

Aid and Democratization in the Transition Economies

Jac C. Heckelman*

I. INTRODUCTION

There is a growing consensus that aid has not improved economic growth and market institutions among developing nations (Boone 1996, Knack 2001, Collier and Hoeffler 2004, Heckelman and Knack 2008, Rajan and Subramanian 2008). Far less attention has been paid so far to the ability of aid to promote and support democratization.

The effect of foreign aid on democratization is theoretically ambiguous. Many donors devote funds specifically to bolster democratic institutions (Carothers 1999). There can also be an indirect impact from aid to the extent that development aid is successful in increasing education and health (Gomanee, et al. 2003), as these factors have been shown to be correlated with greater levels of democracy (Barro 1996). However, foreign aid can also insulate elites and, by increasing the rent-seeking interests of retaining or obtaining power (Oechlin 2006), actually increase the incentives to consolidate power and limit competition and information (Grossman 1992). Perhaps reflecting these countervailing possibilities, Knack (2004) has found that in a large cross-section of nations, aid was not significantly related to democratic reforms, as captured by changes in the Freedom House index of political rights and civil liberties.

In this study I investigate the effect of aid on democratization but strictly within the transition economies of Eastern Europe and former Soviet Union for two reasons. First, I make use of a different index of democracy, also created by Freedom House, which allows for a more nuanced investigation of democracy by analyzing changes in several distinct components of democracy. Even if aid does not affect a broad index of democracy, it is still possible that aid can have an effect on specific attributes of democracy. For example, Heckelman and Knack (2009) found that while aid does not significantly affect a broad index of economic freedoms which treats every component area of economic

* Reinsch/Pierce Faculty Fellow and Professor of Economics, Wake Forest University, PO Box 7505, Winston-Salem, NC USA 27109; email: heckeljc@wfu.edu

freedoms equally, an alternative hedonic index based on weighting areas by their contribution to growth is positively affected by aid. Implicitly, then, aid must positively affect specific areas but the impact might have been masked by aid's ineffectiveness or harm on other areas.

It would therefore be useful to analyze the underlying components of the Freedom House democracy index to determine if aid does positively contribute to certain democratic institutions while perhaps having no effect or harming others. Unfortunately, Freedom House has only just begun to publish the values of the various categories which go into creation of their political rights and civil liberties indexes. Given that democratic reforms take time to implement and be recognized, more than the two years of data currently available are needed before such a comparison can be made. However, Freedom House has also created an alternative index specific to the transition nations. This alternative index has separate available scores for several distinct democracy categories going back to its inception from 10 years ago, thereby allowing for a more detailed analysis. It is this index I utilize.

Second, although the choice of sample is dictated by Freedom House coverage, there are compelling reasons to investigate the transition nations separately regardless. Upon dissolution of the Soviet empire, these nations had an almost unprecedented opportunity to develop new democratic and economic reforms. While some nations have not changed their inherited institutions much, others have adopted sweeping reform and even been admitted for membership into the European Union, which requires a certain level of democratization and openness. I therefore seek to find if aid, among other factors, can explain the variation in democratic reform among this subset of nations.

There are very few econometric studies that attempt to link aid to changes in a democracy index and the results vary greatly. Djankov et al. (2008) find that aid harms the extent of checks and balances using indexes from the Database of Political Institutions, and also the openness and competitiveness of selecting chief executives, as captured by the Polity Index. Knack (2004) finds no effect from aid on changes to either the Freedom House or Polity index. Goldsmith (2001) reports a small but statistically significant relationship between aid and changes in the 10 year average level of the Freedom House index.

There are several differences in the methodologies of these studies which make comparisons difficult. First, Djankov et al. use aid per GNI whereas Goldsmith uses aid per capita. It could be that a given amount of aid is beneficial in lesser populated countries but has a perverse effect in smaller economies where the additional revenue can have a stronger pull on rent-seeking activities. Yet, Knack found no effect using either variable. Second,

Goldsmith's study compared the average index value in the 1990s to the average value in the 1980s, whereas the other studies extend as far back as the mid 1970s or 1960. Aid may have become more beneficial over time as donors learned from past experiences, changed their goals, came to understand the importance of improving institutions, and felt less need to use aid for strategic purposes in the post-Cold war era. However, Knack still finds aid during just the 1990s to have no effect when comparing the index change from 1990 to 2000. Finally, Goldsmith's sample was limited to the African nations. Aid may not have the same effect in every region.

Similar to these other studies, I relate aid to changes in a democracy index. Still, my analysis differs in several important respects. First, I use an alternative democracy index, as well as separate components of the index to determine if aid has varying effects. Second, as in Knack, I recognize the potential importance of how aid is measured and utilize both aid/GNI and aid/population ratios. Third, I use a more recent time period, from 1997–2007. Finally, I retain a regional focus exclusively on transition nations in Eastern Europe and former Soviet republics.

The only other econometric study I am aware of relating aid specifically to this region is Bhandari et al. (2007). Utilizing pooled time-series data, they found that aid did not significantly affect economic growth among their sample of six East European nations. The focus here is on democracy rather than growth, and includes a much larger sample of 26 transition nations. I find that aid, especially when measured in per capita terms, has been beneficial to democratic reforms.

II. MEASURING DEMOCRACY AMONG THE TRANSITION ECONOMIES

The regional focus here is that of Eastern Europe and former Soviet Union. The newly independent republics of the former Soviet Union have followed divergent paths in their commitment to instituting democratic reforms. In evaluating the future of the Eastern European nations, Bartlett and Hunter (1997, p. 105) argue that 'democratic consolidation requires state institutions that are simultaneously responsive to the needs of individual agents and capable of providing collective goods to society, such as universal law ... [which] guarantees the civil liberties of citizens, protects economic elites from arbitrary seizure of property, and provides a medium through which aggrieved actors can seek redress'. The Freedom House *Nations in Transit* (NIT) democracy index captures many of these aspects.

Similar to the traditional Freedom House democracy index, the NIT index ranks countries on a scale from 1 to 7, where lower values represent a higher

ranking of democratic freedom. The traditional Freedom House democracy index is computed as the average of the political rights and civil liberties indexes. The NIT democracy index is computed as the average of five category indexes covering Civil Society, Electoral Process, Governance, Judicial Framework, and Media Independence.

