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Democracy, Capitalism, and Income Inequality: Seeking Causal Directions

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Abstract

Recent research shows that lower levels of income inequality cause higher levels of democracy, and vice versa in a simultaneous relationship. A critical factor missing from these studies is a direct exogenous measure of capitalism in models explaining variation in income inequality and democracy. This study examines 50 countries over the years 1978-1993 and finds in a pooled two stage least squares modeling exercise that the Fraser Institute measure of capitalism appears to have a positive linear impact on POLITYIV measures of democracy and a negative linear impact on income inequality (more capitalism, more inequality). There appears to be no higher-order relationship between capitalism and democracy or income inequality, though there is a parabolic relationship between democracy and income inequality.

Introduction

This study examines the bidirectional relationship between democracy and income distribution in 50 countries around the world, building on previous cross-national work that shows that democracy and income distribution account for each other's variation (Burkhart 1997, Reuveny and Li 2003, Rudra 2004). The innovation of this study is to add an economic structure variable, capitalism, as an explanatory variable in the bidirectional model that explains variation in both cross-national democracy and income distribution. I hypothesize that capitalist countries will both generally increase the likelihood of democracy and exacerbate the worsening distribution of income.

Scholars have generally found the going to be rough in ascertaining the precise relationship between democratic performance and income inequality. Theory suggests that a relationship should exist between the two phenomena (Aristotle 1905, Midlarsky 1997, Moore 1966, Reuveny and Li 2003). The increasing international presence of democracy should decrease the incidence of income inequality. More democratic countries spread political power, inviting the populace to participate in political decision making that would include policies which spread the national wealth across the population (Boix 1998). As well, a polity with more equitable income distribution should provide a good environment for democracy because with a fairer distribution of income the expressive power of voices throughout the polity is more equalized (Lipset 1959).

This straightforward theoretical expression of the democracy - income inequality relationship is imperiled by both methodological and empirical complexity. The analyst must estimate both the form of the relationship and its operationalization. For instance, these hypotheses can be tested in either a linear or nonlinear fashion. A quadratic effect is possible where increasing equal levels of state-distributed income distribution hinder democratic freedom, and increasing levels of democracy could, through demands for laissez-faire economic policies, exacerbate income inequality (Acemoglu and Robinson 2002, Burkhart 1997, Crenshaw 1992, Simpson 1990). In short, both possible specifications need examination. Second, the estimated models in the literature should employ several common control variables, including economic development, world-system position, age structure of the population, an index of globalization, percentage of the population Protestant, and British colonial status. Third, evidence is highly mixed in support of the hypotheses. The studies that find the null hypothesis of no relationship to be true (Bollen and Grandjean 1981, Bollen and Jackman 1985, Cutright 1967, Hewitt 1977, Jackman 1974, Weede 1982) balance those that confirm some sort of a correlation (Burkhart 1997, Crenshaw 1992, Reuveny and Li 2003, Rudra 2004, Simpson 1990).

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It is instructive, though, that the later studies find more evidence of a relationship than do the earlier ones. Theoretical and methodological advances which cut through the parameter estimation thicket do appear to be reasons behind the movement toward the significant findings. For example, Crenshaw and Simpson introduce in their separate single equation studies new variables: education enrollment and percentage of labor force in agriculture respectively, which help to specify the model in a more precise manner. Rudra uses a measure of labor force strength that takes into account the extent to which skilled versus unskilled labor is present in the country. In addition to more refined variables, construction of more complete and reliable income inequality datasets also encourages empirical exploration (see Reuveny and Li's work). The first reliable income inequality dataset was constructed by Hoover (1989) and utilized by Burkhart (1997), with Deininger and Squire (1998) following in Hoover's footsteps.

Therefore, this field of study, straddling political science and political sociology, has vibrancy and promise in acquiring answers to vexing public policy questions. Is there a tradeoff between income inequality and political freedom that is expressed through capitalism? Do countries interested in political freedom and economic freedom need to sacrifice income equality in the process of acquiring both? From Marx onward, many find it axiomatic that free-market capitalism is hostile to issues of income distribution, manifested most recently in the dependency literature (Amin 1976, Frank 1969, Lee 2001, Wallerstein 1974). A literature in economics famously finds an inverted U-curve relationship between economic development (taken to be a surrogate for capitalism) and income inequality, where income inequality increases in the incipient stages of industrialization but lessens as the industrialization process matures (Kuznets 1963). This finding is supported in subsequent studies (Bollen and Jackman 1985; Gillis, Perkins, Roemer and Snodgrass 1987), and refined by micro-level case studies such as that performed by Nee and Liedka (1997) to include the impact of political and social institutions such as corporatism, an arrangement found to be helpful for equality. Nee and Liedka further bolster, through their analysis of Chinese labor markets in the burgeoning capitalism of the 1970s and 1980s, the claims of a literature that finds a positive role for market driven economic development in helping to raise the standard of living for the masses (Barrett and Whyte 1982, Firebaugh and Beck 1994, Weede 2002).

