence press freedom. Specifically, we argue that aid works through three main channels: direct monetary transfer, conditionality, and knowledge transfer. We further contend that the magnitude of these channels is conditional on the existence of democratic checks as democracies provide monitoring to minimize misappropriation of aid funds.

One potential channel for aid to influence the media is through resource allocation. Aid is capable of providing specific resources for specific goals and outcomes (Skarbek and Leeson, 2009). As a result, aid dollars can provide financing and build media-related infrastructure in resource constrained countries. Thus, aid provides direct monetary resources for public investment in media infrastructure and telecommunications. Coyne and Leeson (2004) argue that limited financing options for media supporting infrastructure and training hampers press freedom. Therefore, foreign aid can be used to free the press by

providing resources to build media infrastructure, invest in telecommunications, train staff, managers and journalists, provide access to capital for entrepreneurs, and help to design broadcasting rules that foster competition.

The second mechanism is through aid conditionality. The core idea behind conditionality is to use aid to influence reform (Collier, 1997). Perhaps, the most straightforward way a donor can promote press freedom is essentially 'buying' media reform. An independent media is largely determined by the rules and regulations as outlined by government. Freedom of information, licensing laws, and telecommunications regulations jointly determine the ability of the media sector to contribute valuable and accurate information to the public. Government directly controls barriers to entry as well as sponsoring or owning media and distribution outlets. Therefore, aid can incentivize government officials to reduce media regulations, alter rules and licensing procedures, and minimize barriers to entry, thus allowing for the development of private competitive outlets. In some sense, the use of foreign aid for such purposes has the most chance for success as this only requires the 'stroke of a pen'.

Lastly, instead of providing monetary support or encouragement to free the media, aid can be a useful mechanism to transfer knowledge. Policies can change without official conditionality if the advice given by aid workers encourages political reforms (Boockmann and Dreher, 2003). Some countries may lack expertise and know-how in understanding how to free their media, reduce regulations, provide appropriate infrastructure, and train staff. In this light, aid is seen as a way for donor countries to teach recipient countries how to create a competitive, free and open press by transferring knowledge through technical experts.

Combined, these arguments suggest that aid may contribute to freeing the media sector by influencing any of these channels. However, aid can also have a negative impact on institutions and limit individual freedoms (see, Dreher and Gehring, 2012). As such, foreign aid may negatively impact press freedom. By expanding the role of the state and further entrenching the powers of the elite, the politically powerful may choose not to use aid dollars to increase citizens' rights, including press freedom. In addition, aid tends to promote government over private investments, so aid receiving governments may allocate more funding toward public media ownership. Overall, aid dollars can be stolen, wasted, or mismanaged leading to increases in rent-seeking, inefficiencies, and corruption.

Thus, we contend that the ability and magnitude of aid to work is dependent on the existence of democratic checks. Aid given in the presence of strong, stable democratic institutions is less likely to be stolen or wasted and politicians may feel pressure to abide by aid conditionality terms. Politicians are incentivized by having an additional check on their behavior to use aid funding efficiently – whether providing financing to support press freedom or removing existing barriers. Alternatively, aid given without such checks in place is less likely to be put to good use and can lead to further entrenchment of bad politicians. Overall,

Table 1. Summary statistics

	Observations	Mean	St. Dev.	Min	Max
Press freedom	212	44.26	19.30	4.20	84.40
Aid	212	7.20	11.45	-0.13	109.91
Democracy	212	2.51	6.11	-10.00	10.00
Aid*Democracy	212	18.20	79.42	-458.80	659.44
GDP per capita (log)	212	8.09	1.03	5.86	10.29
Empowerment rights	212	7.33	3.53	0.00	14.00
Growth	212	5.06	3.14	-4.93	20.29
Population growth	212	1.73	0.99	-0.82	4.54
Population (log)	212	16.02	1.61	9.89	20.91
Natural resource rents	212	15.13	17.19	0.00	68.67
School enrollment	126	53.61	25.29	5.07	96.47
Internet users	212	9.66	10.82	0.03	54.87
Child mortality	212	64.86	49.75	4.63	210.98
Urban	212	48.25	21.22	9.03	93.99
UNSC	212	0.06	0.15	0.00	0.50
UN votes with US	212	0.17	0.12	0.00	0.46
UN votes with GB	212	0.41	0.21	0.08	0.98
UN votes with Japan	212	0.41	0.20	0.08	0.95
UN votes with Can	212	0.34	0.16	0.08	0.79
UN votes with Italy	212	0.43	0.22	0.08	1.00
UN votes with France	212	0.42	0.21	0.08	1.00