- **Civil Society**

Assesses the growth of nongovernmental organizations, their organizational capacity and financial sustainability, and the legal and political environment in which they function; the development of free trade unions; and interest group participation in the policy process.

- **Electoral Process**

Examines national executive and legislative elections, electoral processes, the development of multiparty systems, and popular participation in the political process.

- **Governance**

Considers the stability of the governmental system; the authority of legislative bodies; decentralization of power; the responsibilities, election, and management of local governmental bodies; and legislative and executive transparency.

- **Judicial Framework and Independence**

Highlights constitutional reform, human rights protections, criminal code reform, judicial independence, the status of ethnic minority rights, guarantees of equality before the law, treatment of suspects and prisoners, and compliance with judicial decisions.

- **Media Independence**

Addresses the current state of press freedom, including libel laws, harassment of journalists, editorial independence, the emergence of a financially viable private press, and Internet access for private citizens.

Two subsequent changes to the index were made to the first edition published in 1997. Beginning with the 2001 edition, a new category for Corruption was added. Because institutional reform may be slow and takes time to be recognized, in order to have a long enough time period, I use the index values starting in 1997 to allow for a 10 year period of analysis and subsequently do not include Corruption. Also, in 2005 the Governance measure was further

broken up into two separate categories for Local and National Governance. For consistency, the average of these two new categories is used to represent the value for Governance after 2005.¹

Each of these categories is related to the original Freedom House democracy index. The Civil Liberties index is comprised of scores on 15 questions organized into the areas of Freedom of Expression and Belief, Associational and Organization Rights, Rule of Law, and Personal Autonomy and Individual Rights. Many of these questions relate to the NIT categories of Civil Society, Judicial Framework, and Media Independence. The Political Rights index is comprised of scores on 10 questions organized into the areas of Electoral Process, Political Pluralism and Participation, and Functioning of Government. There is a large overlap for the NIT categories of Electoral Process, Governance, and Corruption.

Another slight distinction between the political rights and civil liberties indexes which comprise the traditional Freedom House democracy index and the NIT categories which comprise the new index, is the political rights and civil liberties indexes are strictly integer values whereas the NIT categories incorporate quarter point values between the integers which allow for greater distinction between nations.

III. OVERVIEW OF DEMOCRACY AND AID DATA

The political rights and civil liberties indexes used to create the democracy index Knack (2004) examined goes back to 1972. As such, Knack investigates change in the index over a long time span, from 1975–2000. Given the data limitations of the NIT index, the first year of data begins in 1997 allowing for only an eleven year span for potential reform, from 1997–2007. However, it is important to note Knack's results were invariant when limited to the more recent 1990–2000 period, also representing an eleven year span.

As noted above, Freedom House assigns lower values to represent greater freedom. As is customary in the empirical literature, I reverse the scale so that higher values represent more freedom, and as such a positive change in any index will therefore signal increased freedom. To achieve this, I simply multiply each index score by -1 , so the range now encompasses -1 to -7 , with -1 representing the greatest amount of freedom available.

1. In terms of country coverage, Freedom House includes scores for Yugoslavia from 1998–2003. Beginning with the 2004 index, separate scores are assigned to Serbia, Montenegro and Kosovo. To retain consistency on measurement and matching to the other data compiled for this study, these scores are not included. Otherwise, all of the remaining 26 nations rated in *Nations in Transit* are included here.

AID AND DEMOCRATIZATION IN THE TRANSITION ECONOMIES

Table 1

Summary statistics for democracy categories

	N	Mean	Median	Std. Dev.	Minimum	Maximum
<i>Change, 1997–2007</i>						
Democracy Score	26	0.008	– 0.025	0.791	– 1.825	1.625
Civil Society	26	0.346	0.125	0.813	– 1.500	1.500
Electoral Process	26	– 0.067	– 0.000	1.050	– 3.250	2.000
Governance	26	– 0.058	– 0.188	0.887	– 1.625	1.625
Judicial Framework	26	0.029	– 0.000	0.826	– 1.500	2.000
Media Independence	26	– 0.212	– 0.250	0.830	– 2.000	1.500
<i>Initial, 1997</i>						
Democracy Score	26	– 4.027	– 4.175	1.627	– 6.900	– 1.450
Civil Society	26	– 3.779	– 3.750	1.540	– 7.000	– 1.250
Electoral Process	26	– 3.856	– 3.500	1.757	– 7.000	– 1.250
Governance	26	– 4.288	– 4.500	1.574	– 6.750	– 1.750
Judicial Framework	26	– 4.154	– 4.375	1.654	– 6.750	– 1.500
Media Independence	26	– 4.058	– 4.250	1.751	– 7.000	– 1.250

Table 1 shows that on average democracy did not change very much over this time span, with an average change of only .008. The median change was actually a slight drop (– 0.025), but by still less than the minimal adjustment possible (0.25) in any given category. However this is misleading for several reasons. First, the standard deviation of the change is almost 100 times the mean change, and the range from greatest improvement (Slovakia = +1.625) to worst restriction (Russia = – 1.825) is large. Second, examining the separate categories shows why relying on the average democracy index does not give a true representation of reforms taking place. Improvements in Civil Society were substantial but largely offset by reductions to Media Independence. If each category is indeed equally important to democratic freedom, then democracy has not changed much in total, but the composition of democratic freedoms appears to have changed quite a bit. Civil Society started out the strongest of all the categories in 1997 and showed the greatest improvement as well. Governance began in the worst shape of all the categories, and got even worse on average by 2007.