However, to the extent that capitalism is not directly measured as such in previous studies, but rather implied through such measures as economic development and economic openness statistics such as gross national product and foreign direct investment, it is still an open question as to the shape of the parameters of any capitalism—income inequality—democracy relationship. To what degree are capitalist processes being captured by extant measures in these literatures? Capitalism is defined by Webster as "An economic system in which investment in and ownership of the means of production, distribution, and exchange of wealth is made and maintained chiefly by private individuals or corporations" (Webster 1997, 195). Mueller gives further animation to democracy by defining it as "an economic arrangement in which the government substantially leaves people free to pursue their own economic interests as long as they do so without physical violence" (1999, 21). Attempted operationalizations of this measure number several: government spending as a percentage of gross national product, ordinal rankings of openness of business climate, and counts of bilateral and multilateral free trade agreements for countries come to mind. In the empirical dependency literature, measures of capitalism are implied in the core—semiperiphery—periphery cleavages between countries, based where they are located within the world-system (Arrighi and Drangel 1986, Bollen 1983, Snyder and Kick 1979).[1] This is a measure of capitalism based on <u>external</u> forces, where the point of comparison is between countries. For its part, economic development, while assumed to be part of a capitalist process, can take place in several alternative economic environments, not just capitalist ones. For instance, levels of economic development in communist countries, at their peak levels, were on a par with several high and upper-middle income countries around 1970 (Muller 1997, 138-39).

The direct consideration of domestic, <u>internal</u> capitalist institutions in models of democratic performance and income inequality is a fairly recent and not commonly emulated innovation in the literature. Brunk, Caldeira, and Lewis-Beck (1987) present a test of one feature of capitalism (government regulation over the economy) and its effect on democratic performance, with government regulation measured by government consumption as a percentage of its gross domestic product. They find that government regulation has an inverted U-shaped curve on democratic performance, where for 70 countries in 1965 democracy is enhanced by a mixed capitalist/socialist economy, and suffers under a pure free-market capitalist economy and a pure socialist economy. This finding is confirmed for 81 countries in 1995 by Burkhart (2000). A case study focus comes from Nee and Liedka (1997), who in a general effort to return institutional forces into models of income inequality explore the role of the state in China in building a market economy and in reducing urban-rural inequality. They measure capitalism through a

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cluster analysis of survey responses of Chinese to such questions as the proportion of respondents who were employed in non-state activities, how they found those jobs (through the government or through private networks), and the number of private firms in each township surveyed (out of 138 administrative townships surveyed). Their findings suggest that capitalism may well have a place in promoting economic improvements in the mass population, if not absolute improvements in the distribution of income.[2] Thus, there is some theoretical compellance to take into account the intervening domestic capitalist process in models of income inequality and democracy.

Democracy, Capitalism, and Income Inequality Linkages

In summary, synthesizing from the above discussion, I propose several theoretical linkages between democracy, capitalism, and income inequality:

- Democracy can be enhanced by a mixed model of capitalism and socialism, as opposed to either pure neo-liberal capitalism or pure socialism or communism. The mixed model curbs the excesses of extreme capitalism or socialism/communism. This suggests that a parabolic relationship exists between capitalism and democracy, with too much capitalism leading to a decrease in the level of democracy.
- Democracy lessens income inequality because it spreads political power, decreasing the likelihood that economic power will be concentrated in the hands of the few.
- Income inequality reduces the concentration of economic power, which in turn reduces the concentration of political power.
- Capitalism theoretically can aid and abet democracy, through such pathways as resistance on the part of a free economy to the black market as a price-setting mechanism. The more the black market is relied upon, the more distorted the price structure becomes, putting profit from black market in the hands of the small segment of the population who practice rent-seeking, or bribery. The economic power of the rent-seekers can translate into more centralized political power for them, inhibiting democracy.
- Capitalism, first established on a large scale in countries with large Protestant populations, celebrates income inequality and even requires it for economic growth to take place, as the individual initiative is rewarded with increased wealth for those who are successful capitalist players.

There are thus several nonrecursive and multiplicative paths to explore in the income inequality-capitalism-democracy relationship. The schematic drawing below provides a pictoral representation of the complex model. Democracy and income distribution, and their squared polynomial transformation, could cause each other. Capitalism and its square, as well as economic development and its square, could cause both democracy and income distribution. The models that I put forth in this study will reflect these complexities.

Measuring Capitalism

The next task is to measure these concepts. Since capitalism measures are the most recent to come to this literature, their discussion requires some more detail than does discussion of measures of democracy and income inequality.

One promising way to measure capitalism more directly and comprehensively on the cross-national level is to have a panel of experts make informed judgments on capitalist practices country-by-country using precisely defined criteria. Three such measures are readily available, from organizations that measure capitalism in a neo-liberal fashion. Freedom House (1996) has developed, for the years 1995 and prior, a measure of "economic freedom", based on the following criteria: private property ownership, presence of a free market, and low levels of government regulation over the economy. The scores for each country are based on expert assessment of their economies within each of the criteria. Therefore, countries' economies can be compared on the basis of how closely they fit capitalist doctrine. A second measure is from the Heritage Foundation (2000), which in its *Index of Economic Freedom* has assigned scores based on qualitative criteria to countries from 1995 onward based on ten criteria that mirror those of Freedom House. A third measure is from the Fraser Institute's Economic Freedom of the World publication (Gwartney, Lawson, and Block 1996). It is a close cousin of both the Freedom House and Heritage Foundation measures in its methodology and country coverage (about 100 countries per cross-section), but extends the data

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coverage for five-year time periods from 1975, and is quantitatively derived. There is a fair, but not complete, degree of congruence between the measures. For instance, the Pearson product moment correlation between the 1995 Freedom House and Fraser Institute economic freedom measures is .66 (N=49), and the Pearson correlation between the 1995 Heritage Foundation and Fraser Institute economic freedom measures is -.80 (N=47). Measurement reliability is thus a slight threat to valid inference.