foreign aid may positively or negatively influence press freedom. In the presence of democratic checks, any negative impact from aid may be avoided and aid may be channeled into productive uses.

3. Data and methodology

Data description

All variables and data sources are described in Appendix 1. The dependent variable is a measure of press freedom capturing independence of the media sector. It is collected from Freedom House (2012) and is the most widely utilized measure given its extensive coverage. The index categorizes the media sector as either 'free', 'partly free', or 'not free', depending on the extent to which the country allows free flow of news and information and the extent of government restrictions on the media sector. It ranges from 0 to 100 with 100 indicating most free.⁴ As shown in Table 1, for our sample, the mean level of press freedom is approximately 44.26 with a standard deviation of 19.3, ranging from 'not free' to 'free' with scores between 4.2 and 84.4.

⁴ We reorder the ranking of the press freedom index for convenience of interpretation.

Our main independent variable of interest is foreign aid. We measure foreign aid with net disbursed official development assistance received by a country as a fraction of gross domestic national income (GNI) (World bank, 2012). We use this version of aid since it is the broadest measure and captures any potential impact aid may have on the media sector. OECD's Credit Reporting System collects sector specific aid, including communication aid; however, it only includes a portion of total commitments. In addition, the quality of aid data is questionable and suffers from fungibility (see, Easterly and Pfutze, 2008). For example, aid earmarked for the communications sector may end up funding education and vice versa (Khilji and Zampelli, 1991; McGillivray and Morrissey, 2000; Pettersson, 2007). Therefore, we use an overall measure of aid to account for possible measurement error and biases. The mean of aid (% GNI) is approximately 7.2 percent with an 11.45 standard deviation and ranges from -0.13 percent (Thailand in 2005) to 110 percent (Liberia in 2010).

Previous work illustrates that aid's effectiveness improves with democratic institutions (see, Dutta *et al.*, 2013). Thus, we use Polity IV's polity2 variable as our measure of democracy. The variable ranges from -10 (total autocratic) to +10 (total democratic) capturing the quality of political institutions (Marshall *et al.*, 2014). The sample mean is 2.51 with a standard deviation of 6.11. In addition to controlling for democracy and aid, we also construct an interaction term, aid*democracy, by multiplying foreign aid and the polity2 score.

We follow existing literature when choosing our control variables (Dreher and Gehring, 2012). As part of our benchmark controls, we include gross domestic product (GDP) per capita, GDP growth, population growth, and a measure of empowerment or human rights. We include GDP per capita since it is one of the major determinants of press freedom (see, Djankov *et al.*, 2003; Dutta and Roy, 2009). GDP growth is included to take into account the current state of development. Population growth is included since an increase in the population may lead to greater pressure on the ruling elite demanding rights to a free media. These controls are from World bank (2012).

We also include an Empowerment Rights Index from the Cingranelli-Richards (CIRI) (Cingranelli and Richards, 2014). The index measures government respect for seven human rights, freedom of foreign and domestic movement, freedom of assembly and association, worker's rights, freedom of religion, freedom of speech, and political participation.⁵ It ranges from 0 to 14 with higher numbers indicating greater government respect for rights. It is reasonable to assume that as governments respect human rights, they will also be more willing to support a free press. Furthermore, as a populace experiences more empowerment, they may also demand more freedoms including access to information.

⁵ Until 2006, the index included only five of the seven human rights. It did not distinguish between domestic and foreign movement and did not include freedom of assembly and association.