Aid is measured by the amount of Official Development Assistance (ODA) reported to the OECD Development Assistance Commission and taken from the World Bank World Development Indicators database. ODA consists of grants and loans with a grant component of greater than 25 percent, net of military assistance and current loan repayments. To facilitate comparison across countries, the relative importance of aid can be computed several ways. Knack (2004) finds that aid as a share of national income, relative to government expenditures, or per capita, generates similar results but Heckelman and Knack (2008) report significant differences between regressions using aid/GNI or aid/population to explain market reform. It may be important,

Table 2

Summary statistics for additional variables

	N	Mean	Median	Std. Dev.	Minimum	Maximum
Aid (per capita)	26	42.524	30.377	39.446	5.127	184.943
Aid (% GNI)	26	3.277	1.208	3.936	0.264	13.449
Education (female to male ratio)	25	99.208	99.864	2.738	88.344	103.846
Ethnic fractionalization	25	0.345	0.327	0.174	0.047	0.666
EU member (dummy)	26	0.385	0	0.496	0	1
GDP Growth (annual %)	26	6.062	5.301	2.642	2.725	14.736
Income Inequality (GINI coefficient)	24	33.483	33.581	3.783	27.390	40.770
Initial Real GDP (per capita, log)	26	7.141	7.128	1.056	4.809	9.082
Latitude (Absolute value / 90)	26	0.520	0.511	0.069	0.433	0.667
Life Expectancy (expected lifespan at birth, log)	26	4.240	4.251	0.047	4.142	4.314
Mortality Rate (infants per 1000 births)	26	20.089	14.954	15.447	4.180	63.128
Muslim (ratio to population)	26	0.268	0.066	0.335	0.000	0.872
Population (log)	26	6.855	6.710	0.477	6.146	8.168
Urbanization (ratio to population)	26	0.563	0.562	0.127	0.279	0.744

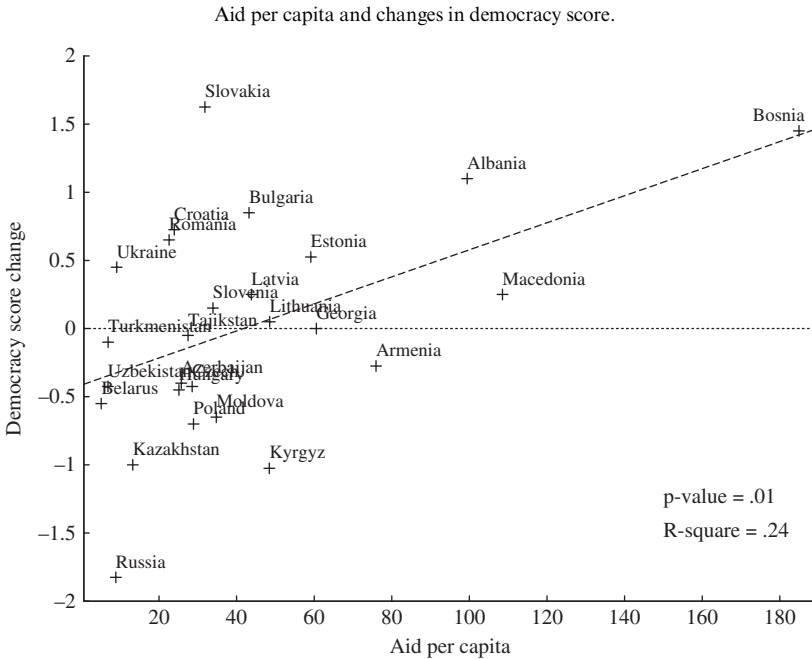
therefore, to compare both of the latter two measures, which are modestly correlated at $\rho = .57$.

As reported in the top two rows of Table 2, the transition nations received on average \$45 per person, or roughly 3% of GNI from 1997–2007.² Belarus received the least amount, both in per capita (\$5) and as percent of GNI (0.26%). Bosnia received by far the most per person at \$184, which is almost double what the next highest recipient received (Macedonia at \$108 per capita). Yet, relative to the size of its economy, Bosnia received less aid (10.6%) than either Kyrgyz Republic (13.4%) or Tajikistan (11.67%). Because of the small sample size, and the potential for outlier effects, I use an alternative estimation technique to check the robustness of the main regression findings estimated by ordinary least squares.

The bivariate relationships between aid and democratic reform are plotted in Figures 1 and 2. Aid per capita appears to strongly correlate with improvements in the overall democracy score, with a reported p-value = .01, explaining 24% of the variation by itself. It might appear as if this bivariate relationship could be driven to a large extent by Bosnia and Russia in particular, as the former received by far the most aid per capita and saw great improvements in its democracy score, whereas the latter received very little aid per capita and saw the worst decline in its democracy score among all the sample nations. Dropping Russia has very little impact on either the p-value or R-square measure, but dropping Bosnia does increase the p-value to .08, and reduces the

2. Beginning in 2005, the OECD-ODA stopped recording aid for EU members, so aid for these nations is averaged through 2004. Russia is also missing aid data after 2004.

Figure 1



variation explained by half. No relationship appears to exist between aid relative to the size of the economy and the democracy score change, despite the potential for Bosnia and Russia to again overly influence a positive correlation. In this case, it might appear that Slovakia and Kyrgyz Republic could be outliers in the opposite direction, unduly dampening the potential to find a larger, statistically significant positive impact from aid. However, dropping either of these nations still does not lead to a p-value anywhere close to statistical significance.

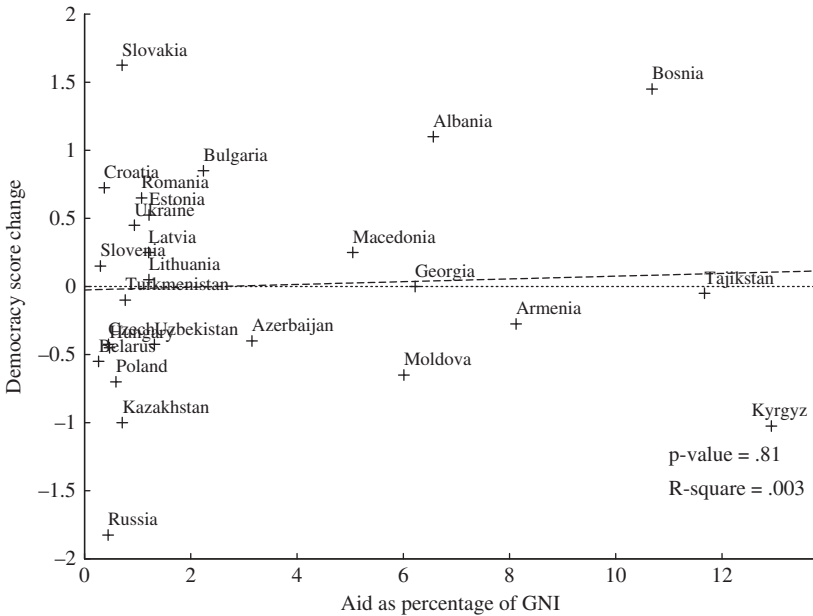
In the next section, regression analysis is used to check the robustness of these findings when controlling for other relevant factors. The results are mostly confirmed. However, I do find some important distinctions when examining the individual democracy categories which comprise the overall democracy score.