For the statistical leverage that is possible with the use of panel data, I employ the Fraser Institute measure of capitalism as an independent variable in a simultaneous equation estimation of democracy and income distribution. The Fraser Institute measures capitalism over a 17 component index, grouped under the broad categories of personal choice, protection of private property, and freedom of exchange (Gwartney, Lawson and Block 1996, xv). Scores from zero to ten are assigned for each component. The components are then summarized into an index.[3] Assessing countries across all of these components of capitalism should enable the analyst to have a more comprehensive sense of the nature of capitalist activity in the country. (A full description of the measurement of each component is available in Appendix A.)

Models

I test for capitalism's impact on both income inequality and democracy in properly specified models in the simultaneous equation environment. I first estimate the model explaining income distribution in the simultaneous equation system. The hypothesized relationship between capitalism and income inequality is a negative one, as envisioned by the traditional literature. Yet the revisionist studies should not be discounted. Hicks and Kenworthy discover that for the OECD countries, neocorporatist structures increase the level of government transfer payments. Capitalism, albeit in a softer form, can co-exist with a social welfare state (Hicks and Kenworthy 1998).

Scholars have discovered that democracy has a second-order polynomial relationship to income distribution (Burkhart 1997, Crenshaw 1992, Rudra 2004). When democratization commences, if there are economic gains from the democratization they are realized by the urban middle classes (who are in better position to capitalize on the change) as opposed to the rural classes. This has the effect of skewing income distribution in the country. Once democratization becomes a more lasting phenomenon, the other classes acquire more income, reducing the skew. However, due to possible multicollinearity problems, I will model democracy in both a linear manner and in a squared polynomial manner.

I hypothesize economic development to have a curvilinear effect on income distribution, in the classic Kuznetsian style, with initial development benefiting the middle and upper classes at the expense of the working class. As economic development continues, the working class demands more of the riches and gets them, in agreement with the middle and upper classes that wish to avoid political instability. This creates an upside down U-shaped curve relationship between economic development and income distribution. (For a modern interpretation of the Kuznets curve that suggests some modifications to the relationship, see Acemoglu and Robinson 2002, and Chong 2004. See Tiruneh 2004 for a theoretical argument that economic development will likely lead to a normal distribution of income in a given society.) The benefits of economic development are attenuated by world-system position once again; therefore, economic development is interacted with the world-system position variables. I anticipate no direct effect of world-system position on either democracy or income distribution. Rather, a non-core world-system position represents a syndrome of conditions (low-wage, labor-intensive industries) that can impede the translation of economic development into either more democracy or less income inequality.

Finally, the age structure of a country has proven to be a highly significant influence on income distribution (Bollen and Jackman 1985, Burkhart 1997). The younger the population, the less the amount of income it earns, and the greater the income inequality.

I next estimate the model of cross-national democratic performance. The hypothesized relationship between capitalism and democracy is a positive one, in keeping with the free market literature. However, I also hypothesized to be a negative one after a certain point, in keeping with the findings of the studies of Brunk, Caldeira, and Lewis-Beck study (1987) and Burkhart (2000). Those studies find that a mixed capitalist / socialist economy seems the best able to explain democratic performance, while controlling for economic development and other control variables.

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Other control variables of interest follow the examples of Bollen and Jackman (1985) and Burkhart (1997). I hypothesize income distribution to have a largely negative effect upon democracy. Ideally I would model income distribution as a second-order polynomial. Countries with middle levels of income distribution tend to be highly democratic, perhaps balancing off higher levels of individual wealth with the need to spread the wealth to avoid uprisings from those who do not gain a large share of the economic pie. However, in the cross-sectionally dominant environment of this study (50 countries and four time points), the problem of lethal levels of multicollinearity possibly precludes the introduction of an additional squared income distribution term to the model.

The finding that high levels of economic development correlate with high levels of democracy has been proven time and time again and is close to an "iron law" of political sociology (Hadenius and Teorell 2005; Lipset 1959; Londregan and Poole 1996; Przeworski and Limongi 1997; Przeworski, Alvarez, Limongi and Cheibub 2000). I hypothesize economic development to have a curvilinear effect on democracy, in the classic logarithmic "diminishing returns" tradition (Jackman 1973, Bollen 1979, Burkhart and Lewis-Beck 1994). The amount of democracy "bought" with another dollar of wealth declines at high levels of economic development. A further economic hypothesis that acts in opposition to modernization theory is world-system theory, a proven negative force on democratic performance (Bollen 1983, Burkhart and Lewis-Beck 1994, Gonick and Rosh 1988). It will be multiplied with economic development, as economic development is conditioned on where a country is placed within the world-system, core or semiperiphery or periphery (Burkhart and Lewis-Beck 1994, 905).

Further structural variables that are important in the literature proposing explanations of variation in cross-national democratic performance include the percentage of the population that is Protestant, to account for an individualistic Protestant work ethic that may favor the democratic individualist political system (Lipset 1959). As well, former British colonies seem better-equipped to turn to democratic rule, with those countries having had representative political institutions put in place prior to decolonization that gained public acceptance (Burkhart 1997, Lange 2003, Smith 1978). Finally, countries with many ethnic groups may find it more difficult to make democracy work in terms of sharing political power (Burkhart 1997).

