Wealth Inequality and Democracy

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Abstract

Scholars have developed a wide literature on the relationship between land inequality, income inequality, and democracy, with contradictory findings brought about by competing theories and methodologies. However, despite potential theoretical importance, an empirical literature on the impact of wealth inequality on democracy has not developed. We use a panel dataset on billionaire wealth to determine its impact on political freedom and the level of democracy in a system GMM environment. We do not find empirical support for the hypothesis that billionaire wealth damages democracy. This insignificant relationship persists when limiting the sample to only democratic countries and only countries with at least one billionaire.

1 Introduction

The literature on what causes democracies to develop or decay is wide and covers a variety of potential causes and has methodologies as diverse as individual histories, comparative case studies, and large N econometric models. As a microcosm of this broader democratization literature, the literature on the relationship between economic inequality and democracy, itself a subset of modernization theory, is similarly diverse. Studies focus on

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proxies of income inequality, measured using capital's share of income, as in Houle (2009) and Houle (2016), or measures of land inequality as in Midlarsky (1992) and Ziblatt (2008). Additionally, studies may either run econometric tests (Ansell and Samuels, 2010) or focus on particular case studies (Haggard and Kaufman, 2012). Due to this great diversity, the literature is far from settled.

To potentially address some of the concerns in this literature, we use a measurement of wealth inequality developed in Bagchi and Svejnar (2015) and expanded in Bagchi, Curran and Fagerstrom (2019), which is billionaire wealth as a percentage of GDP. We test the effects of wealth inequality, as opposed to income or land inequality, on democratization. Billionaire wealth represents a significantly different variable because it measures the most extreme form of between group inequality, that is, wealth held by the very top of the distribution. Moreover, billionaire wealth better captures the total valuation of the heterogeneous types of assets held by the wealthy, as opposed to more narrowly defined measures such as capital shares or land holdings, which are only specific types of factors of production. Instead, billionaire wealth measures the total value of assets held by billionaires regardless of their form. Our research is attempting to answer the question of what impact wealth, as opposed to income, inequality has on democracy as measured using both aggregate and decomposed Freedom House scores. There is wide variability in the Freedom House measure of democracy. In 2012, there were countries spanning the entire range of possible values, with a "high" of 1 in countries such as Canada, Sweden, Finland, and Norway, and a "low" of 7 in North Korea, Saudi Arabia, and Somalia.[1] As control variables, we attempt to include theoretically relevant variables while also being parsimonious due to the nature of system GMM analysis. Control variables consist of measures of human capital and GDP per capita, as well as the lagged dependent variable, because of

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[1]The Freedom House scale gives countries a 1 if they are the most free and a 7 if they are the least free.

the importance of modernization theory in general (Boix and Stokes, 2003; Epstein *et al.*, 2006) and as it relates to the impact of inequality (Houle, 2016).

For case selection, we form a panel covering the years 1987, 1992, 1996, 2002, 2007, and 2012 using as many countries as possible. The Bagchi and Svejnar (2015) dataset implicitly covers every country, since countries without billionaires have a billionaire wealth to GDP ratio of zero.[2] Although billionaire wealth as a percentage of GDP is not consistent with the Pigou-Dalton transfer principle (Dalton, 1920), this measurement is perfectly suited to this particular research question due to the importance of inter-group inequality (Houle, 2009). It is hard to imagine an inter-group inequality more extreme than that of billionaires and the rest of the populace. As far as variability in the dataset is concerned, the range for billionaire wealth goes from 0 in all countries without a billionaire, such as Costa Rica, Zambia, or Vietnam, to a value of 69.9 percent in Belize. Inherited wealth inequality has a smaller spread, from 0 in countries including New Zealand, Norway, and St. Kitts and Nevis, to 16.4 percent in Iceland in 2007. Five year gaps are acceptable due to the persistence of prior regime type. Additionally, system GMM is the best method of analysis in small-T, large-N environments. We elect not to only study cases of transition because looking only at cases where inequality may have led to transitions or failed consolidations ignores too many possible null cases, and would also greatly restrict the sample size in this study. Finally, since all relevant variables can be given in quantitative fashions, an econometric model is acceptable, appropriate, and not outside the established literature, as Houle (2016) also uses system GMM for several of his regressions. Our results indicate that billionaire wealth does not impact levels of democracy either in aggregate, amongst countries with at least one billionaire, or in already free countries.

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[2] As a robustness test, we will run the same regressions when only using countries that have at least one billionaire, as in Bagchi *et al.* (2019).

2 Theoretical Mechanisms

As with any regression analysis, proper variables and controls are needed in order to understand the impact that wealth inequality has on levels of political freedom. To this end, variables are selected that are expected to have a significant impact on the levels of political freedom in any given country. In order to understand what might represent a breakdown of the model, it is necessary to discuss the expected results before examining the empirical results themselves.

2.1 Expected Impact of Billionaire Wealth on Levels of Political Freedom

Inequality either enters into the equation as a determinant of democracy as a structural factor linked to modernization theory, or as a factor impacting agents through Median Voter Theorem. In terms of Median Voter Theorem, it impacts democracy at the bottom of the income distribution due to popular demands for democracy, and at the top of the income distribution through the desire of elites to capture the political system. *A priori*, the effect of billionaire wealth on levels of democracy should be ambiguous. If billionaires typically only arise as countries reach certain thresholds of development, then we may expect that the presence of billionaires may help transitions into democracy by signaling a high level of economic development. However, this may be complicated by different kinds of billionaire wealth. Billionaire wealth held by second and third generation billionaires is less useful for signaling development, as it may be a better proxy for low social mobility than for wealth inequality in aggregate. Moreover, billionaire wealth that is the result of political connections is unlikely to be a useful signal of economic modernization, as it more accurately represents not only the disparity between the rich and the poor, but also shows the ability of political elites to enrich themselves at the expense of the rest of society. Therefore, modernization theory can only be used to hypothesize the effect of

overall billionaire wealth. We expect the effect of billionaire wealth on levels of democracy to be ambiguous in the overall sample, but that this effect is likely to become more strongly negative as we shift the analysis to inherited billionaire wealth and politically connected billionaire wealth.

2.1.1 Inequality as a Structural Determinant of Democratization

The argument that inequality is a structural determinant of democratization focuses on how inequality affects and is affected by social, and economic development, and how those factors then impact the development of political institutions. In the work of Ansell and Samuels (2010), the authors argue that the role of inequality in democratization is as a byproduct of economic development. In their argument, as economies modernize, they are more likely to become democratic. However, Ansell and Samuels (2010) hypothesize that landholding equality will increase democratization. As landholding becomes more equal, formerly marginalized groups who now have access to property begin to demand protection from expropriation by political elites. This is a structural impact of inequality because it argues that land holding equality fundamentally changes the way that formerly marginalized groups are able to engage and grapple with the state. As evidence of their theory, they construct a mathematical model of their general argument to show the different effects of income and land inequality, and then test the hypothesis using a wide variety of models and estimation techniques. The authors find support for their hypothesis, that is, that landholding inequality reduces democracy and income inequality increases it. One argument they stress heavily throughout their paper is that political agent models of democratization and inequality relying on Median Voter Theory should only apply to existing democracies.