IV. SPECIFICATION AND EMPIRICAL RESULTS

Knack's (2004) article is the motivation for this study, which I follow by using regression analysis in an attempt to link aid to changes in a democracy index.

Figure 2

Aid as percentage of GNI and changes in democracy score.



There are several other studies, however, which attempt to explain variation in the *level* of democratic freedoms across countries, independent of aid. Notable examples include Barro (1996) and La Porta et al. (1999).³ Knack's dependent variable is the change in the democracy index over 25 (1975–2000) or 10 (1990–2000) years. Barro uses the average level of the political rights index over 10 year intervals (1965–1974, 1975–1984, 1985–1994). La Porta considered 17 different measures of governance quality and performance, one of which was the political rights index in one specific year (1996). Another important distinction is Knack's sample included only aid-recipient developing nations whereas Barro and La Porta et al. included a mix of both developing and developed nations.

Among the various determinants, Knack finds only the initial level of democracy and the percentage of population that is Muslim (both negative), and regional dummies for Eastern Europe and Latin America/Caribbean (both positive) to be significant factors, whereas neither the level of income, growth rate, illiteracy, urbanization, nor other religious compositions (percentage

3. Bilson (1982) represents an earlier econometric study of democracy, focusing exclusively on the Freedom House civil liberties index.

Protestant and percentage Catholic) are significant. Although most of Knack's explanatory variables were not statistically significant in predicting changes in the Freedom House democracy index, when controlling for these other factors, as noted he found that Eastern European nations were significantly more likely to show improvements in the combined political rights and civil liberties index. However, because Knack's sample began in 1975, most of the transition nations were not part of his study.

Barro finds the lagged democracy value to be positive and significant, and each of his proxies for the standard of living (GDP, infant mortality, and male and female education rates) is also significant. The education variables lead to somewhat curious results in that higher rates for females positively contribute toward democracy, but higher rates for males *reduce* democracy. Barro interprets this as greater inequality between the male to female rates implying the extent of backwardness of a nation. Robustness tests indicate that a variety of additional variables are not important, including life expectancy, urbanization, total population, fractionalization, income inequality or colonial heritage. But in contrast to Knack, Barro finds that among the religious composition variables, only the percentage of Hindu is significant (positively) whereas the percentage of Muslim, Protestant, Eastern, Jewish, and other/none are not individually or even jointly significant, and concludes that 'religious affiliation has little explanatory power' (p.21).

Taken together, Knack's finding that the higher the initial democracy the less positive subsequent change, and Barro's finding that the higher the lagged level of democracy, the higher the subsequent average, implies that countries are becoming more similar in their levels over time but still remain distinct. Or put another way, countries appear to be converging, but have not fully converged.⁴

La Porta et al.'s estimates fall in between. Similar to Barro and in contrast to Knack, they find GNP per capita to positively contribute to democracy but similar to Knack they find the percentage of Muslims to adversely affect democracy, and the percentage of Catholics and percentage of other religions do not matter. Their focus was on the legal origin of institutions and here they find that relative to English origin, German and Scandinavian origins result in a greater respect for political rights, whereas Socialistic legal origins have lower democratic rights. French legal origin is not different than the default English legal origin in their impact on democracy. Finally, although the latitude of a country does not matter, ethno-linguistic fractionalization may, but only when controlling for both GNP and latitude. Their results, though, are difficult to interpret as the demographic variables all represent vastly different years. GNP per capita is averaged over 25 years prior to the 1996 political rights index value,

4. Nieswiadomy and Strazicich (2004) present formal time-series tests of convergence for the Freedom House democracy index.

the religious composition variables are for 1980, and fractionalization is from 1960. It is very unlikely those values stayed fixed over such long periods of time to properly capture their influence on the level of democracy in 1996.

The choice of control variables used here is determined from the studies conducted by Knack (2004), Barro (1996) and La Porta et al. (1999), which represent a mixture of democracy models explaining changes in democracy, the average level of democracy over several years, or the level of democracy in a single year. Due to small sample size issues, the base specification includes only those variables found significant in any of these studies. The list includes initial level of democracy (Knack, Barro),⁵ initial level of GDP (Barro, La Porta et al.), percentage Muslim (Knack, La Porta et al.), and infant mortality rate (Barro).⁶ I do not initially include education (Barro) because of missing data for Turkmenistan, but consider its impact in the robustness tests. Additionally, the percentage of Hindu population, which was found to be significant by Barro, is not applicable to the sample considered here. Neither, of course, are the legal origin variables used by La Porta et al., because all the sample nations possess a Socialistic legal origin. To reflect these ideas more broadly, I include a current EU membership dummy, which captures both a western portion of Eastern Europe regional affect, as well as an institutional component, as membership in the EU requires a stable democracy which respects human rights and the rule of law.⁷ A more specific regional component can be represented by including an Eastern European indicator variable to distinguish from the Asian nations, or a former Soviet Union dummy. Because there is a large degree of overlap among these national groupings, each is considered in separate regressions and then simultaneously included in the same regression. I also allow for the possibility of omitted variable bias by incorporating the remaining, statistically insignificant, variables from the other studies in a series of additional robustness tests. As shown below, the primary findings are generally robust with some important caveats.

5. Because his dependent variable was the average level of the index, Barro used the lagged value of the index to represent initial conditions.
6. Real GDP per capita in 1997 and infant mortality rates averaged over 1997–2006 are taken from World Bank – World Development Indicators database. The percentage of Muslims in 2000 is taken from Barro's *Religion Adherence Data* available on his website at: http://www.economics.harvard.edu/faculty/barro/data_sets_barro.
7. In this sample, only Albania, Bosnia, Croatia, and Macedonia are west of some of the EU members. These nations are all currently candidates for EU membership. Although some current members were admitted only at the end of the sample period (for example Bulgaria and Romania entered in 2007), membership was still at least partially dependent on a stable function democracy which they apparently were considered to have achieved during the latter part of the sample when admitted. The other candidates have not yet been accepted in which case it is less clear if this objective was judged to have been achieved.