In full equation form, therefore, the models are as follows, to be estimated on pooled data from 50 countries for the years 1978, 1983, 1988, and 1993 (the countries are listed in Appendix B):

$$I = a_1 + b_1D + b_2D^2 + b_3E + b_4E^2 + b_5ExSP + b_6ExP + b_7C + b_8C + b_9C2 + B_{10}A + \mu_1\ D = a_2 + b_{11}I + b_{12}I^2 + b_{13}E + b_{14}ExSP + b_{15}ExP + b_{16}C + b_{17}C^2 + b_{18}B + b_{19}PR + b_{20}ETH + \mu_2$$

Where: D = democracy; I = income distribution; I^2 = income distribution squared; E = economic development; ExSP = economic development multiplied by semiperipheral world-system position; ExP = economic development multiplied by peripheral world-system position; PR = percentage of the population Protestant; B = British colony; ET = ethnic fractionalization; C = capitalism; C^2 = capitalism squared; D^2 = democracy squared; A = age structure of population; a_1-a_2 & b_1-b_{20} = parameters to be estimated; μ_1 , μ_2 = error terms.

(Any modifications to these models, especially with the second-order polynomial variables, will be discussed in the Results section of this paper.)

(Figure 1 about here)

Data

The Fraser Institute measure of capitalism, discussed earlier, and the variable of greatest interest in this exercise, is taken for the years 1975, 1980, 1985, and 1990, respectively. Additionally, as with the measurement of capitalism, researchers must confront the issue of data quality and measurement when estimating models of democracy and income distribution. The controversy continues as to the proper measurement of democracy, whether it be more subjective or objective (Beetham 1994, Bollen 1993, Bollen and Paxton 1998, Dahl 1971, de Soysa 2003, Inkeles 1991, Munck and Verkuilen 2002, Vanhanen 1997). One of the better subjective measures is POLITY IV, a corrected version of the popular POLITY dataset (Jaggers and Gurr 1995). POLITY IV is an institutional measure of democracy that avoids country assessment based on the provision of social and economic goods, a feature of the Freedom House Freedom in the World measure that calls into question that measure's use in models containing direct measures of capitalism (Freedom House 1998). The Freedom House measure has been found to contain less

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bias than other democracy measures (Bollen 1993). Any measure that correlates well with it is worthy of data consideration. The Pearson correlation between POLITY IV (democracy scale minus autocracy scale) and Freedom House (political rights scale plus civil liberties scale) democracy scores is .91, N=2574, for years 1972-1993 (Burkhart 1998). The measures mirror each other well. As is true for all the dependent and independent variables except for capitalism (as noted above), for years of coverage I take POLITY IV measures for 1978, 1983, 1988, and 1993, for data comparability purposes.

Measures of income inequality have had an equally slippery past. Most problematic has been the varying units of analysis in the actual measure: household versus individual income, surveys of urban areas generalized to the rural population, pre-tax versus post-tax measurement. All of these variations make the use of older income inequality datasets questionable. However, scholars have gone to some trouble to improve the measure. While some newer datasets, such as the Deininger and Squire dataset, have potential, at the present time I take advantage of one of the proven datasets for this exercise, that of Hoover (1989). The Hoover dataset has a more complete country coverage than does the Deininger and Squire dataset, especially for the 1970s. Hoover cleaned 1970s estimates and provides a dataset of the results. This dataset has been referenced and utilized in other published work (Burkhart 1997, Firebaugh 2000). World Bank estimates correlate at .87 with the Hoover data. I augment the Hoover measures with those from the World Bank to add more recent clean data. The data are for years 1978, 1983, 1988, and 1993. Use of these data avoids the measurement traps alluded to earlier. The measure of income distribution is the percentage of total income received by the top 20% of the wealthy in each country. Higher scores indicate an income distribution skewed toward the upper classes and away from the middle and lower classes.

As for the other control variables, economic development is measured as the base 10 logarithm of energy consumption per capita, kilograms of coal equivalent, for years 1978, 1983, 1988, and 1993 (various issues of the United Nations Statistical Yearbook). The use of energy consumption data as a proxy for economic development is well-established, especially to more accurately establish levels of development in Communist countries during the Cold War era (Lewis-Beck 1979). World-system position is measured as dummy variables for semiperipheral and peripheral status for each country, by Burkhart and Lewis-Beck. The age structure of the population is measured as the percentage of the population under the age of 14, by the World Bank (years 1978, 1983, 1988, and 1993). The Protestant composition of the population is measured for the latest year available as a percentage by Barrett, and is logged to the base 10 after adding one point to the measure to avoid the undefined log value (Barrett 1982). The ex-British colony status is a dummy variable (1=yes, 0=no), from the historical record. The ethnic composition index, running from zero to one on an interval scale, comes from Taylor and Hudson, for year 1965 (Atlas Narodov Mira version of the index), and is the probability that two citizens will speak the same language (Taylor and Hudson 1972, 216).

Methods

I assume that democracy and income distribution cause one another simultaneously for much of this analysis. This seems likely to be the case. As democracy influences income inequality (as found in the single equation and multiequation studies), it should be possible that the class inequality augments political inequality, driving democratic performance scores even lower. The appropriate statistical methodology is two stage least squares (Berry 1984).

Instrumental variables are used to represent the endogenous variables (in this study, democracy and income inequality) in two stage least squares modeling. The instrumental variables are constructed by using a similar technique to Burkhart (1997).[4] I utilize the "xtivreg" procedure with random effects in the Stata 8 software package for model estimation, Balestra and Varadharajan-Krishnakumar estimator.

Another statistical issue, multicollinearity, appears to be less of a threat to valid inference. While diagnosis is difficult in the 2SLS environment, tests on the models using OLS (variance inflation factor scores, or VIF) show that the VIFs are above five (a common rule of thumb for high multicollinearity, according to Studenmund 1982, 483-500) only for the linear and squared economic development and capitalism variables. It still pays to be cautious, though, with so many polynomial terms in the models.

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Results and Discussion

Is it democracy that influences income distribution and vice versa, or is it capitalism, or do both have independent impacts?