Given the availability of the data, we create a panel of up to 106 aid recipient countries from 1994 to 2010. We are limited in our starting point as Freedom House only provides quantitative scores for press freedom from 1994 onwards. We do not view this as problematic since most donors did not focus on press freedom until after the Cold War, and aid is argued to be more effective post-Cold War. We create four time periods using four year averages to smooth out cyclical fluctuations.⁶

Empirical methodology

Our reduced form specification is below:

$$PF_{it} = \beta_0 + \beta_1 PF_{it-1} + \beta_2 Aid_{it} + \beta_3 Democracy_{it} + \beta_4 (Aid * Democracy)_{it} + \sum_{j=1}^J \alpha_j X_{jit} + \beta_6 \theta_t + \varepsilon_{it},$$

where PF_{it} is press freedom for country i in time t . PF_{it-1} is press freedom lagged one period capturing the persistence of the dependent variable.⁷ Aid_{it} is foreign aid inflows for country i in time t . Democracy is polity2 scores discussed above. Aid*democracy is the interaction term. As we are interested in the contemporaneous effect of aid on press freedom, aid, democracy, and the interaction term are included in the current time period. X_{jit} is the matrix of potential determinants of press freedom, θ_t is the vector for period dummies, and ε_{it} is the random error term.

One coefficient of interest is β_2 . If $\beta_2 > 0$ it implies that foreign aid enhances press freedom; $\beta_2 < 0$ suggests otherwise. Our main variable of interest is the coefficient on the interaction term, β_4 . The sign of β_4 indicates if aid can work through democratic channels to influence press freedom. The overall impact on aid is found by estimating the marginal effect, $\frac{\delta PF_{it}}{\delta Aid_{it}} = \hat{\beta}_2 + \hat{\beta}_4 Democracy_{it}$.

Our overall goal is to gain understanding of aid's impact, if any, on press freedom. Identification with respect to foreign aid is a challenge that all studies face. For example, foreign aid can influence different development outcomes like growth or press freedom, but these factors may also determine the extent of foreign aid inflows. In addition, lack of press freedom usually correlates with other development outcomes such as income, growth and human rights concerns. As a result, endogeneity issues can arise out of omitted variable bias.

The appropriate identification strategy is debated in the foreign aid literature (see, Clemens *et al.*, 2012; Dreher and Langlotz, 2015; Dreher *et al.*, 2014). To help mitigate endogeneity concerns and model selection bias, we employ two stage least squares (2SLS) analysis with IV estimation. To externally instrument

⁶ For the last period (2006–2010) we use a five year average instead of a four year average given the span of the dataset.

⁷ We test for the presence of a unit root using the Harris–Tzavalis test. The p -value suggests that the null can be rejected; thus, press freedom is stationary.

for aid, we borrow from the aid-growth literature and use two measures of geopolitical importance, voting in line with major donors in the United Nations General Assembly (UNGA) and temporary membership on the United States Security Council (UNSC).

Our first set of instruments capture bilateral political associations, voting coincidence with major aid donors in the UNGA. Voting patterns that are similar to a potential aid donor could affect aid inflows to a recipient country. For instance, by voting in line with the United States, for example, a developing country could receive more aid from the United States. Previous works indicate that voting similarities with major donors capture donor-recipient pairs that are like-minded, and, therefore, more likely to receive aid (Bjørnskov, 2013; Creasey *et al.*, 2015; Midtgaard *et al.*, 2014). Thus, we use as instruments the share of key votes in the UNGA that are in line with the voting patterns of the United States, Great Britain, Japan, Canada, Italy, or France. Data are collected from Dreher and Sturm, (2012).

The second instrument is a dummy variable representing temporary membership on the UNSC, lagged two periods (Dreher *et al.*, 2011). Prior literature finds that temporary members receive considerable additional aid allocations during their terms on the UNSC (Dreher *et al.*, 2009a; 2009b; Kuziemko and Werker, 2006). For example, Bueno de Mesquita and Smith (2010) find that temporary members experience slower growth rates while serving on the UNSC. They argue this slow growth occurs due to the adverse consequences of receiving increased foreign aid from serving on the UNSC. Others document similar findings where additional aid dollars negatively impact growth due to the political nature of allocation (Bueno de Mesquita and Smith, 2010; Dreher *et al.*, 2014).