1. Base Specification

Estimates from the base specification are presented in Table 3. The first column shows that aid per capita is statistically significant. On average, a one standard deviation increase in aid per capita will result in a .36 increase in the democracy index score. Goldsmith (2001) reports regressions for a sample of African nations where aid per capita is also statistically significant, but with estimated coefficients only one-fifth to one-ninth as large. Column (2) reveals that aid as a percentage of GNI yields a positive coefficient but is not significant. Knack (2004) also found that aid as a percentage of national income (or as a percentage of government expenditures) is not a significant indicator of changes to the original Freedom House democracy index. The contrast in significance between aid per capita and aid as a share of national income has a policy implication for donors. Significance of aid per capita implies that a fixed amount of aid is most beneficial in the least populated countries, where the aid per capita ratio is greatest. Insignificance of aid as a percentage of national income suggests no discernable difference among aid impacts regardless of how it relates to the size of the economy. Thus, an additional dollar of aid appears to

Table 3
Effect of aid on the overall democracy score

Aid measure	Per capita (1)	% of GNI (2)	Per capita (3)	% of GNI (4)	Per capita (5)	% of GNI (6)	Per capita (7)	% of GNI (8)
Constant	0.032 (.99)	-0.395 (.91)	0.220 (.97)	-3.212 (.63)	-1.841 (.48)	-0.846 (.83)	-0.559 (.83)	-0.470 (.90)
Aid	0.009 (.02)	0.071 (.19)	0.017 (.05)	0.126 (.29)	0.016 (.00)	0.080 (.17)	0.010 (.02)	0.088 (.21)
Initial democracy score	-0.436 (.01)	-0.503 (.01)	-0.474 (.09)	-0.537 (.14)	-0.538 (.00)	-0.526 (.02)	-0.459 (0.01)	-0.531 (.01)
Initial real GDP	-0.308 (.34)	-0.230 (.60)	-0.469 (.37)	0.056 (.94)	-0.203 (.50)	0.195 (.66)	-0.252 (.43)	-0.228 (.61)
Muslim	1.042 (.14)	1.256 (.12)	1.358 (.34)	0.979 (.49)	0.184 (.85)	0.927 (.38)	1.010 (.14)	1.332 (.09)
Mortality rate	-0.045 (.07)	-0.061 (.02)	-0.041 (.41)	-0.041 (.34)	-0.016 (.59)	-0.055 (.07)	-0.043 (.07)	-0.066 (.01)
EU member	1.750 (.00)	1.778 (.00)	2.400 (.00)	1.940 (.05)	2.029 (.00)	1.834 (.00)	1.710 (.00)	1.808 (.00)
Estimation method	OLS	OLS	LAD	LAD	OLS	OLS	OLS	OLS
N	26	26	26	26	24	25	26	26
R-square	0.600	0.508			0.623	0.498	0.616	0.504
Sum square residuals	6.269	7.691	9.285	8.671	4.851	7.589	6.007	7.760
Sum absolute residuals			9.320	9.963				

Notes. P-values in parentheses. Dependent variable is change in overall democracy score from 1997–2007. Aid represents the average level from 1997–2007 in first six columns and 1997–2001 in last two columns. Bosnia and Croatia are outliers dropped from the sample in column (5) and Croatia is an outlier dropped from the sample in column (6).

be more beneficial to improving democracy in lesser populated nations, rather than in smaller economies.

Among the control variables, significance of the negative coefficient on the initial level of democracy is evidence for regression to the mean, which coincides with both Knack and Goldsmith. The importance of the standard of living is mixed as the infant mortality rate is indeed significantly inversely correlated with reform, in-line with Barro's findings, but the level of GDP is not. The latter result supports Knack but contrasts both Barro and La Porta et al. The percentage of Muslims is not significant, supporting Barro on the irrelevance of religion, but different from Goldsmith, Knack and La Porta et al. Finally, current EU members saw roughly a one and one-half to two point greater improvement in their democracy score relative to non-EU members.

There may be a concern these results could be driven by outlier effects. In columns (3) and (4) I present estimates from a least absolute deviations (LAD) estimator on median regression (Wooldridge 2002, p.348). By minimizing on the conditional median, rather than mean, undue influence from outliers is limited. Comparing the signs and p-values on the initial democracy score coefficient estimates, evidence for regression to the median is much less than for regression to the mean. Surprisingly, the marginal impact of aid per capita is almost doubled, and remains statistically significant at the 5% level. Aid as a percentage of GNI is still insignificant. The other control variables are not significantly affected, except the EU dummy drops in significance from better than 1% to now only 5% when using aid/GNI.

An alternative approach is to check directly for outlier observations that may unduly influence the estimates by identifying those observations that are considered to be 'leverage points', having more than twice the average leverage on the fitted values (Davidson and MacKinnon 2003, pp. 76–81). For the per capita aid specification, Bosnia and Croatia are identified as potentially influential, and for the GNI ratio aid specification only Croatia exceeds the leverage test value. Dropping these respective observations in Columns (5) and (6) does not affect any of the p-values very much, except that Mortality loses its significance in the aid per capita regression. Most importantly, though, aid per capita remains strongly significant and aid/GNI remains statistically insignificant.

Knack (2004) and Goldsmith (2001) argue that aid allocations may be endogenous to institutional reform. Donors may reward progress with higher levels of aid, or conversely devote more aid in periods of crises which can be reflected in worsening levels of democracy. If so, then estimates from OLS (and LAD) would be biased. Instrumental variables (IV) estimation is the standard approach to deal with endogeneity but is problematic here for several reasons. First, it is difficult to find good instruments for aid and the bias from poor instruments is often worse than the bias from OLS. Knack used infant

mortality, population, and colonial heritage as instruments. These measures, however, were all used by Barro as explanatory variables to predict the level of democracy and therefore may still be correlated with the residual from the equation of interest. Mortality appears in the base specification, population will be used in the robustness tests, and colonial heritage does not have any variation for the transition nations sample used here.⁸ Furthermore, the poor small sample properties of IV estimation (Nelson and Startz 1990) limits its usefulness for this study.

Knack's IV estimates corroborate his OLS estimates, indicating either the poor quality of his instruments or that IV estimation is not necessary because aid is not endogenous to the implementation of democratic reforms. In their analysis of market reforms, Heckelman and Knack (2008) find systematic differences between OLS and IV estimation, but are able to generate very similar results by breaking up aid over the entire period into halves. Arguably, aid during the first half of the period should be exogenous whereas aid during the second half is more likely to be endogenous. Indeed, the sign and significance of the exogenous first half aid matched that of their IV estimates which corrected for endogeneity, and the lack of significance for the second half aid matched the lack of significance of the OLS estimates for the full period aid which did not adjust for potential endogeneity.