In support of the importance of landholding equality, Karl (2000) argues that the type of crops grown in Latin American countries, that is, sugar, tobacco, and cotton,

have economies of scale such that large property owners will be economically advantaged, whereas corn and wheat in North American lack such economies of scale, generating more equal landholding. This structural inequality of land scale will generate an elite in Latin America that is more able to to maintain repressive political institutions, or, in the case of already existing democracies, will generate an elite that is more able to influence legislation.[3] Landholding inequality also plays a role in modernization theory because more unequal holding of land slows down economic development (Easterly, 2007). Landholding inequality hinders democratization by preventing economic modernization and development. As will be explained more later, this supports the argument in Houle (2009) that inequality weakens consolidation but not transition.

Curiously, the other paper that looks at inequality as a structural determinant hypothesizes the opposite relationship between landholding inequality and democratization. Using Athens as his baseline case, Midlarsky (1992) argues that it is economic development causing inequality in landholding and therefore social stratification that leads to the political development of democracy. As societies become stratified, the wealthy are more likely to demand increased political rights, as was the case with the Solonic reforms. While these early reforms may have decreased equal political representation, they moved politics beyond the clan or tribe and placed Athens on the path to further reforms which made Athens more democratic. Midlarsky (1992) also argues that England and Sweden followed this same developmental path, whereas the United States' landholding inequality sparked democratic revolution. However, where the author makes a modernization and therefore structural argument is that landholding inequality leads to urbanization due to population pressures. As urbanization spreads, it spurs trade, economic development, and finally,

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[3]The ability of the elite to influence legislation due to inequality is more of a political agency factor, but the other thrust of the paper is about how landholding inequality generates class structures inimical to democratic development, it is therefore democratic transition that is structurally impacted and consolidation which is impacted by agency in this paper.

democracy. To test this inequality as the driver of modernization theory, he uses a measure of freedom of elections developed by Freedom House as the dependent variable in his model. As controls, the author uses land inequality, income inequality, age of the polity, agricultural density, deaths from political violence, percent in agriculture, and GDP per capita as independent variables to test transitions into democracy from 1973-1987. First, he applies the model to all countries and then to countries with increasing cutoffs of percent of the population involved in agriculture. He finds that land inequality does increase political rights, especially for underdeveloped countries. Inequality is therefore important at the very beginning of democratization by offering social stratification and overcoming tribes and hereditary political tribalism. Being an earlier paper in this literature, the author does not attempt to refute the Median Voter Theorem relating inequality and democratization.

The structural models of inequality are therefore concerned with transitions from autocracy into democracy, and are not particularly concerned with democratic collapse. This makes sense, as modernization theory is primarily concerned with the transition into democracy, and this argument relates more to modernization theory than does the political agency argument. For this school, billionaire wealth is likely to increase democratization because countries will have more billionaires as they modernize.

2.1.2 Inequality as a Factor Impacting the Decision Making of Political Agents

The theories behind the role of inequality as a factor impacting the decision making and demands of political agents can be represented most broadly in the following manner. If democracy allows for voters to vote for economic redistribution, then forward-looking voters should favor democracy as inequality rises because they can use democratic governance to redistribute wealth away from the elites and towards themselves (Krieckhaus et al., 2014). Such forward-looking voters are likely to support democracy especially if they

themselves have lower incomes, or if they value the well being of those with lower incomes. However, if voters are retrospective and view inequality as high because of the failure of democratic governments, then they may be more likely to oppose democracy. Krieckhaus *et al.* (2014) argue that in a multilevel model of both country and individual attitudes towards democracy in existing democracies, higher levels of inequality erode popular support for democratic governance, while education has a positive effect. Moreover, the negative effect of inequality exists for both wealthy and poor voters, indicating that poor voters are retrospective and believe that democratic governments cannot halt inequality. Instead, poor voters view democracy as an institution which has failed to stop rising inequality. By contrast, wealthy voters are prospective, that is, they may be fearful that democratic governments can be used to expropriate their property.

This theory of voter attitudes towards democracy runs counter, in part, to Acemoglu and Robinson (2006), who argue through Median Voter Theory that the relationship between democracy and inequality is an inverted U. As inequality goes from low to moderate levels, democracy increases, but falls back off when inequality reaches very high levels. The authors hypothesize this relationship due to the argument that the poor will support democracy as a tool to redistribute wealth away from the elite and towards themselves. However, past some threshold, the cost to elites of potential redistribution is too high. Because elites own a preponderance of the resources due to high inequality, they will be able to use repression to oppose democratization and redistribution focused policies. The voter preference theory of Acemoglu and Robinson (2006) is also challenged by Kaufman (2009), who argues that high and rising inequality in Latin America and the United States have not caused backslides nor blocked transitions over the period 1980-2006; in fact, the only backslides were in relatively equal countries such as Venezuela. Particularly relevant to our paper, the author also mentions that the Gini index can be misleading because it does

not show which income groups per se are doing well, and land inequality is less relevant as economies diversify.

One of the more novel investigations of how landholding inequality impacts political decision making is Ziblatt (2008). This study looks at the impact of land inequality on one particular vote in the Prussian parliament which would have expanded suffrage. By focusing on parliament members, this paper certainly takes a political agency approach. According to the author, structural factors are insufficient in explaining why Prussia failed to democratize, as it met most of the modernization thresholds at the time. While this paper mainly applies to Prussia, other literature found that inequality in the holding of land has blocked democratic transitions in other countries including the US and those in Latin America. When understanding why suffrage is expanded, it is important to acknowledge that pre-democratic elites are not monolithic and will use suffrage expansion to win political points by expanding the scope of suffrage to more voters. In the model Ziblatt (2008) constructs, increased landholding inequality in a constituency decreases the likelihood that the representative would vote in favor of the expansion of suffrage, and it also makes it more likely that the party which most opposed suffrage would be elected. Interestingly,the results are non-linear. Opposition to suffrage increases quickly when inequality is low and moves slightly higher and increases quickly again when inequality is high and becomes even larger. However, when inequality is middling, increases do not change the likelihood of opposition to the expansion of suffrage very much. The author argues that elites in politics are not monolithic, and that intra-elite competition for votes may explain why they support or oppose suffrage. Elite competition for votes via suffrage expansion is also tested by seeing how their vote shares would have changed under the expansion or reform of suffrage, since the Prussian three tier suffrage system was in place at the state level and not the national level. In this way, the author argues that elites will oppose democracy if

they do not expect to win electoral competitions under democracy; this thesis is remarkably different from the Median Voter Theorem, since it can be applied to transitions and not just consolidations.

When focusing on both transitions and consolidations,[4] Houle (2009) finds that income inequality, as measured by capital's share of income, weakly supports transitions but strongly weakens consolidations. That is, highly unequal autocracies are not less likely to become democratic, but highly unequal democracies are more likely to become autocracies. The reason inequality harms democracy does have to do with Median Voter theory, but deals with the elite side of the equation. As inequality rises, the cost to the elite of accepting democracy rise, as they have more to lose through wealth and income redistribution. Therefore, elites will oppose democracy and seek to undermine it; when inequality is high, they also have the resources to undermine and influence democratic governments. This is fundamentally the same argument as in Krieger and Meierrieks (2016), who argue that inequality leads to a reduction in economic freedom. Such a reduction is brought about because economic elites would prefer not to face economic competition from new entrants.