(Table 1 about here)

I estimate the models in sequential fashion, testing for the robustness of the results. I first estimate a series of baseline models (Models 1.1 & 1.2, and 2.1 & 2.2). Absent from these models are the capitalism variables, and in Models 1.1 and 1.2, the square of democracy and income distribution, respectively, in order to check indirectly for multicollinearity. I then estimate a series of models without the square of capitalism, to test for a linear impact of capitalism on income distribution and democracy (Models 3.1 & 3.2, and 4.1 & 4.2). Models 3.1 and 3.2 also omit the square of democracy and income distribution for the multicollinearity check. Finally, I estimate the full model (Models 5.1 & 5.2, and 6.1 & 6.2) as described earlier.

The results, on balance, indicate support, albeit relatively weak, for capitalism's hypothesized impact on both democracy and income distribution as well as democracy's and income distribution's hypothesized direct impact on each other. Capitalism's impact on democracy is positive in Model 3.2, which confirms the notion that capitalism leads to a less corrupt environment and a more open polity. It is significant at the .15 level, one-tailed test, with the one-tailed test being appropriate with directional hypotheses (Mohr 1990). Capitalism also has a positive effect on the income distribution variable (Model 4.1), though at the .10 level, meaning that increasing levels of capitalism leads to more income controlled by the top 20 percent of the population. There is no evidence of a second-order relationship betweeen either capitalism and democracy (Models 5.2 and 6.2), or capitalism and income distribution (Models 5.1 and 6.1). Hence, the findings reported in the Burkhart 2000 article are not confirmed over a longer time frame: a direct measure of capitalism does not have a parabolic impact on democracy.

There is evidence of a second-order relationship between democracy and income distribution, with higher levels of democracy leading to declining levels of income inequality (Models 4.1 and 6.1), though significance is only at the .15 level. Nevertheless, the "tipping point" at which this shift from worsening income inequality to declining levels of income inequality is given by the formula $(-ß_1) / 2ß_2$, where $ß_1$ is the parameter estimate for the linear democracy variable and $ß_2$ is the parameter estimate for the squared democracy variable (Berry and Feldman 1985, 59). Solving the formula for each equation yields an estimate of the tipping point of 10.25 for Model 4.1, and 10.72 for Model 6.1. This is roughly halfway on the 0 to 20 scale for POLITY IV. This generally confirms the results of Burkhart (1997). While there is no second-order relationship when democracy becomes the dependent variable and income distribution becomes the independent variable, worsening income distribution is directly associated with higher levels of democracy (Models 1.2, 3.2, and 5.2) though statistical significance once again is only at the .15 level. Since higher levels of capitalism increase income inequality, the income distribution variable itself may simply reflect the growing trend toward worsening income inequality worldwide.

The other control variables perform roughly as expected in both models. Economic development is significant in most of the model estimates, and its significant square (at the .10 to .15 level, depending on the model) confirms the Kuznets hypothesis of an upside down U-shaped curvilinear relationship with income distribution. Economic development makes for higher levels of income distribution to a point, whereupon the country is developed enough for all classes to feel the effects and income distribution becomes relatively speaking more equal. The "tipping point" at which this shift from negative to positive influence on the part of economic development takes place is about 363 to 437 kilograms of oil equivalent fuel consumed per capital. Countries in the lower middle ranges of economic development (African countries such as Mauritius and Zambia; Latin American countries such as Bolivia and Costa Rica; Southeast Asian countries such as Indonesia, the Philippines, and Thailand) have consumed energy at this level during the time period examined.

Where the country is placed in the world economic system (external capitalist pressure on the country) has an effect on the country's democratic standing and on how well economic development translates into improved democratic performance. Those countries in the semiperipheral and peripheral categories had significantly higher income inequality scores than did those countries in the core. On the other hand, world-system position had no impact on a country's level of democracy.

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Non-economic effects on democracy and income distribution are also present in the model estimations. Protestant population, contrary to published work, has a consistently negative and significant impact on democratic performance. This could be due to the recent wave of democratization, which took place mainly in non-Protestant countries. Also contrary to published work, a former British colony is not significantly more democratic. The recent democratization pattern has taken place in non-British colonies. An ethnically more divided country does have difficulties in the democratic performance department, while a younger population does lead to higher levels of income inequality.

Conclusion

Several caveats, relating to the dataset itself and the methods employed in the paper, are in order before coming to firm conclusions based on the analysis. The medium-N dataset I use is an older one, and significant post-Cold War data for a larger, more representative swath of countries may well reveal different results. Another avenue of research worth exploring is the decomposition of the Fraser Institute capitalism index, to discern what exactly it is about capitalism that makes it influential in models of democratic performance and income distribution. The specification of the variables is admittedly limited: at some point, specifying both democracy and income distribution as second-order polynomial will be essential for stronger statistical inference. Capitalism in many of the smaller sub-Saharan African countries may be better measured simply by economic development. All of these caveats await future research.

For now, one can conclude that the results from this 50 country, pooled study show promise for using domestic capitalism as an important control variable in models of democracy and income distribution. Capitalism, in both the cautious theoretical spirit of Almond (1991), Dahl (1993), and Di Palma (1997), and the equally careful empirical spirit of the Brunk et al. (1987) and Burkhart (2000) studies, has a weakly positive impact upon democratic performance, controlling for economic and non-economic forces. Combined with the negative impact capitalism seems to have on income distribution, one might be equally cautious about the popularly-espoused positive impact of capitalism on global society.