These findings are exploited by replacing the average level of aid over the entire period of 1997–2007 by aid from only the first half of the period, 1997–2001, in the final two columns. These estimates should not be plagued by endogeneity, and aid per capita remains significant with roughly the same magnitude as the OLS estimate in column (1), and aid as percentage of GNI remains statistically insignificant, matching the OLS estimate in column (2). Thus it appears aid during the sample period for this set of nations may not be endogenous to changes in the democracy score, in which case the OLS estimates of (1) and (2) are not biased (at least not due to endogeneity).

2. Alternative Specifications

Sensitivity of the main results are tested by incorporating each of the other variables also considered by Knack, Barro and La Porta et al., one at a time in separate regressions. To conserve space and focus on the aid effects, only the estimated coefficients and significance levels for the aid measures are included in Table 4. None of the added variables are found to be significant themselves, but their inclusion does sometimes affect the estimates on aid.

8. A similar problem arises with Goldsmith's choice of instruments as life expectancy, literacy rate, and status as former French colony.

Table 4

Alternative specifications

	N	Aid per capita coefficient	Aid percentage of GNI coefficient
1. Add Education	25	0.009 (.02)	0.081 (.15)
2. Add Fractionalization	26	0.012 (.02)	0.065 (.34)
3. Add Life Expectancy	26	0.004 (.26)	- 0.032 (.62)
4. Add Population	26	0.007 (.11)	0.028 (.62)
5. Add GDP growth	26	0.013 (.00)	0.122 (.04)
6. Add Urbanization	26	0.008 (.03)	0.056 (.36)
7. Add Income Inequality	24	0.010 (.01)	0.057 (.31)
8. Add Latitude	26	0.007 (.05)	0.044 (.43)
9. Replace EU member dummy with Eastern Europe dummy	26	0.010 (.03)	0.099 (.14)
10. Replace EU member dummy with former Soviet Republic dummy	26	0.007 (.11)	0.037 (.58)
11. Include EU member dummy, Eastern Europe dummy and former Soviet Republic dummy	26	0.008 (.04)	0.063 (.31)

Notes. P-values in parentheses. Dependent variable is change in overall democracy category score from 1997–2007. Control variables are same as in Table 3, except rows 9 and 10 where EU member dummy is not included.

First, recall that Barro found opposite results for male and female education rates and argued that greater inequality in education opportunities represented the extent of backwardness of a nation. This is captured by adding the male to female ratio of completion rates for primary and secondary education. As reported in Row 1, adding the education measure does not alter the estimated effects on aid from columns (1) and (2) of Table 3.

Next, a fractionalization measure is added. Alesina et al. (2003) are critical of previous studies which use fractionalization, as fractionalization data are often based on disparate sources from wildly differing years. The measure used here is taken from Campos and Kuzeyev (2007) who develop fractionalization estimates over three separate periods specifically for the transition economies. I use their ethnic fractionalization measure for 1994–1998. As shown in Row 2, the estimated magnitude of aid per capita increases by a third but aid as a percentage of GNI remains insignificant.

The next several variables are taken from World Bank World Development Indicators database. In row 3 I add the log of life expectancy at birth. This has a large effect: the estimated impact of aid per capita is cut in half and no longer

significant. The coefficient on aid per GNI changes signs but still remains insignificant.

Adding the total population in row 4 also makes aid per capita insignificant, just falling below the traditional 10% threshold. Aid measured relative to national income remains insignificant.

Controlling instead for the average annual growth rate in row 5 restores the significance of aid per capita, and increases the relative magnitude as well. This is also the one time when aid as percent of GNI is also significant. A one standard deviation increase to aid relative to GNI (4%) is expected to increase the democracy index score by half a unit.

Neither adding urbanization rates nor a GINI coefficient for income inequality in rows 6 and 7 has any appreciable effect on the estimated impact of aid. Another added variable is the fixed location of a country as measured by the latitude of the capital, taken from La Porta et al. (1999) who collected data from the CIA World Factbook. Adding this variable (row 8) has no impact.

The final adjustments relate to replacing the EU dummy with alternative country groupings. None of the other studies cited used this specific criterion, and if aid assisted democratic reforms through ascension to the EU the dummy could capture part of the positive impact aid (especially as percentage of the economy) could have on democracy. Alternatively, the EU dummy could also be capturing a regional effect. Controlling for other factors, Knack found Eastern European countries to generally show greater democratic reform although his sample of countries differed from those included here. In row 9, the regional impact is tested by replacing the EU dummy with an Eastern European dummy to distinguish from the seven Asian countries.⁹ The estimated coefficient for the Eastern Europe dummy is positive and close to achieving statistical significance when using aid per capita ($p = .12$) and just manages to do so when using aid/GNI (p -value = $.10$), yet is clearly not as strongly correlated to reforms as the EU dummy.¹⁰ There is no appreciable effect on significance of the aid measures themselves. Next, a former Soviet Union dummy is tried which also may represent a mixture of (different) regional and institutional constraints. Its estimated coefficient is negative and also only borders on achieving statistical significance ($p = .13$ and $p = .10$). As shown in row 10, aid per capita just falls below statistical significance and aid/GNI remains statistically insignificant when relying on this measure of country grouping. Lastly, dummies for all three types of country groupings are included at once. Individual t -statistics for the country groupings are difficult to interpret

9. Russia is not classified as part of Asia. Despite the majority of its land mass being in Asia, the vast majority of its population, as well as the central government headquarters, are in Eastern Europe.
10. Indeed, the R-square measures (.42 and .34, for aid/pop and aid/GNI respectively) when using the Eastern Europe dummy drop precipitously relative to using the EU membership dummy.

in this specification due to the large degree of overlap among the various groupings. Note that for this sample all of the EU members are in Eastern Europe, while any country not in Eastern Europe is a former Soviet Union republic. In any event, the three dummies are jointly significant (p -value = .01 for both regressions) and as shown in the final row the addition of the other two country grouping dummies for Eastern Europe and former Soviet Union does not appreciably alter the significance levels of either aid measure, relative to the base model of only including the EU member dummy.¹¹ Aid per capita remains significant while aid/GNI remains insignificant.