Houle (2016) makes a different argument by investigating the relationship between inequality and democracy at various levels of income. That is, equality of wealth and equality of poverty may have different impacts on democratization. In this formulation, inequality in poor countries does nothing for democracy, inequality in moderately developed countries boosts democracy, and inequality in rich countries harms democracy. Poor countries are unlikely to view democratization as a way to redistribute due to limited state capacity, so inequality will not increase demands for democratization. By contrast, rich and unequal dictatorships are better able to repress the masses, and the cost of redistribution is

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[4]A democratic transition is when a country moves from being an autocracy to a democracy. A democratic consolidation is when a new democracy develops the behavioral and constitutional norms that prevent serious internal challenges to democracy (Linz and Stepan, 1996).

also higher, so inequality harms democracy in wealthy countries. Additionally, equality in wealthy countries means that more people have the wealth and resources to demand and support democracy, and the costs of redistribution are lower. Middling countries with high inequality therefore have demand for redistribution and political elites have fewer resources with which to oppress. Looking at transitions over the years 1960 to 2006, the author finds that inequality in middle income countries increases the chances for democratic transition.[5] The political agency school as a whole has several important strengths despite the fact that the Median Voter Theorem only makes sense in countries which are already democratic. The political agency school is better able to understand democratic consolidations by looking at the incentives facing elites and masses, and how inequality and the distribution of wealth influence the preferences of voters and elites.

For our paper, the political agency school makes the most sense for understanding the role of billionaire wealth on levels of democracy, specifically on consolidation for a number of reasons. First, there are no more than roughly 1,500 billionaires in any given year. Looking at the wealth of that small of a group people will most likely not reveal deep underlying structural issues. Additionally, most countries with billionaires are wealthy enough that looking at the issue from a modernization perspective is probably not overly useful, as it is unlikely that the presence of billionaires can set off the sort of detailed transition pathways outlined in Midlarsky (1992).

Testing the political agency argument with respect to wealth inequality requires looking only at already existing democracies, as Ansell and Samuels (2010) note. The political agency argument is significantly less ambiguous. As much of the previous literature notes, inequality harms consolidation by both increasing voter resentment and giving political

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[5]The same author looks at the impact of inequality between ethnic groups in Houle (2015), finding that inequality between ethnic groups is likely to damage democratic institutions when within group inequality is low, since class and ethnic divisions become reinforcing.

and economic elites more reason to attempt to rig the game in their favor so as not to lose wealth and status. As was the case with modernization theory, the effect of different types of billionaire wealth is likely to be different as well. Overall wealth inequality may not be as resentment-inducing as inherited wealth inequality or politically connected wealth inequality. To the extent that higher inherited inequality represents lower social mobility due to high levels of wealth remaining in the same family over time, it may both increase resentment at the bottom, as voters view the democratic system as unable to deal with their inability to move up the economic ladder, and may also induce repression at the top, as entrenched elites view themselves as having more to lose under a democratic system (Houle, 2009). The argument concerning politically connected wealth inequality is the same as that for inherited wealth inequality but in a slightly more powerful form. Instead of voters resenting families who at one time built their wealth legitimately, these economic elites have gained their wealth solely through connections to the political apparatus. Therefore, voters would have increased resentment for a political system that rewards such behavior, but politically connected economic elites would be more fearful of redistribution and the loss of political power, as their wealth solely arose from their status as a political elite.

As the last note on the economic effects of billionaire wealth, it is important to address the argument in Houle (2016), that inequality has different effects at different levels of economic development. To test this part of the argument, and to simultaneously control for the fact that a minority of the countries in the sample have a billionaire in at least one time period, we run regressions on only countries with at least one billionaire in any of the years in the sample. In this regression, we expect inequality to harm democracy because we only look at countries developed enough to have a billionaire, and therefore implicitly control for modernization, and, as Houle (2016) notes, inequality in rich countries harms democracy because there is high demand for redistribution, and political and economic

elites have enough resources to repress the population. As with the other theories, inherited inequality and politically connected inequality are likely to be more harmful, as they both increase demand for redistribution by increasing voter resentment at the inability of the political system to adequately deal with issues of inequality and social mobility, and increase the pressures for economic elites to repress, as their wealth comes from the rules of the system in place rather than entrepreneurial foresight.[6]

2.2 Expected Impact of Control Variables

In order to control for other determinants of democracy, we select oil rents as a percentage of GDP, the natural log of GDP per capita, the UN education index, and the first lag of the Freedom House score as additional independent variables. We select oil rents because, as Ross (2001) notes, oil rents are significantly and negatively associated with levels of democratization as they empower entrenched elites to extract wealth from the economy without needing to tax. Moreover, the state can use oil rents to buy the loyalty of most of the population, and for those whose loyalty cannot be bought with oil rents, those same funds can be used to more thoroughly repress parts of the population. While oil rents negatively impact democratization for a number of reasons, it is not the purpose of this paper to test why oil negatively impacts democracy, but its empirical usefulness and function as a measure of the resource curse motivates its inclusion. We expect oil to be negatively related to Freedom House scores, although we suspect that this negative relationship may be impacted by the use of politically connected billionaire wealth, as many politically connected billionaires acquired their fortunes through the exploitation of natural resources.

GDP per capita and the UN education index are included as a way of controlling for the

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[6]The average voter side of the argument, of course, only applies to already existing democracies.

level of socio-economic development. As both Boix and Stokes (2003) and Epstein *et al.* (2006) argue, modernization theory is still important, and that increases in income can help explain democratic transitions. Therefore, since levels of billionaire wealth are likely to be correlated with economic development, controlling for per capita incomes and quality of education becomes desirable and necessary. To the extent that modernization theory is important, we expect GDP per capita to have a positive influence on Freedom House scores, as more developed, and therefore wealthier countries will have a higher demand for political representation. The function of education is much the same. As human capital develops through the education system, demand for democratization is likely to increase (Krieckhaus *et al.*, 2014). Therefore, we expect both variables to exert a positive effect on Freedom House scores. There has not been as much research on how modernization impacts consolidation, and so we have no reason to expect that the impact will change direction when restricting the sample to already existing democracies, although it is possible that it may lose significance, as once a country becomes a democracy, additional wealth may not improve democratic outcomes.

We include the first lag of the dependent variable. Given that levels of political freedom tend to be persistent over time, we expect this variable to exert a significant positive effect on the current level of political freedom. As Acemoglu *et al.* (2010) note in their model of regimes, any regime can and will be persistent over time in the absence of stochastic shocks. Therefore, *ceteris paribus*, we expect high levels of correlation between Freedom House scores in the current time period and Freedom House scores in the previous time period. As the Acemoglu *et al.* (2010) model holds for multiple regime types, we do not expect this relationship to change between samples. Although, as their baseline model is one of democracy, the persistence of democratic regimes may be expected to be stronger than that for non-democratic regimes. As a caveat, since our time periods are five years

instead of individual years, the magnitude and significance of this relationship is likely to be smaller than if time periods were one year.