Our instruments are arguably excludable but these variables may influence aid effectiveness due to political favoritism (Kilby and Dreher, 2010). For example, aid given as a result of political favoritism may lead to the approval of lower quality projects, deteriorate institutions, and lessen the likelihood of conditions supporting freedom. Therefore, political biases can diminish the effectiveness of aid decreasing the likelihood that aid will support press freedom. As such, these political based instruments generalize the Local Average Treatment Effect (LATE) to represent all aid, not just political based aid. Thus, our estimates may represent a lower bound and understate the effects of overall aid.

Table 2 reports the first stage results from the benchmark regressions in Table 3. Column (1) is the first stage result for the specification only including foreign aid and the control variables. Column (2) is the specification where we introduce the aid*democracy interaction term. In order to instrument for the interaction term, we create additional instruments by multiplying the interaction term times each instrument, thus our specifications are always over-identified.

The first stage results indicate that the suggested thresholds are met with *F*-statistics above 10 and adjusted *R*-squareds well above 0.20. This continues

Table 2. First stage results

Dep. Var:	From table 3:		
	Aid (1)	Aid (2)	Aid*Democracy (2)
UNSC _{t-2}	-1.778 (2.418)	0.640 (1.952)	2.526 (7.389)
UN votes with US	47.719* (27.721)	12.661 (12.935)	-27.984 (53.658)
UN votes with GB	-78.821 (77.996)	-61.194 (84.195)	129.154 (276.621)
UN votes with Japan	-56.681* (29.549)	-17.135 (25.488)	120.118* (70.920)
UN votes with Can	-25.268 (25.734)	-10.858 (14.329)	-7.005 (54.377)
UN votes with Italy	-46.302 (57.029)	0.543 (44.166)	260.836 (163.245)
UN votes with France	174.950 (107.895)	75.758 (91.236)	-523.208 (347.565)
UNSC _{t-2} *Aid*Democracy		-0.125* (0.074)	0.006 (0.342)
UN votes with US*Aid*Democracy		-0.268 (0.197)	-3.373** (1.189)
UN votes with GB*Aid*Democracy		4.441*** (0.748)	-19.888** (6.883)
UN votes with Japan*Aid*Democracy		-0.332 (0.535)	-0.375 (2.140)
UN votes with Can*Aid*Democracy		0.310 (0.233)	3.532* (1.838)
UN votes with Italy*Aid*Democracy		0.135 (1.133)	-24.352*** (5.822)
UN votes with France*Aid*Democracy		-4.092** (1.494)	45.663*** (11.938)
Democracy	-0.024 (0.130)	-0.321** (0.106)	0.453 (0.407)
GDP per capita (log)	-5.364*** (0.669)	-3.985*** (0.397)	3.010** (1.499)
Empowerment rights	1.087** (0.339)	0.693** (0.225)	0.121 (0.758)
Growth	0.007 (0.224)	-0.159 (0.169)	0.400 (0.505)
Population growth	3.153** (1.285)	1.702** (0.513)	1.295 (1.907)
Press freedom _{t-1}	-0.165** (0.071)	-0.068* (0.035)	0.008 (0.131)
Observations	212	212	212
F-statistic	10.66	23.36	39.76
Adj.R-squared	0.47	0.81	0.93

Notes: Country and Period dummies are included. Robust standard errors clustered by country are reported in parentheses. ***, **, and * denote significance at 1%, 5%, and 10%, respectively.

Table 3. Foreign aid, democracy, and press freedom

Dep. Var: Press freedom	(1)	(2)
Aid*Democracy		0.013* (0.007)
Aid	0.326 (0.328)	0.072 (0.046)
Democracy	0.998** (0.327)	0.729** (0.280)
GDP per capita (log)	4.655 (4.441)	4.303 (4.295)
Empowerment rights	1.026** (0.435)	1.174** (0.387)
Growth	-0.007 (0.177)	0.019 (0.152)
Population growth	-2.448 (2.630)	-1.210 (1.238)
Press freedom _{t-1}	0.083 (0.080)	0.050 (0.055)
Observations	212	212
R-squared	0.25	0.34
Number of countries	106	106
Number of instruments	7	14
Hansen J <i>p</i> -value	0.80	0.47
<i>Marginal Effects</i>		
10th percentile		-0.018 (0.081)
90th percentile		0.187*** (0.063)
Mean		0.104** (0.043)