Overall the results from the base specification appear fairly robust to inclusion of a large variety of alternative regressors, all the more impressive given the small sample size. In general, it appears aid per capita is a significant and economically meaningful determinant of improvements to democratic freedoms, whereas aid measured relative to GNI is not.

3. *Democracy Categories*

Although the previous findings suggest greater aid per person rather than greater aid per income share leads to increases in democracy, the estimates will still be biased if not all areas of democracy are affected equally. Donor aid may be more beneficial for some areas of democracy than others. In Table 5 this possibility is considered by using the change in each democracy category as the dependent variable in separate regressions. For the aid measure, the first five columns use aid per capita and the last five columns use aid as a percentage of GNI. The control variables are the same as in Table 3.

Aid per capita is found to positively affect each democracy category by roughly equivalent amounts (although the effect on Civil Society is measured with greater imprecision) except for Media Independence. The aid coefficient is still positive for Media Independence but not close to achieving statistical significance.

The second set of estimates reveals that even though aid as a percent of national income was not found to significantly affect changes in the overall democracy scale, greater aid does help improve both Governance and the Judicial Framework. These significant findings for aid/GNI were crowded out by the lack of significance on Civil Society, Electoral Process, and Media Independence.

Thus, greater aid has helped the transition nations improve their Governance and Judicial Framework. Differences between aid per capita and aid as

11. I also ran regressions without any of the country group dummies. Despite the strong significance of the EU dummy, dropping it from the regressions has no effect on the aid coefficient estimates.

Table 5
Effect of aid on the democracy category scores

Democracy measure	Civil Society	Electoral Process	Governance	Judicial Framework	Media Independence	Civil Society	Electoral Process	Governance	Judicial Framework	Media Independence
Constant	3.961 (.21)	- 2.732 (.43)	- 4.347 (.14)	2.038 (.34)	- 0.494 (.89)	4.053 (.35)	3.255 (.47)	- 6.491 (.10)	- 3.028 (.36)	0.098 (.98)
Aid per capita	0.008 (.07)	0.010 (.05)	0.009 (.03)	0.011 (.00)	0.006 (.24)					
Aid percentage of GNI						0.053 (.41)	0.061 (.36)	0.102 (.06)	0.095 (.05)	0.033 (.63)
Initial democracy category score	- 0.209 (0.24)	- 0.509 (0.02)	- 0.636 (.00)	- 0.449 (.00)	- 0.457 (.03)	- 0.255 (.24)	- 0.550 (.02)	- 0.770 (.00)	- 0.565 (.00)	- 0.440 (.06)
Initial real GDP	0.633 (.10)	- 0.690 (.12)	0.100 (.77)	- 0.073 (.00)	- 0.251 (.56)	- 0.613 (.23)	- 0.707 (.21)	0.357 (.41)	0.065 (.87)	- 0.278 (.61)
Muslim	0.942 (.25)	1.696 (.08)	0.941 (.21)	0.736 (.19)	0.916 (.33)	1.186 (.19)	2.061 (.05)	0.957 (.23)	0.915 (.21)	1.167 (.23)
Mortality rate	- 0.052 (.07)	- 0.081 (.02)	- 0.026 (.30)	- 0.029 (.13)	- 0.042 (.19)	- 0.068 (.02)	- 0.102 (.01)	- 0.038 (.14)	- 0.048 (.04)	- 0.054 (.10)
EU member	1.502 (.01)	2.387 (.00)	1.950 (.00)	1.621 (.00)	1.497 (.04)	1.513 (.02)	2.408 (.00)	1.981 (.00)	1.692 (.00)	1.441 (.05)
R-square	0.484	0.583	0.633	0.767	0.342	0.406	0.508	0.601	0.638	0.300
Sum square residuals	8.521	11.507	7.218	3.963	11.332	9.806	13.551	7.840	6.174	12.055

Notes. P-values in parentheses. N = 26. Dependent variable is change in specific democracy category score from 1997-2007.

percentage of GNI imply that more aid in lesser populated countries, as opposed to smaller economies, has also led to positive changes in Civil Society and Electoral Process. Aid, regardless of how measured, has been ineffective in improving Media Independence. Recall from Table 1 that Media Independence showed the most negative changes overall during this period of all the democracy categories.

Among the control variables, the initial democracy category score generated a negative and significant coefficient for each category but was not significant for Civil Society. Each of the other categories shows significant regression to the mean effects.

The initial wealth of the country is generally not a significant factor to explain changes in any of the democratic freedoms. The percentage of Muslims is significant only for electoral process. Higher mortality rates appear to worsen each category of democracy but the estimated coefficients are consistently significant only for Civil Society and Electoral Process, and never significant for Governance. The significance of their impact on Judicial Framework and Media Independence depend on which aid measure is used. Membership in the EU is shown to be a significant factor for every category and is the only variable for which this is true. In this sense, it suggests that joining the EU is the only way to ensure every type of democratic freedom will be enhanced.

V. CONCLUSIONS

In a recent study on a large cross-section of nations, Knack (2004) has shown that foreign aid does not significantly assist progress toward democratization in recipient nations. Focusing on the transition economies, my results confirm his findings when aid is measured relative to the size of the economy, but I do find a significant positive contribution from aid when it is measured relative to the size of the population, as does Goldsmith (2001). Still, the positive marginal impact from aid in Eastern Europe and former Soviet nations is much larger than Goldsmith finds for Africa.

Breakdown of the transition democracy index reveals that even when measured relative to the size of the economy, aid does help bolster certain aspects of democratic reform – namely governance (stability, decentralization, and transparency) and judicial framework (independence, compliance, and human rights protections), although the positive correlations for civil society, electoral process, and media independence are not close to achieving statistical significance. Aid per capita, though, is positively and significantly correlated with reform in all areas of the transition democracy index, except media independence. The lack of effect from aid on the media may be especially troubling given the recent work of Coyne and Leeson (2004) highlighting the

important role of media for economic development among some of the Eastern European nations.

The results here suggest a more positive impact from aid than previously revealed. If donor objectives are to target improvements in governance and the judicial framework specifically, it appears progress toward these goals is indeed occurring. Donors who wish to promote civil society and the electoral process would find their aid dollars appear to go further in less-populated countries. Only to the extent that donors want their aid directed toward developing institutions for making the media more independent, would aid not seem to be of much help.