3   Empirical Strategy

The aim of this study is to test the relationship between wealth inequality, measured as billionaire wealth as a percentage of GDP, and levels of political freedom as measured by Freedom House scores. Given the variables selected, and the theoretical effects of these variables, a dynamic model makes the most sense. Due to both the existence of effects over time of economic development, and the persistence of prior regime types, including a lag of the dependent variable on the right hand side of the equation allows for the best estimation of the effects of the variables without over proliferation of lagged independent variables (Studenmund, 2016). Additionally, the persistence of prior regime types motivates the use of the five year time gaps. Given that the billionaire data in (Bagchi and Svejnar, 2015) begins in 1987, the data therefore covers the years 1987, 1992, 1996,[7], 2002, 2007, and 2012. Given that we cover 6 periods, standard ordinary least squares (OLS) would not be the best linear unbiased estimator, as OLS has significant bias in dynamic models with fewer than 30 time periods (Nickell, 1981). In order to avoid this, bias, GMM estimation is used. However, since the dataset is not completely balanced, difference GMM drops too many observations, and therefore system GMM becomes the ideal choice for regressing this data set (Roodman, 2008). Given the variables selected, the equation takes the following form:

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[7]This is due to a change in the way Forbes covered billionaire wealth in 1997.

$$FreedomHouse_{it} = \beta_0 + \beta_1 \left(\frac{B}{GDP}\right)_{it} + \beta_2 EDU_{it} + \beta_3 OIL_{it} + \beta_4 LNGDP_{it} + \beta_5 FreedomHouse_{it-1} + \varepsilon_{it}$$

(1)

where i indexes country and t indexes year. In certain robustness tests, billionaire wealth
will be replaced with inherited billionaire wealth or politically connected billionaire wealth.
The distinction between these types of billionaire wealth will be discussed in the following
subsection. Empirical analysis is carried in Stata using the xtdpdsys command, which
runs the Arellano-Bover/Blundell-Bond estimator (Arellano and Bover, 1995; Blundell and
Bond, 1998).

In order to deal with the effect of having a large number of 0s in the independent
variable of interest, a regression will be run using a subsample of countries who have had a
billionaire in at least one time period. This subsample is chosen in order to examine if there
is a difference between countries who have billionaires and the overall sample. Defining the
sample as countries who have had a billionaire in at least one time period as opposed to
only looking at country-years when a billionaire is present allows for additional observations
since lags are used in GMM analysis. The Freedom House scores also have the category
variables for Free, Not Free, or Partially Free. Therefore, this allows for the testing of
the effect of billionaire wealth on already existing democracies by restricting our sample
to only Free countries, and, as a robustness test, extending the sample to Partially Free
countries to see the impact on full and partial democracies. The reason not-free countries
are excluded is because of the argument in Ansell and Samuels (2010) about Median Voter
Theory, which states that Median Voter Theory can only be used to describe behaviors
in already democratic countries, partially free countries are therefore included to offer a
looser definition of democracy.

3.1 Data

Now that the theoretical reasoning behind the variables and the way the variables are to be tested has been discussed, we turn now to discussing the specific data being used and the way in which we have operationalized the variables. Political freedom is measured using the Freedom House scores summing the political rights and civil liberties categories, as in Kersting and Kilby (2014). This is done for two reasons. First, summing them grants additional variability, allowing the data to go from 2 to 14 instead of 1 to 7. Second, capturing both political rights and civil liberties allows for a broader conception of democracy than that given in Dahl (1972). As can be seen from Table 1, observations span the range from 2 as the most free to 14 as the least free; for the purposes of easing interpretations, the scores have been inverted such that 14 becomes the most free and 2 becomes the least free. Although Freedom House did move to a 100 point scale which therefore has more variability, these scores are only available after 2002, which would cut our time periods in half. The mean of the data is at 6.46, and the standard deviation is at 3.873, indicating that there is wide dispersion of the data instead of tight clustering around the mean. The median score of 6 indicates that the average country is partially free.

Data for billionaire wealth comes from Bagchi and Svejnar (2015), and is compiled using the *Forbes* list of billionaires. The mean of 0.019 indicates that many countries do not have any billionaires, as according to this data billionaires tend to hold around 2 percent of GDP on average. The standard deviation of 0.088 combined with the maximum of 2.178 indicates that there are outliers. The highest level of billionaire wealth as a percentage of GDP that is used in this regression is Belize in 2012, with a value of 69.9 percent of GDP. Both inherited billionaire wealth (INBGDP) and politically connected billionaire wealth (PBGDP) show similar incidences of low means and tight standard errors. Although their maximum values are smaller, being 0.164 and 0.451, respectively, this is still evidence

that both inherited and politically connected billionaires control large amounts of national wealth. These values indicate that inherited billionaires control 16.4 percent of GDP and politically connected billionaires control 45.1 percent of GDP at their respective maximums. Together, these reveal evidence for high variability in the main independent variable.

Of the 58 countries with billionaires in at least one time period, 44 have at least one billionaire who inherited their wealth. Of the 58 countries with billionaires, 37 have at least one politically connected billionaire in this sample. The countries with politically connected billionaires range from more obvious culprits such as Russia or Malaysia, where natural resource billionaires exploited connections to political elites, to countries such as Italy, where media magnates and car manufacturers use connections to politicians to get ahead. Also included in this category are South Korean billionaires who are part of Chaebols, which have extensive connections to the central government. As for what determines an inherited or politically connected billionaire, we follow the methodology in Bagchi and Svejnar (2015), which used Lexis Nexus and ProQuest to search newspaper articles for mentions of inheriting a business from their parents or for evidence of corruption and connections, respectively. Countries with either inherited or politically connected billionaires span the spectrum from free countries such as South Korea, Sweden, or Germany, to very unfree countries such as Bahrain, China, or Kazakhstan. They also contain significant variability in per capita GDP, including countries with real GDP per capita over 40,000 dollars and below 10,000 dollars. The full list of countries with at least one billionaire can be found in Table 9.

Data on oil rents as a percentage of GDP comes from the World Bank, and exhibits wide variability with a mean of 3.156 and a standard deviation of 8.340. In addition, the data range from 0, indicating no reliance on oil rents, to oil rents being worth 59.846 percent of GDP. The UN Education Index is a 0 to 1 index calculated using expected and

mean years of schooling. The UN education index ranges, in theory, from 0 to 1, but in reality ranges from 0.081 to 0.928, with a mean of 0.577 and a standard deviation of 0.181. The natural log of GDP per capita comes from the Penn World Tables using their data on real GDP and population (Feenstra *et al.*, 2015).

The baseline regression analysis of all countries in the sample is an unbalanced panel data set covering 136 countries in 6 time periods. The subset covering only free countries spans 79 countries, and the subset of billionaire countries covers 58 countries. The UN education index comes from 2 years before the year in question due to data limitations.