Notes: Country and Period dummies are included. Robust standard errors clustered by country are reported in parentheses. ***, **, and * denote significance at 1%, 5%, and 10%, respectively.

to hold in all specifications, including the estimations reported in Table 4. We do not report the first stage results for Table 4, but note that the *F*-statistics are above 10 and the adjusted *R*-squareds are above 0.20. At the bottom of Tables 3 and 4, we report the Hansen J *p*-values. The insignificance of the *p*-values suggests that over identification restrictions for the instruments have been met. The fact that our instruments are motivated by a solid theoretical argument strengthens the case that the exclusion restrictions are met.

4. Main results

Table 3 presents our main results. Recall, that we instrument aid with UN voting in line with major donors and a UNSC membership dummy variable, lagged two periods. When we include the aid*democracy interaction term in

Table 4. Foreign aid, democracy, and press freedom with additional controls

Dep. Var: Press Freedom	(1)	(2)	(3)	(4)	(5)	(6)
Aid*Democracy	0.013*	0.012*	0.020**	0.013*	0.013*	0.013*
	(0.007)	(0.008)	(0.009)	(0.007)	(0.007)	(0.007)
Aid	0.044	0.077	-0.117	0.063	0.069	0.065
	(0.044)	(0.051)	(0.085)	(0.043)	(0.048)	(0.047)
Democracy	0.710**	0.741**	0.349	0.704**	0.726**	0.746**
	(0.269)	(0.286)	(0.393)	(0.278)	(0.281)	(0.285)
GDP per capita (log)	5.037	4.479	4.661	4.881	4.368	4.041
	(4.588)	(4.355)	(6.796)	(4.310)	(4.479)	(4.207)
Empowerment rights	1.094**	1.172**	1.437**	1.169**	1.175**	1.097**
	(0.411)	(0.386)	(0.463)	(0.390)	(0.387)	(0.378)
Growth	0.002	0.003	-0.544**	0.044	0.018	-0.023
	(0.161)	(0.156)	(0.233)	(0.157)	(0.152)	(0.165)
Population growth	-0.749	-1.224	-0.458	-1.251	-1.230	-0.847
	(1.240)	(1.235)	(1.905)	(1.225)	(1.257)	(1.319)
Press freedom _{t-1}	0.041	0.049	0.015	0.050	0.050	0.047
	(0.054)	(0.055)	(0.059)	(0.054)	(0.054)	(0.053)
Population (log)	11.958					
	(12.969)					
Natural resource rents		-0.026				
		(0.081)				
School enrollment			-0.058			
			(0.158)			
Internet users				-0.042		
				(0.062)		
Child mortality					-0.005	
					(0.045)	
Urban						0.288
						(0.374)
Observations	210	212	100	210	212	210
R-squared	0.347	0.339	0.496	0.334	0.339	0.346
Number of countries	105	106	50	105	106	105
Number of instruments	14	14	14	14	14	14
Hansen J p-value	0.35	0.79	0.68	0.72	0.41	0.71
<i>Marginal Effects</i>						
10th percentile	-0.049	-0.009	-0.254**	-0.030	-0.021	-0.029
	(0.074)	(0.089)	(0.108)	(0.76)	(0.082)	(0.082)
90th percentile	0.162**	0.186***	0.060	0.181***	0.186***	0.186***
	(0.068)	(0.063)	(0.116)	(0.064)	(0.064)	(0.065)
Mean	0.077*	0.107**	-0.067	0.096**	0.101**	0.099**
	(0.043)	(0.044)	(0.087)	(0.041)	(0.045)	(0.043)

Notes: Country and Period dummies are included. Robust standard errors clustered by country are reported in parentheses. ***, **, and * denote significance at 1%, 5%, and 10%, respectively.

the model, we create additional instruments by multiplying the interaction term times each instrument. In all specifications, we include both country and period effects. We report robust standard errors clustered by country. Standard controls

variables included are democracy, GDP per capita, empowerment rights, growth, population growth, and lagged press freedom.