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APPENDIX A: CODING OF AND SOURCES FOR THE COMPONENTS OF THE FRASER INSTITUTE MEASURE OF DOMESTIC CAPITALISM

1. Average Annual Five Year Growth Rate of Money Supply—Annual Growth Rate of Potential GDP. Coding: Countries were divided into equal sized groups. The countries with the lowest rate of expansion of the money supply were assigned the code of 10, and so on down to the group of countries with the highest rate of expansion receiving a code of zero. Money expansion was measured by subtracting the average growth of real Gross Domestic Product during the ten years prior to the year for this measure. (1975, 1980, 1985) from the compound average annual growth rate of the money supply (M1) during the five year period prior to the year for this measure. Sources: World Bank, World Tables 1994; International Monetary Fund, Monthly International Financial Statistics.
2. Standard Deviation of Annual Inflation Rate, Last Five Years. Coding: Countries were divided into equal sized groups. The countries with the lowest standard deviations in their inflation rates were assigned the code of 10, and so on down to the group of countries with the highest variability in its inflation rate receiving a code of zero. The inflation rate was calculated yearly. Sources: For the inflation rate, the GDP deflator provided by the World Bank, World Tables 1994.
3. Freedom of Residents to Own Foreign Money Domestically. Coding: Countries were either given a 10 (legal to own a foreign currency bank account) or a zero (illegal to own a foreign currency bank account). Sources: World Currency Yearbook, table on legality of owning a foreign currency bank account; International Monetary Fund, Exchange Arrangements and Exchange Restrictions.
4. Freedom of Residents to Maintain Bank Accounts Abroad. Coding: same as for Component 3. Sources: same as for Component 3.
5. Government General Consumption Expenditures as a Share of Gross Domestic Product. Coding: Countries were divided into equal sized groups. The countries with the lowest levels of government general consumption as a share of GDP were assigned the code of 10, and so on down to the group of countries with the highest levels of government spending receiving a code of zero. Sources: World Bank, World Tables; International Monetary Fund, Monthly International Financial Statistics.
6. Government-Operated Enterprises as a Share of the Economy. Coding: Countries were given a score of 0, 2, 4, 6, 8, or ten based on the following criteria: (0) estimated share of public sector businesses was greater than 30% of the economy, (2) estimated share of public sector businesses was between 20% and 30% of the economy, (4) most of large enterprises were owned by the government and estimated share of public sector businesses was between 10% and 20% of the economy, (6) government enterprises confined to transport, communications, and energy, (8) government enterprises confined to energy, (10) government enterprises only responsible for less than 1% of the country's economic product. Sources: OECD studies, World Bank studies (in Africa), International Monetary Fund Government Finance Statistics Yearbook.
7. Freedom from Government Regulations and Policies that Cause Negative Real Interest Rates. Coding: Countries were given a score of 0, 2, 4, 6, 8, or ten based on the following criteria: (0) borrowing and lending real interest rates were negative by 10% or over or hyperinflation rates eliminated for all intents and purposes the credit market of the country, (2) borrowing or lending real interest rates were negative by 10% or over, (4) borrowing and lending real interest rates were negative up to 10%, (6) borrowing or lending real interest rates were negative up to 10%, (8) borrowing or lending real interest rates were positive but the differential between the two was over 8%, (10) real interest rates low and positive. Sources: International Monetary Fund, International Financial Statistics Yearbook.
8. Transfers and Subsidies as a Percentage of Gross Domestic Product. Coding: Countries were divided into groups of equal number. Countries with the smallest transfer sectors (for all levels of government, excluding intergovernmental transfers) received a code of 10, and so on down to the countries with the largest transfer sectors receiving a code of zero. Sources: International Financial Statistics Yearbook, World Tables 1994, Inter-American Development Bank Economic and Social Progress in Latin America 1994 Report.
9. Top Marginal Tax Rate. Coding: Countries with the lowest marginal tax rates and the highest income thresholds at which they took place were assigned a code of 10, and so on down through the scale, while countries where the opposite conditions obtained received codes of zero. Source: Price Waterhouse, Individual Taxes: A Worldwide Survey.
10. The Use of Conscripts to Obtain Military Personnel. Coding: Countries that used wage payments rather than conscription as the mechanism for obtaining military personnel received a code of 10, while countries using the opposite tactic received a code of zero. Source: International Institute for Strategic Studies, The Military Balance.

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11. Taxes on International Trade as a Percentage of Exports Plus Imports. Coding: Countries were grouped in equal groups. Those with the lowest average tax rates on international trade were given a code of 10, and so on down the scale, with countries with the highest average tax rates on international trade given a code of zero. Sources: Government Finance Statistics Yearbook, World Tables.
12. Difference Between the Official Exchange Rate and the Black Market Rate. Coding: Countries were grouped in equal groups. Those countries that had the lowest (or zero) black market premium (difference between the black market rate for local currency and the U.S. dollar) were assigned a code of 10, while those countries that had the highest black market premium were assigned a code of zero. Source: International Currency Analysis, World Currency Yearbook.
13. Actual Size of Trade Sector Compared to the Expected Size. Coding: Cross-national regression analysis indicated the expected trade sector size for each country. Trade sector size was predicted by five variables: geographic size, population, land-locked or seacoast, trading partners within 150 miles of the country's borders but less than half of the population residing within that 150 mile range, more than half of the population residing within that 150 mile range. Countries' actual trade sector as a share of GDP was then compared with the expected trade sector size. Countries were grouped equally, and those with larger than expected trade sectors received a code of ten, and those that were smaller than expected were coded zero. Sources: World Tables, World Development Report.
14. Restrictions on the Freedom of Citizens to Engage in Capital Transactions with Foreigners. Coding: Countries giving great freedom to its citizens to engage in foreign transactions (investments abroad) were coded 10, and so on down the scale, with those countries prohibiting such transactions coded zero. Source: International Monetary Fund, Exchange Arrangements and Exchange Restrictions (descriptive profiles).