4 Empirical Results

The results in the first three columns of Table 2 are broadly consistent with the findings in Houle (2009), that is, that inequality weakly and insignificantly increases political freedom.[8] However, this broad consistency belies severe problems with the baseline regression. The Sargan test p-value of 0.001 indicates evidence of invalidity in the overidentifying restrictions, and therefore means that the model may lack valid instruments. Aside from the lagged dependent variable, in the one-step estimation in columns 1 and 2, only oil rents are significant, and even then only at the 10 percent level, indicating borderline significance; this significance disappears in the two-step estimation used in column 3. Although the education variable is in the direction expected by theory, it is not a significant relationship. The relationship between GDP and Freedom House scores is negative, which is not what we expected, but also has the lowest Z statistics out of any of the variables. These results show that modernization theory does a fairly poor job of explaining levels of freedom broadly speaking, which is consistent with Prezworski and Limongi (1997). Therefore, the results of our baseline regression are neither surprising nor discouraging, but they do

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[8]His paper looks at transitions as opposed to the level of freedom.

greatly motivate the need to examine different samples.

The results in columns 4 through 6 of Table 2 are comparable to those in the first three columns. When using inherited billionaire wealth, the coefficient becomes negative but remains insignificant, and the Sargan test value once again is concerning. The control variables retain their sign and are similar in magnitude and significance. Oil rents are significant at the 5 percent level in column 5, but this significance disappears in column 6. In columns 7 through 9 of Table 2, wealth inequality goes back to being positive. This is perhaps the most surprising result in the basic estimation. Theory would lead us to expect a negative association between politically connected wealth inequality and levels of political freedom. As with the first table, oil rents as a percentage of GDP is the only significant variable, and even then only in columns 7 and 8 at the 10 percent level. In all three tables, oil becomes insignificant when using the two-step estimator with robust standard errors, which is employed to mitigate mild model misspecification and concerns of overidentifying restrictions not being valid (Roodman, 2009). What these three estimations show is that billionaire wealth and modernization theory do a fairly poor job of explaining overall differences in levels of freedom across the world, which is consistent with much of the previous literature.

In order to test Ansell's theory that Median Voter Theorem can only be applied to existing democracies as opposed to applying to all countries, we restrict the sample to only countries rated as Free by Freedom House. The results for overall wealth inequality are similarly insignificant, except that education replaces oil as the significant variable. The education variable is significant in the expected direction at the 5 percent level, with a coefficient of 4.835, indicating that move from the worst possible educational quality to the best possible education quality would increase levels of political freedom by 4.835 points, which is more than a full standard deviation. In addition, as shown in column 1 of Table 3,

the Sargan test is 0.283, indicating that model is well specified. However, column 2, which uses robust standard errors, provides evidence that education does not have a significant impact on levels of democracy in already free countries, and column 3 confirms this lack of significance.

Inherited billionaire wealth is once again negatively correlated with democracy, but, with the exception of column 5, is not significantly correlated. Even in column 5, it never becomes significant at higher than the 10 percent level. While the education variable becomes significant again in column 5, it loses significance in columns 6 and 7. Despite most variables being insignificant, the Sargan test value is 0.301, indicating that the restrictions are valid and the model is well specified. Therefore, it is unlikely that the lack of significance is due to poor model choice.

In columns 7 and 8 of Table 3, politically connected billionaire wealth is significant at the 10 percent level in the positive direction. With a coefficient of 14.621, the interpretation is that if politically connected billionaire wealth as a percentage of GDP increases by one standard deviation, then political freedom would increase by 0.42 points. Given the Sargan test value of 0.277, it is clear that restrictions on the model are valid, and therefore that the model is well specified, making the positive value and large coefficient on the wealth inequality variable surprising. The implication in this table is that in countries that are already free, having more billionaires make their money via their political connections has a positive impact on the level of democracy in the country. As with other types of wealth inequality, the UN education index is significant in column 7 but becomes insignificant when using robust standard errors.[9]

Since only a minority of countries have a billionaire in at least one year, we restrict the analysis to only countries that have had a billionaire in at least one period in order to

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[9]Including Partially Free countries does not qualitatively change the results when compared to restricting the sample to only Free countries.

control for the large number of 0s entering the regression equation. In line with our previous results, the relationships between the variables are similarly insignificant. Further, columns 1 through 3 reveals both evidence of invalid overidentifying restrictions and evidence of serial correlation given the Sargan test value and Arellano-Bond test value of of 0.04 and 0.026, respectively. Therefore, this regression, whether with regular or robust standard errors, is not well suited for this data. Even the two step estimator is plagued by serial correlation, as shown by its Arellano-Bond test p-value of 0.017. Therefore, we cannot be confident in the results that we have found. Most likely, the reason for the lack of significance in oil in this sample is that it drops a number of major oil exporting countries from the sample.[10]

In Table 4, inherited billionaire wealth is negatively correlated with Freedom House scores at the 10 percent level in columns 1 and 2, but this significance disappears when using the two-step estimator in column 3. With a coefficient of -6.067, an increase in inherited billionaire wealth of one percent of GDP would decrease Freedom House scores by 0.06 points. However, while the Sargan test value in column 1 gives a p-value of 0.07, indicating that the restrictions are valid, the Arellano-Bond test value of 0.029 in column 2 suggests serial correlation, inducing bias in the standard errors. Columns 7 through 9 of Table 4 shows the impact of politically connected billionaire wealth on Freedom House scores in countries with at least one billionaire. The Sargan test value indicates that restrictions are not valid and therefore the model may be misspecified. Further, the Arellano-Bond test values indicate serial correlation, and therefore bias in the standard errors. With exception of the lagged dependent variable, none of the variables are significant in any of the columns in Table 4. Therefore, the large number of countries lacking a billionaire was not driving the lack of significance in Table 2. Taken together, these empirical results reveal that

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[10]For example, Angola, Congo, Oman, and Equatorial Guinea are all dropped in this subsample, as are Iran and Syria.

billionaire wealth and modernization theory more broadly are not effective at accounting for levels of political freedom across the world.

To see if the relationship between wealth inequality and political freedom was being masked by the aggregation of the two components of the Freedom House index, we decompose each Freedom House score into the scores for political rights and civil liberties. As Table 5 shows, billionaire wealth of any type has no significant impact on either levels of political rights or civil liberties. Oil rents become insignificant when compared to Table 2, but the education index becomes significant at the 10 percent level in columns 4 through 6, which indicates that there is a positive correlation between better education and increased civil liberties. In all columns, the Sargan test provides evidence of misspecification, although the Sargan test values are higher for columns 1 through 3.

4.1 Robustness Extensions using OLS

The significance of the lagged dependent variable combined with the insignificance of the other independent variables led us to believe that perhaps the persistence of democracy is obscuring the effects of the independent variables. Therefore, we re-estimate the regression using an OLS equation without the lagged dependent variable. These results are reported in Table 6, where the first column reports overall billionaire wealth, the second column reports inherited billionaire wealth, and the third column reports politically connected billionaire wealth. When excluding the lagged dependent variable, the control variables become highly significant in the expected direction. Both the education index and log of GDP per capita have a positive relationship with Freedom House scores, and oil rents have a significant negative relationship with Freedom House scores. *Ceteris paribus*, a 1 percent increase in GDP per capita will increase freedom scores by around 0.72, while a 1 percent increase in oil rents as a percentage of GDP decreases Freedom House scores

by around 0.11. A one standard deviation increase in the education index will improve levels of political freedom by over 1 point, holding everything else constant. However, billionaire wealth remains insignificant no matter what type of billionaire wealth is used, indicating that billionaire wealth does not exhibit a harmful effect on levels of democracy in the world at large.[11] Therefore, while it appears that using a lagged dependent variable model removes significance from the control variables, it was not responsible for the lack of significance in the coefficient for billionaire wealth.