In column (1), we initially do not include the interaction term to test the direct impact of aid on press freedom. Aid's coefficient is positive but insignificant. As expected, both empowerment rights and democracy positively and significantly relate to press freedom.

Column (2) includes the aid*democracy interaction term to test if democracy conditions aid's impact. The coefficient of the interaction term is positive and significant suggesting that democratic checks channel aid to positively influencing press freedom. The coefficient of aid remains positive and insignificant. Since the overall impact of aid on press freedom will depend on the magnitude of both coefficients as well as the strength of democracy versus autocracy, we calculate the marginal effects.

To provide further insight, the marginal effects are reported at the end of the table. They are calculated at the 10th percentile, 90th percentile, and the mean level of democracy, or polity2 scores of -7 , 9 , and 2.5 , respectively. Aid negatively relates to press freedom in autocratic countries at the 10th percentile of democracy, such as Syria, but the impact is insignificant. Aid's marginal impact turns positive and significant for a country at the sample mean of democracy, such as Liberia. For example, holding the democracy score at the mean, a 10 percent increase in aid increases press freedom by about 1.04 units, representing a small marginal increase. As a country becomes more democratic, the impact does become larger. For example, a 10 percent increase in aid to countries at the 90th percentile of democracy, such as India, increases press freedom by about 1.87 units.

The coefficients for both empowerment rights and democracy remain positive and significant with a similar size effect. For example, a one standard deviation increase in either empowerment rights or democracy increases press freedom by about 4.1 units or 4.45 units, respectively. The *R*-squareds suggest we are explaining 25 to 34 percent of the variation in press freedom.

Our results suggest that aid increases press freedom, but only in the presence of democratic checks. The impact from aid becomes larger and more significant as the quality of political institutions improves and nations become more democratic. Collectively, these results suggest that a standard deviation increase in aid given to a country at the mean level of democracy or above increases press freedom by approximately a 1/20th to 1/10th standard deviation, depending on the level of democracy.

5. Robustness analysis

Next, we check the robustness of the aid, democracy results to the inclusion of additional control variables including population, natural resource rents, school enrollment, internet users, child mortality, and urban population.

We include total population (log) and urban population since the overall size of a country and its urbanization is also likely to impact press freedom. Natural resource rents are the sum of rents from a country's natural resources, measured as a percentage of GDP. Countries endowed with larger concentrations of natural resources tend to have lower quality institutions (Djankov *et al.*, 2008). School enrollment measures the percentage that is enrolled in primary education. A more educated citizenry is more likely to demand freedoms including press freedom (Dutta and Roy, 2009). We also control for internet users, which is the number of individuals who have used the Internet in the last 12 months. As more individuals gain access to information, it is likely they will demand more freedom for the media sector. Lastly, we include child mortality to capture the level of healthcare provided in a country. All six additional variables are collected from World bank (2012).

Table 4 presents the results. The regressions do not appear to be sensitive to the inclusion of additional control variables. The interaction term's coefficient remains positive and significant in all six specifications. Aid's coefficient remains insignificant in all six regressions. None of the additional controls are significant. Empowerment rights is positive and significant in all specifications and democracy is positive and significant in all but one specifications.

The size of the coefficients on the interaction term and the marginal effects are comparable to our previous findings, with one exception. According to the marginal effects in regression (3), controlling for school enrollment, aid given to autocratic countries decreases press freedom. For example, a 10 percent increase in aid given to Syria, a representative country at the 10th percentile of democracy, significantly decreases press freedom by about 2.5 units. As a country becomes more democratic, the negative effect from aid begins to diminish. For example, the effect of aid given to a country at the 90th percentile of democracy turns positive but is insignificant.

The marginal effects from the other specifications reported in columns (1), (2), (4), (5), and (6), suggest that aid given to autocracies is negative but insignificant. Aid's impact turns positive and significant when given to countries at the mean level of democracy. The effect of aid on press freedom becomes larger when given to democratic countries at the 90th percentile. Collectively, these results suggest that a one standard deviation increase in aid given to a country with at least a 2.5 democracy score increases press freedom between 0.88 and 2.13 units. This represents a relatively small marginal increase in press freedom, roughly between a 5 to 10 percent standard deviation.