Source for above descriptions: Gwartney, Lawson, and Block 1996, 18-37

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APPENDIX B—COUNTRIES IN DATASET

Argentina	Italy	Thailand
Australia	Japan	Trinidad and Tobago
Bolivia	Kenya	Tunisia
Brazil	Malawi	Turkey
Canada	Malaysia	United Kingdom
Chile	Mauritius	Uruguay
Colombia	Mexico	United States
Costa Rica	Netherlands	Venezuela
Côte d'Ivoire	Norway	West Germany (Germany in 1993)
Denmark	Pakistan	Zambia
Ecuador	Panama	
Egypt	Peru	
France	Philippines	
Gabon	Portugal	
Honduras	Senegal	
Hungary	Sierra Leone	
India	Spain	
Indonesia	Sri Lanka	
Iran	Sweden	
Ireland	Tanzania	

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TABLE 1: 2SLS POOLED REGRESSION RESULTS

DVs→ Model→ IVs↓	Inc 1.1	Dem 1.2	Inc 2.1	Dem 2.2	Inc 3.1	Dem 3.2	Inc 4.1	Dem 4.2	Inc 5.1	Dem 5.2	Inc 6.1	Dem 6.2
Democracy	-.29 (.85)		1.39 (1.26)		-.33 (.96)		**1.64**† **(1.50)**		-.30 (.82)		**1.93**† **(1.51)**	
Democracy^2			**-.07**† **(1.32)**				**-.08**† **(1.38)**				**-.09**† **(1.40)**	
IncIneq		**-.27**† **(1.50)**		-.73 (.07)		**-.27**† **(1.55)**		12.16 (.87)		**-.27**† **(1.55)**		17.54 (.74)
IncIneq^2				.00 (.05)				-.12 (.91)				-.17 (.76)
EconDev	11.30 (.99)	**4.01**** **(2.22)**	**19.61**† **(1.49)**	4.05 (1.22)	9.84 (.84)	**3.57**** **(1.96)**	**19.19**† **(1.49)**	5.50 (.95)	9.07 (.77)	**3.55*** **(1.93)**	**18.80**† **(1.40)**	7.30 (.81)
EconDev^2	-2.04 (1.03)		**-3.72**† **(1.61)**		-1.84 (.84)		**-3.75*** **(1.65)**		-1.70 (.83)		**-3.66**† **(1.55)**	
ED x Semi	**1.17**† **(1.39)**	-.38 (.51)	.66 (.62)	-.37 (.21)	**1.25**† **(1.43)**	-.24 (.33)	.78 (.74)	-2.04 (.66)	**1.29**† **(1.47)**	-.24 (.33)	.67 (.61)	-3.01 (.62)
ED x Per	1.03 (.98)	-.80 (.91)	**1.68**† **(1.33)**	-.79 (.43)	.99 (.89)	-.80 (.93)	**1.74**† **(1.40)**	-2.73 (.80)	1.05 (.94)	-.80 (.93)	1.59 (1.23)	-3.79 (.71)
Capitalism					.29 (.68)	**.61**† **(1.46)**	**.73*** **(1.87)**	1.16 (1.03)	.87 (.44)	.35 (.17)	1.62 (.95)	3.62 (.52)
Capitalism^2									-.06 (.30)	.03 (.12)	-.10 (.54)	-.23 (.36)
PopAge	**.36**** **(2.22)**		.15 (1.00)		**.34**** **(2.06)**		**.24**† **(1.54)**		**.36**** **(2.04)**		**.22**† **(1.32)**	
BritColony		1.42 (.63)		1.62 (.65)		1.74 (.79)		-.82 (.16)		1.72 (.77)		-.97 (.14)
Protestant		**-1.34**† **(1.36)**		**-1.41**† **(1.29)**		**-1.41**† **(1.43)**		-2.20 (.97)		**-1.41**† **(1.43)**		-2.74 (.82)
ELF		**-4.25**† **(1.46)**		-4.25 (1.23)		**-4.62**† **(1.61)**		-6.36 (.85)		**-4.62**† **(1.61)**		-7.59 (.73)
Constant	24.85* (1.47)	18.19* (1.48)	17.69 (.89)	29.26 (.12)	27.17* (1.54)	17.08† (1.41)	10.23 (.52)	-295.11 (.81)	25.89† (1.39)	17.72† (1.32)	9.32 (.46)	–439.92 (.70)
R^2	.51	.38	.52	.38	.50	.40	.54	.14	.51	.40	.52	.10
N	190	190	190	190	190	190	190	190	190	190	190	190

Where for column headings: Inc = income distribution score, Dem = POLITY IV democracy score.
Where for row headings: Democracy = Vanhanen ID democracy score, Democracy^2 = Democracy x Democracy, IncIneq = income distribution score, IncIneq^2 = IncIneq x IncIneq, EconDev = energy consumption per capita, EconDev^2 = EconDev x EconDev, ED x Semi = EconDev x semiperipheral world-system position, ED x Per = EconDev x peripheral world-system position, Capitalism = Fraser Institute economic freedom measure, Capitalism^2 = Capitalism x Capitalism, PopAge = percentage of population under age 14, BritColony = British colony dummy variable, Protestant = percentage of population Protestant, ELF = ethnolinguistic fractionalization, Constant = constant term, R^2 = R-squared statistic, N = number of cases, ** = significant at .05, * = significant at .10, † = significant at .15, one-tailed test. Figures in parentheses are absolute z-scores.