There are, of course, other explanations for why certain countries have or have not become democracies. Two such reasons are ethnic fractionalization and the percentage of Protestants in a country. For ethnic fractionalization, we turn to the argument expressed in Stepan *et al.* (2011), which argues that constructing a multi-ethnic democracy requires special institutional design and planning that may complicate democratization efforts. Therefore, we may expect that more ethnically fractured states are less likely to be democracies than are other countries. In terms of operationalizing the variable, we use the dataset used in Alesina *et al.* (2002). For the importance of Protestantism, the argument is best made in Woodberry (2012). Protestant missionaries prioritized the development of human capital and education, which are traditional held as important determinants of democratic development. In addition, Protestant missionaries proliferated the printing press, exposing the masses to new ideas, and they also encouraged civil society. Therefore, we expect a positive relationship between the percentage of Protestants in a country and levels of political freedom, although this may be at the cost of reducing the significance of the education variable. Data on percentage of Protestants comes from the Quality of Government database, as does the data on ethnic fractionalization. Although these vari-

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[11]When limiting the sample to only free countries, only politically connected billionaire wealth exhibits a negative effect on levels of democracy, while education becomes insignificant under all three regressions. When looking only at countries with at least one billionaire, the results maintain the significance and direction that they do under the total sample.

ables are important, they are both time-invariant. They cannot be used in the GMM environment because GMM takes first differences. Taking the first difference of a time-invariant variable would simply produce nothing but zeros and therefore drop out of the regression. As can be shown from columns 4 through 6 in Table 6, the sign of our results are in line with theory, but the ethnic fractionalization variable is insignificant.[12] Adding these variables does not help to make the billionaire wealth variable significant, indicating more completely that billionaire wealth is not an important determinant of the level of political freedom in any given country. A dynamic OLS model was not estimated since we have fewer than 30 time periods, and therefore significant bias would result from such an estimation (Nickell, 1981).

To repeat the robustness check used in Table 5 with our new variables, we run OLS regressions using our updated set of control variables and the decomposed Freedom House scores. Results are reported in Table 7. The signs on the variables do not change when using total Freedom House scores or when using the sub-components. The variables are similarly significant, although both Protestantism and GDP per capita are more significantly correlated with civil liberties than they are with political rights.

As a final robustness check, we include taxes as a percentage of GDP in order to test the repression hypothesis in Ross (2001) and to see if the inclusion of different control variables improves the results of the Sargan test. In columns 1 through 3 of Table 8, we run GMM regressions and find that taxes as a percentage of GDP are insignificant, and they do not reduce the significance of the oil variable. This indicates that oil rents harm democracy more than just by removing the accountability that taxation necessitates. The Sargan test value improves when including the taxation variable, but still provides evidence

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[12]Restricting the samples to only free countries does not change the signs of the variables, but does make all variables aside from GDP per capita and oil rents insignificant. For the sample of all countries with at least one billionaire, the results maintain the same sign and significance at the 5 percent level that they do in the overall sample.

of misspecification. Columns 4 through 6 of Table 8 report the results for OLS regressions using all control variables. In these columns, the control variables keep their signs and significance from Table 6, and taxes remain insignificant. The only notable change is that politically connected wealth inequality becomes significantly negative at the 10 percent level. This is the only time politically connected billionaire wealth is negatively related to levels of political freedom. This final robustness extension shows that levels of taxation are not a significant determinant of democracy, and that politically connected billionaire wealth has an inconsistent relationship with levels of political freedom.

5 Conclusions

What do these results say about the impact of billionaire wealth on levels of democracy? They say that billionaire wealth is not an important determinant of levels of political freedom in the world, nor does it play into the resentment aspect of Median Voter Theory, as evinced by the lack of correlation between billionaire wealth and levels of political freedom amongst already existing democracies. Moreover, the lack of correlation throughout the different regressions suggest that modernization theory, which is shown through the UN education index and GDP per capita, are also not effective determinants of political freedom and democracy when controlling for previous levels of democracy. In the absence of such controls, modernization theory becomes highly important in explaining levels of political freedom in all three samples considered in this study. However, the Sargan tests in the regressions in the overall sample and the billionaire subsample indicate that the model was most likely misspecified, and therefore the analysis could be improved by the inclusion of additional control variables. The other factor complicating the use of GMM is the concern with over-proliferation of instruments (Roodman, 2009). Inherited and politically connected billionaire wealth are similarly unimportant for levels of political freedom across

all samples. The results from the Sargan and Arellano-Bond tests reveal econometric errors, which undercuts the reliability of the results. In the OLS environment, billionaire wealth is similarly unimportant. The variables associated with Protestantism and socioeconomic development are significant factors in explaining levels of democracy.

If we do decide to take the results of these regressions at face value, they suggest that billionaire wealth is not a danger to democracy. Perhaps billionaires are significantly different from other types of economic elites who may co-opt the political system to entrench themselves. Because the threshold of billionaire wealth is set in nominal terms, our proxy of wealth inequality may be partially a function of economic development. It is possible that a more adequate suite of control variables may provide more useful results, or, alternatively, using a different conceptual approach to democratization may prove useful as well.

The other significant factor may be that there are simply too few billionaires, regardless of the vast amount of resources they control, to significantly change the political landscape. For example, the country with the most billionaires in any given year, the United States, had a peak of just under 425 billionaires in 2012. Perhaps those at the very top of the distribution will have a different impact on political freedom than will the top one percent or top ten percent. Measuring the impact of the richest handful of people on democracy is likely to be difficult at best, and might be better served by a narrative approach detailing their lobbying efforts.

While the lack of significance in the overall sample is consistent with Houle (2009), the lack of significance in the restricted sample suggests that the political agency view of inequality may better explain overall inequality than inequality at the very top of the distribution. Such a difference between overall inequality and inequality at the very top would not be an entirely new finding. As Chetty *et al.* (2014) notes, the Gini coefficient is negatively correlated with social mobility but the one percent income share is not. This

indicates that billionaire wealth may be fundamentally different than wealth inequality more broadly understand, and therefore future scholars may benefit by repeating similar analysis with wealth shares of the top one or ten percent.