6. Conclusion

Given the economic and political benefits associated with a free media sector, we explore the possibility that foreign aid may be able to 'buy' press freedom. In light of recent findings where aid effectiveness is contingent on a recipient's

institutional environment, we explore this question across democratic versus autocratic countries. Our empirical approach utilizes panel data from 106 aid receiving countries from 1994 to 2010 to evaluate if aid has any impact, positive or negative, on press freedom. We create an interaction term between aid and democracy to condition aid's influence on press freedom.

Our results suggest that aid only has a positive and significant effect when given to democratic countries; however, the size of the effect is relatively small. In most specifications, aid has no impact on press freedom in autocracies. Under democratic institutions, the probability of aid resulting in rent seeking activities is reduced, and instead, aid may boost press freedom by providing financial support and infrastructure. Due to lack of monitoring and accountability, aid fails to have a similar impact in autocratic countries.

We view our results as suggesting that donors should be cautious when attempting to influence press freedom. Donors have expressed interest in media freedom as a means to help a country transition to democratic capitalism. Our results cast doubt on this avenue for foreign aid to promote change since aid is only effective in countries that are already democratic. In addition, our results show a relatively small economic significance with only marginal improvements from aid. In light of our findings and previous literature, we interpret this as suggesting that aid may lead to marginal improvements under the right conditions, but it may not be capable of major institutional shifts.

Acknowledgements

We thank the editors and two anonymous reviewers for helpful comments and suggestions.

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Appendix 1: Data Description

Variable	Description	Source
Press freedom	Freedom House's index of press freedom rating the independence of the media sector based on the extent to which the country allows free flow of news and information. It ranges from 0 to 100 with 100 being the most free.	Freedom House (2012)
Aid	Net disbursements of official development assistance (ODA) received by a country as a fraction of gross domestic national income.	World bank (2012)
Democracy	Measured by polity2 and it ranges from -10 to 10, with 10 representing a strong democracy.	Marshall et al. (2014)
Aid*Democracy	Interaction created from multiplying Aid times Democracy.	
GDP per capita (log)	Log gross domestic product per capita, PPP, 2011 international dollars.	World bank (2012)
Empowerment rights	Index capturing government respect for freedom of foreign and domestic movement, freedom of assembly and association, worker's rights, freedom of religion, freedom of speech and political participation. The index ranges from 0 to 14 with higher numbers indicating greater respect.	Cingranelli and Richards (2014)
Growth	Country's annual growth rate in percentage terms.	World bank (2012)
Population growth	Annual growth of the population in percentage terms.	World bank (2012)
Population (log)	Log of population captures all resident at mid-year estimates.	World bank (2012)
Natural resource rents	Sum of rents from a country's natural resources, measured as a percentage of GDP.	World bank (2012)
School enrollment	Total enrollment in secondary education, as a percentage of the total population.	World bank (2012)
Internet users	Number of individuals who have used the Internet (from any location) in the last 12 months, per 100 individuals.	World bank (2012)
Child mortality	Probability per 1,000 that newborn baby will die before reaching age five, if subject to age-specific mortality rates of the specified year.	World bank (2012)
Urban	Urban population as a percent of total population.	World bank (2012)
UNSC _{t-2}	Dummy variable representing temporary membership on the United Nations Security Council, lagged two periods.	Dreher et al. (2011)
UN votes with US	United Nations key voting in line with the United States	Dreher and Sturm (2012)
UN votes with GB	United Nations key voting in line with Great Britain	Dreher and Sturm (2012)
UN votes with Japan	United Nations key voting in line with Japan	Dreher and Sturm (2012)
UN votes with Can	United Nations key voting in line with Canada	Dreher and Sturm (2012)
UN votes with Italy	United Nations key voting in line with Italy	Dreher and Sturm (2012)
UN votes with France	United Nations key voting in line with France	Dreher and Sturm (2012)