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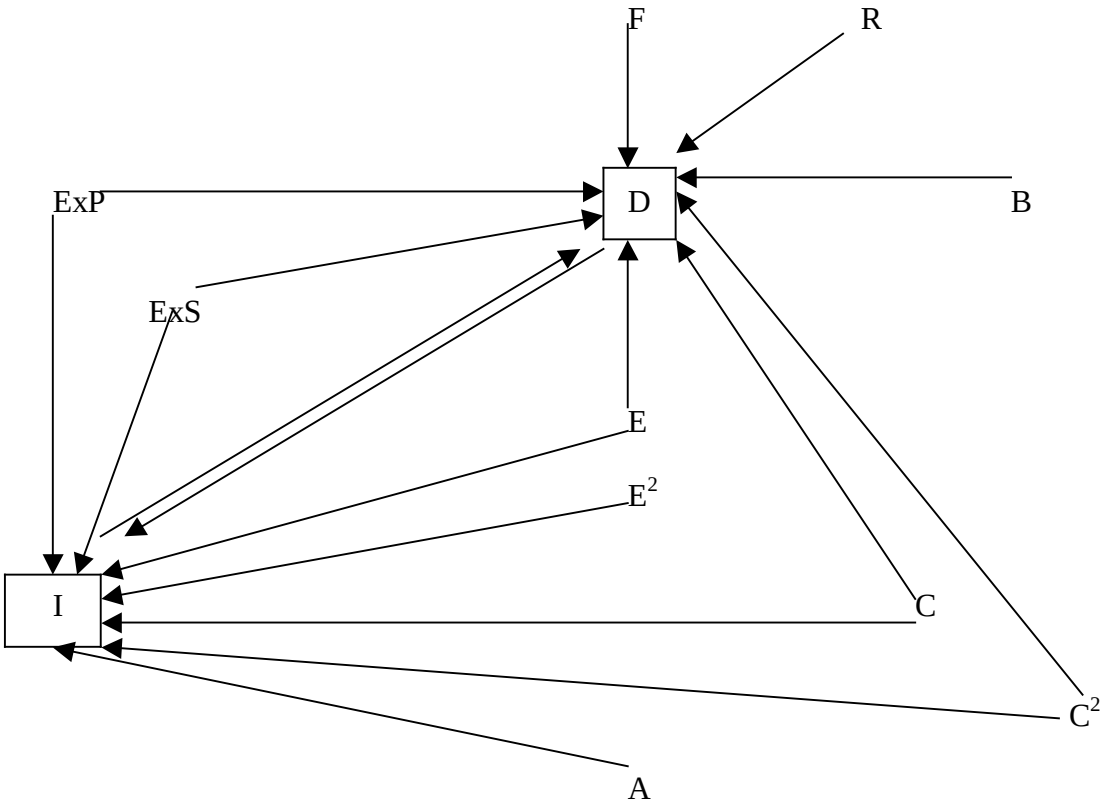
FIGURE 1: SCHEMATIC DRAWING OF THEORY OF CAPITALISM, DEMOCRACY, AND INCOME INEQUALITY



Where:

A = % of population 14 years and younger
B = former British colony
C = capitalism
C^2 = capitalism squared
D = democracy
E = economic development
E^2 = economic development squared
ExP = economic development multiplied by peripheral country
ExS = economic development multiplied by semiperipheral country
F = ethnolinguistic fractionalization
I = income inequality
R = Protestant population

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NOTES

[1] That is, if one believes dependency can be measured at all. Some argue that dependency is best analyzed in historical terms rather than through quantification (Cardoso and Faletto 1979).

[2] Benjamin et al. dissent, though, in observing that income inequality has increased in rural China in the 1990s (Benjamin, Brandt, Glewwe and Li 2002).

[3] I use the Is1 summary index as provided by the Fraser Institute. It is weighted by the views of 18 economists who participated at prior conferences sponsored by the Fraser Institute on measuring economic freedom. The economists were asked to rank the components as to each other's importance in measuring economic freedom by assigning weights to them. The consensus ordering of the components went as follows: (1) marginal tax rates, (2) transfers and subsidies, (3) trade taxes, (4) government enterprises, (5-tie) government consumption, (5-tie) exchange rate controls, (7) inflation variability, (8) money expansion, (9) size of trade sector, (10) conscription, (11) credit market, (12) foreign currenty accounts, (13) deposits abroad (Gwartney, Lawson and Block 1996, 38-39).

[4] The following exogenous variables were used to construct the instrumental variables for income distribution and income distribution squared: energy consumption per capita, energy consumption per capita squared, energy consumption per capita multiplied by semiperipheral world system position, energy consumption per capita multiplied by peripheral world system position, percentage of population aged 14 and under, British colonial status, logged base ten percentage of the population Protestant, ethnic and linguistic fractionalization index, and daily caloric intake (data from the Food and Agricultural Organization). The following exogenous variables were used to construct the instrumental variables for democracy and democracy squared: energy consumption per capita, energy consumption per capita squared, energy

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consumption per capita multiplied by semiperipheral world system position, energy consumption per capita multiplied by peripheral world system position, percentage of population aged 14 and under, British colonial status, logged base ten percentage of the population Protestant, ethnic and linguistic fractionalization index, and radios per capita (data from the United Nations Statistical Yearbook).