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Table 1: Summary Statistics

Variable	Mean	Std. Dev.	Min.	Max.	N
FreedomHouse	6.458	3.873	2	14	884
Billionaire Wealth/GDP	0.019	0.088	0	2.178	912
Inherited Billionaire Wealth/GDP	0.007	0.020	0	0.164	912
Politically Connected Billionaire Wealth/GDP	0.005	0.030	0	0.451	912
OIL	3.156	8.340	0	59.846	822
EDU	0.577	0.181	0.081	0.928	664
LNGDP	8.913	1.223	4.959	11.982	828

Table 2: The Effects of Different Types of Billionaire Wealth on Freedom House Scores in All Countries in the Sample

	Regular SE FH Score	Robust SE FH Score	Two-Step FH Score	Regular SE FH Score	Robust SE FH Score	Two-Step FH Score	Regular SE FH Score	Robust SE FH Score	Two-Step FH Score
First Lag of Freedom House	0.493***	0.493***	0.550***	0.488***	0.488***	0.544***	0.488***	0.488***	0.532***
	(8.80)	(6.62)	(4.38)	(8.82)	(6.51)	(4.29)	(8.86)	(6.56)	(4.31)
Billionaire Wealth/GDP	0.611	0.611	0.558	-	-	-	-	-	-
	(0.42)	(0.52)	(0.44)						
Inherited Billionaire Wealth/GDP	-	-	-	-3.426	-3.426	-4.573	-	-	-
				(-0.89)	(-1.00)	(-1.12)			
Political Billionaire Wealth/GDP	-	-	-	-	-	-	1.979	1.979	4.489
							(0.64)	(0.70)	(1.54)
Oil Rents	-0.0579*	-0.0579*	-0.0282	-0.060*	-0.060**	-0.029	-0.0580*	-0.0580*	-0.026
	(-1.72)	(-1.88)	(-0.69)	(-1.80)	(-1.97)	(-0.70)	(-1.73)	(-1.89)	(-0.64)
UN Education Index	2.371	2.371	3.040	2.129	2.129	2.680	2.321	2.321	3.030
	(0.93)	(0.64)	(0.78)	(0.84)	(0.57)	(0.69)	(0.91)	(0.62)	(0.78)
GDP per Capita	-0.0284	-0.0284	-0.0652	-0.005	-0.005	-0.053	-0.038	-0.038	-0.126
	(-0.10)	(-0.09)	(-0.17)	(-0.02)	(-0.02)	(-0.14)	(-0.13)	(-0.11)	(-0.33)
Sargan Test	0.001	-	-	0.001	-	-	0.000	-	-
Arellano-Bond Test	-	0.259	0.274	-	0.244	0.249	-	0.246	0.237
N	603	603	603	603	603	603	603	603	603
Countries	136	136	136	136	136	136	136	136	136

Notes: Z statistics in parentheses. Freedom House is the sum of the civil rights and political liberties index normalized so that 14 is the most free and 2 is the least free. Inherited billionaire wealth uses the wealth of billionaires who inherited all or part of their business from others. Political billionaire wealth uses the wealth of billionaires who earned their wealth through connections to politicians. Oil rents are supplied by the World Bank. The UN Education Index comes from the United Nations. GDP per capita is calculated using the Penn World Tables.
* $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

Table 3: The Effects of Different Types of Billionaire Wealth on Freedom House Scores in Free Countries

	Regular SE FH Score	Robust SE FH Score	Two-Step FH Score	Regular SE FH Score	Robust SE FH Score	Two-Step FH Score	Regular SE FH Score	Robust SE FH Score	Two-Step FH Score
First Lag of Freedom House	0.313***	0.313***	0.261**	0.307***	0.307***	0.254**	0.306***	0.306***	0.263**
	(8.02)	(3.31)	(2.30)	(7.95)	(3.27)	(2.30)	(8.03)	(3.27)	(2.44)
Billionaire Wealth/GDP	1.059	1.059	0.553	-	-	-	-	-	-
	(0.93)	(1.38)	(0.71)	-	-	-	-	-	-
Inherited Billionaire Wealth/GDP	-	-	-	-2.929	-2.929*	-1.533	-	-	-
	-	-	-	(-0.82)	(-1.73)	(-1.04)	-	-	-
Political Billionaire Wealth/GDP	-	-	-	-	-	-	14.622*	14.622*	12.951
	-	-	-	-	-	-	(1.88)	(1.64)	(1.14)
Oil Rents	-0.016	-0.016	0.079	-0.008	-0.008	0.087	0.001	0.001	0.070
	(-0.14)	(-0.09)	(0.36)	(-0.07)	(-0.05)	(0.44)	(0.01)	(0.00)	(0.32)
UN Education Index	4.835**	4.835	4.540	4.654**	4.654	4.133	4.654**	4.654	4.133
	(2.33)	(1.13)	(0.94)	(2.25)	(1.08)	(0.84)	(2.46)	(1.18)	(1.04)
GDP per Capita	0.237	0.237	0.370	0.296	0.296	0.433	0.185	0.185	0.301
	(0.83)	(0.46)	(0.64)	(1.03)	(0.57)	(0.74)	(0.65)	(0.36)	(0.53)
Sargan Test	0.283	-	-	0.301	-	-	0.277	-	-
Arellano-Bond Test	-	0.253	0.190	-	0.208	0.175	-	0.293	0.175
N	305	305	305	305	305	305	305	305	305
Countries	79	79	79	79	79	79	79	79	79

Z statistics in parentheses

* $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

Table 4: The Effects of Different Types of Billionaire Wealth on Freedom House Scores in Countries with At Least One Billionaire

	Regular SE FH Scores	Robust SE FH Scores	Two-Step FH Scores	Regular SE FH Scores	Robust SE FH Scores	Two-Step FH Scores	Regular SE FH Scores	Robust SE FH Scores	Two-Step FH Scores
First Lag of Freedom House	0.555***	0.555***	0.621***	0.563***	0.563***	0.631***	0.548***	0.548***	0.606***
	(6.30)	(5.95)	(4.05)	(6.42)	(5.62)	(3.90)	(6.30)	(5.78)	(3.70)
Billionaire Wealth/GDP	0.379	0.379	0.646	-	-	-	-	-	-
	(0.29)	(0.34)	(0.61)	-	-	-	-	-	-
Inherited Billionaire Wealth/GDP	-	-	-	-6.067*	-6.067*	-4.489	-	-	-
	-	-	-	(-1.75)	(-1.84)	(-1.20)	-	-	-
Political Billionaire Wealth/GDP	-	-	-	-	-	-	1.583	1.583	1.739
	-	-	-	-	-	-	(0.60)	(0.59)	(0.50)
Oil Rents	-0.040	-0.040	-0.055	-0.043	-0.043	-0.055	-0.041	-0.041	-0.053
	(-0.99)	(-0.93)	(-1.24)	(-1.07)	(-1.03)	(-0.94)	(-1.02)	(-0.97)	(-1.07)
UN Education Index	3.915	3.915	-1.342	3.558	3.558	-1.836	3.932	3.932	-1.173
	(1.50)	(1.23)	(-0.31)	(1.36)	(1.10)	(-0.42)	(-1.02)	(-0.97)	(-1.07)
GDP per Capita	0.037	0.037	0.573	0.034	0.034	0.540	-0.012	-0.012	0.439
	(0.08)	(0.08)	(1.40)	(0.08)	(0.08)	(0.96)	(-0.03)	(-0.03)	(1.07)
Sargan Test	0.045	-	-	0.072	-	-	0.032	-	-
Arellano-Bond Test	-	0.0264	0.017	-	0.029	0.014	-	0.026	0.016
N	273	273	273	273	273	273	273	273	273
Countries	58	58	58	58	58	58	58	58	58

Z statistics in parentheses

* $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

Table 5: The Effects of Different Types Billionaire Wealth on Political Rights and Civil Liberties