Many studies have found that aid has not been beneficial for development, but Svensson (1999) and Kosack (2003) present evidence that aid is more effective for this goal among the more democratic nations. The results here are consistent with an indirect impact of aid on growth by helping democracy flourish, and thereby allowing aid to be more productive for growth as well. Aid has been found to have supported reforms in several areas of democracy and therefore may be improving the institutional environment for growth, at least among the transition economies of Eastern Europe and former Soviet republics.

In addition, Ram (2003) found bilateral aid was more effective for improving growth than multilateral aid. This, he argued, was due to potentially conflicting goals among multilateral aid partners. Ram's findings suggest the possibility of such a relationship for democratic reforms as well. Different donors may focus on different aspects of democracy, such as improving the judicial framework or greater media independence. Disaggregated aid by source may help to determine if individual donor goals are being met.

The transition economies were the focus of this study, in part, due to the availability of enough years of data for various categories of a democracy index. Freedom House, which also publishes the traditional democracy index, used in various ways in countless studies, only recently began publishing the rankings for the separate categories which make up the political rights and civil liberties rankings. In the future, when enough years of data on these category scores are available, it would be useful to determine if the positive contribution from aid found for various components of democracy in Eastern Europe and former Soviet Union also benefit certain aspects of democracy in the rest of the world, even if an overall index of democracy is not significantly affected.

REFERENCES

- Alesina, Alberto, Arnaud Devleeschauwer, William Easterly, Sergio Kurlat and Romain Wacziarg (2003). Fractionalization, *Journal of Economic Growth*. 8: 155–94.
- Barro, Robert J. (1996). Democracy and Growth, *Journal of Economic Growth*. 1: 1–27.
- Bartlett, David and Wendy Hunter (1997). Market Structures, Political Institutions, and Democratization: The Latin American and East European Experiences, *Review of International Political Economy*. 4: 87–126.

- Bhandari, Rabindra, Dharmendra Dhakal, Gyan Pradhan and Kamal Upadhyaya (2007). Foreign Aid, FDI and Economic Growth in East European Countries, *Economics Bulletin*. 6(13): 1–9.
- Bilson, John F.O. (1982). Civil Liberty – An Econometric Investigation, *Kyklos*. 35: 94–114.
- Boone, Peter (1996). Politics and the Effectiveness of Foreign Aid, *European Economic Review*. 40: 289–329.
- Campos, Nauro F. and Vitaliy S. Kuzeyev (2007). On the Dynamics of Ethnic Fractionalization, IZA Discussion Paper 2822. Ann Arbor, MI.
- Collier, Paul and Anke Hoeffler (2004). Aid, Policy and Growth in Post-Conflict Societies, *European Economic Review*. 48: 1125–1145.
- Carothers, Thomas (1999). *Aiding Democracy Abroad: The Learning Curve*. Washington, D.C.: Carnegie Endowment for International Peace.
- Coyne, Christopher J. and Peter T. Leeson (2004). Read All About It! Understanding the Role of Media in Economic Development, *Kyklos*. 57: 21–44.
- Davidson, Russell and James G. MacKinnon (2003). *Econometric Theory and Methods*. Oxford: Oxford University Press.
- Djankov, Simeon, Jose G. Montalvo and Marta Reynal-Querol (2008). The Curse of Aid, *Journal of Economic Growth*. 13: 169–194.
- Goldsmith, Arthur A. (2001). Donors, Dictators and Democrats in Africa, *Journal of Modern African Studies*. 39: 411–436.
- Gomance, Karuna, Sourafel Girma and Oliver Morrissey (2003). Aid, Public Spending and Human Welfare: Evidence from Quantile Regressions, CREDIT Research Paper No. 03/13. Nottingham, UK.
- Grossman, Herschel I. (1992). Foreign Aid and Insurrection, *Defense Economics*. 3: 275–288.
- Heckelman, Jac C. and Stephen Knack (2009). Aid, Economic Freedom, and Growth, *Contemporary Economic Policy*. 27: 46–53.
- Heckelman, Jac C. and Stephen Knack (2008). Foreign Aid and Market Liberalizing Reform, *Economica*. 75: 524–548.
- Knack, Stephen (2004). Does Foreign Aid Promote Democracy?, *International Studies Quarterly*. 48: 251–266.
- Knack, Stephen (2001). Aid Dependence and the Quality of Governance, *Southern Economic Journal*. 68: 310–329.
- Kosack, Stephen (2003). Effective Aid: How Democracy Allows Development Aid to Improve the Quality of Life, *World Development*. 31: 1–22.
- LaPorta, Rafael, Florencio Lopez-de-Silanes, Andrei Shleifer and Robert Vishny (1999). The Quality of Government, *Journal of Law, Economics and Organization*. 15: 222–279.
- Nelson, Charles R. and Richard Startz (1990). Some Further Results on the Exact Small Sample Properties of the Instrumental Variables Estimator, *Econometrica*. 58: 967–976.
- Nieswiadomy, Michael L. and Mark C. Strazicich (2004). Are Political Freedoms Converging?, *Economic Inquiry*. 42: 323–340.
- Oechslin, Manuel (2006). Foreign Aid, Political Instability and Economic Growth, IEW Working Paper 310.
- Rajan, Raghuram G. and Arving Subramanian (2008). Aid and Growth: What Does the Cross-Country Evidence Really Show?, *Review of Economics and Statistics*. 90: 643–665.
- Ram, Rati (2003). Roles of Bilateral and Multilateral Aid in Economic Growth of Developing Countries, *Kyklos*. 56: 95–110.
- Svensson, Jakob (1999). Aid, Growth and Democracy, *Economics & Politics*. 11: 275–297.
- Wooldridge, Jeffrey M. (2002). *Econometric Analysis of Cross Section and Panel Data*. Cambridge, MA: MIT Press.

AID AND DEMOCRATIZATION IN THE TRANSITION ECONOMIES

SUMMARY

Past studies have not been supportive of the ability for foreign aid to create increased development and market liberalization. Less attention has been devoted to investigating the role aid has played in fostering democratic institutions. For a sample of 26 nations in Eastern Europe and former Soviet republics, I find more aid per capita is strongly associated with democratic reforms, but less robust is the relationship for aid as a percentage of gross national income. When analyzing various types of democratic freedoms, it appears both measures of aid improve the categories of judicial framework and governance, and aid per capita is also positively correlated with improvements in civil society and electoral process, but aid does not lead to more media independence.