	Total Billionaires Political Rights	Inherited Billionaires Political Rights	Political Billionaires Political Rights	Total Billionaires Civil Liberties	Inherited Billionaires Civil Liberties	Political Billionaires Civil Liberties
First Lag of DV	0.569***	0.564***	0.566***	0.316***	0.313***	0.311 ***
	(9.40)	(9.47)	(9.48)	(6.66)	(6.63)	(6.60)
Billionaire Wealth/GDP	0.240	-3.681	1.550	0.388	-0.223	0.925
	(0.24)	(-1.38)	(0.71)	(-0.22)	(-0.13)	(0.68)
Oil Rents	-0.038	-0.040*	-0.038	-0.019	-0.020	-0.019
	(-1.62)	(-1.70)	(-1.64)	(-1.34)	(-1.38)	(-1.35)
UN Education Index	1.265	0.989	1.229	1.805*	1.771*	1.803*
	(0.73)	(0.57)	(0.71)	(1.71)	(1.68)	(1.71)
GDP per Capita	-0.048	-0.035	-0.062	0.077	0.083	0.074
	(-0.23)	(3.88)	(-0.17)	(-0.29)	(0.63)	(0.61)
Sargan Test	0.022	0.026	0.011	0.001	0.001	0.001
N	603	603	603	603	603	603
Countries	136	136	136	136	136	136

Z statistics in parentheses

* $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

Table 6: The Effects of Different Types Billionaire Wealth on Freedom House Scores using OLS

	Total Billionaires FH Scores	Inherited Billionaires FH Scores	Political Billionaires FH Scores	Total Billionaires FH Scores	Inherited Billionaires FH Scores	Political Billionaires FH Scores
Billionaire Wealth/GDP	-1.999	1.135	-2.897	-0.358	0.431	-2.897
	(-0.18)	(0.37)	(-1.18)	(-0.22)	(0.14)	(-1.18)
Oil Rents	-0.116***	-0.115***	-0.116***	-0.106***	-0.106***	-0.107***
	(-6.47)	(-6.46)	(-6.57)	(-5.46)	(-5.47)	(-6.57)
UN Education Index	6.118***	6.112***	6.133***	6.122***	6.125***	6.058***
	(4.43)	(4.43)	(4.47)	(3.71)	(3.71)	(3.69)
GDP per Capita	0.727***	0.722***	0.739***	0.598***	0.594***	0.616***
	(3.92)	(3.88)	(3.99)	(2.91)	(2.89)	(3.01)
Ethnic Fractionalization	-	-	-	-0.973	-0.966	-0.997
	-	-	-	(-0.94)	(-0.94)	(-0.97)
Percent Protestant	-	-	-	0.027**	0.027**	0.026**
	-	-	-	(2.42)	(2.43)	(2.35)
N	603	603	603	516	516	516
Countries	136	136	136	112	112	112

Z statistics in parentheses. Percent Protestant measures the percentage of Protestants in a country in 1980. Ethnic Fractionalization measures
the degree of ethnic heterogeneity in a country.

* $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

Table 7: The Effects of of Billionaire Wealth on Political Liberties and Civil Rights using Non-Development Controls and OLS

	Total Billionaires Political Rights	Inherited Billionaires Political Rights	Political Billionaires Political Rights	Total Billionaires Civil Liberties	Inherited Billionaires Civil Liberties	Political Billionaires Civil Liberties
Billionaire Wealth/GDP	-0.113	-0.0441	-4.245	-0.332	0.316	-3.246
	(-0.10)	(-0.02)	(-1.35)	(-0.46)	(0.23)	(-1.44)
Oil Rents	-0.0642***	-0.0641***	-0.0655***	-0.0450***	-0.0450***	-0.0458***
	(-5.39)	(-5.39)	(-5.53)	(-5.19)	(-5.19)	(-5.29)
UN Education Index	3.498***	3.498***	3.464***	2.849***	2.851***	2.811***
	(3.38)	(3.38)	(3.37)	(3.86)	(3.87)	(3.82)
GDP per Capita	0.283**	0.282**	0.295**	0.328***	0.325***	0.335***
	(2.16)	(2.16)	(2.26)	(3.59)	(3.55)	(3.67)
Ethnic Fractionalization	-0.386	-0.385	-0.398	-0.458	-0.451	-0.471
	(-0.65)	(-0.65)	(-0.68)	(-0.97)	(-0.95)	(-1.00)
Percent Protestant	0.0119*	0.0119*	0.0112*	0.0142***	0.0142***	0.0137***
	(1.88)	(1.88)	(1.79)	(2.78)	(2.80)	(2.71)
N	516	516	516	516	516	516
Countries	112	112	112	112	112	112

Z statistics in parentheses
* $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$

Table 8: The Effects of Different Types Billionaire Wealth on Freedom House Scores using Taxes/GDP as a control

	Total Billionaires FH Scores	Inherited Billionaires FH Scores	Political Billionaires FH Scores	Total Billionaires FH Scores	Inherited Billionaires FH Scores	Political Billionaires FH Scores
First Lag of Freedom House	0.496 (7.24)	0.493 (7.26)	0.488 (7.22)	- -	- -	- -
Billionaire Wealth/GDP	1.100 (0.78)	-3.118 (-0.80)	3.768 (1.18)	-0.944 (-0.62)	-0.898 (-0.29)	-9.823* (-1.75)
Oil Rents	-0.102*** (-2.66)	-0.103*** (-2.70)	-0.099*** (-2.60)	-0.136*** (-6.31)	-0.136*** (-6.30)	-0.138*** (-6.43)
UN Education Index	3.982 (1.54)	3.468 (1.35)	4.137 (1.61)	7.145*** (4.10)	7.144*** (4.10)	6.946*** (3.99)
GDP per Capita	0.372 (1.00)	0.387 (1.04)	0.340 (0.92)	0.541** (2.36)	0.538** (2.34)	0.568** (2.49)
Taxes/GDP	0.001 (0.05)	0.004 (0.17)	-0.000 (-0.02)	0.023 (1.28)	0.023 (1.28)	0.023 (1.31)
Ethnic Fractionalization	- -	- -	- -	-0.146 (-0.14)	-0.138 (-0.13)	-0.207 (-0.20)
Percent Protestant	- -	- -	- -	0.026** (2.36)	0.026** (2.38)	0.025** (2.26)
Sargan Test	0.014	0.015	0.012	-	-	-
N	473	473	473	399	399	399
Countries	135	135	135	111	111	111

Z statistics in parentheses. Columns 1-3 use GMM, columns 4-6 use OLS. Taxes/GDP comes from the World Bank.

* $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

Table 9: Countries Entering into the Regression with at Least One Billionaire

Argentina	Australia	Austria	Bahrain	Belgium	Belize
Brazil	Canada	Chile	China	Colombia	Cyprus
Czech Republic	Denmark	Egypt	Finland	France	Georgia
Germany	Greece	Iceland	India	Indonesia	Ireland
Israel	Italy	Japan	Kazakhstan	Kuwait	Lebanon
Malaysia	Mexico	Morocco	Netherlands	New Zealand	Nigeria
Norway	Oman	Peru	Philippines	Poland	Portugal
Romania	Russia	Serbia	Singapore	S. Africa	S. Korea
Spain	Sweden	Switzerland	Thailand	Turkey	Ukraine
UAE	UK	US	Venezuela		