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Democratic Disadvantage**

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Sovereign Debt: Election Concerns and the Democratic Disadvantage*

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Abstract

We examine default decisions under different political systems. If democratically elected politicians are unable to make credible commitments to repay externally held debt, default rates are inefficiently high because politicians internalize voter utility loss from repayment. A politician who is motivated by election concerns is more likely to default in order to avoid voter utility losses, and, since lenders recognize this, interest rates and risk premia rise. Therefore, democracy potentially confers a credit market disadvantage. Institutions that are shielded from political competition, such as independent central banks, may ameliorate the disadvantage by adopting a more farsighted perspective, taking into account how interest rates respond to default risk. Using a numerical measure of institutional farsightedness obtained from the Government Insight Business Risk and Conditions database, we find that the observed relationship between credit-ratings and democratic status is indeed strongly conditional on farsightedness. With myopic institutions, democracy is estimated to cost on average about 2.5 investment grades. With farsighted institutions there is, if anything, a democratic advantage.

KEYWORDS: Sovereign debt, Default, Risk premia, Autocracy, Democracy, Institutions

JEL CLASSIFICATION: H63, F55, D72, D82, H75, O43, C72.

1 Introduction

Recent years have seen many democracies defaulting¹(e.g. Greece and Argentina) due to the economic and political fallouts of austerity policies. In Greece, a new government came into power on the basis of an explicitly anti-austerity platform. On the other hand, autocracies such as Romania in the 1980s chose not to default despite overwhelming pressure from its citizens to do so. The literature however has argued that there is a democratic advantage. In this paper we revisit the question of whether democracy enhances or harms the credibility of repayment by sovereign borrowers. The question is important because once high levels of debt are incurred, repayment may be very costly to the citizens, with consequent defaults and potentially large repercussions on the world economy. Democracy may lead to too much default, because the default policy that maximizes the representative citizens' utility after the state is realized does not maximize the citizen's *ex-ante* expected utility.

There is no consensus in the empirical literature regarding the effect of regime type on sovereign debt.² Our synthetic theoretical explanation may help make sense of the conflicting evidence. We also provide additional supporting evidence. Previous theoretical arguments for a democratic advantage tended to hinge on the assumption that citizens prefer repayment

¹Default is broadly defined and includes partial default e.g when creditors face a haircut.

²There is mixed evidence on the relationship between risk premia on sovereign debt, measured by credit ratings agencies, and the extent of democracy. Saiegh (2005) finds that democracies are, if anything, more prone to rescheduling debts (which is quite consistent with our theory), and also finds that interest rates are not significantly different across regimes. Archer et al (2007) found that the extent of democracy as measured by the POLITY2 democracy score had no explanatory power for credit rating in a sample of fifty developing countries between 1987 and 2003. McGillivray and Smith (2003) find some support for the hypothesis that leadership turnover improves sovereign bond premia. O Neal (1994) finds that financial returns to U.S. foreign direct investment over the period 1950-1984 were higher in countries with authoritarian regimes. Whilst higher (marginal) returns can very easily be reconciled with greater risk premia in economic theory, others have also raised the possibility that autocracy may underpin political stability.

even though leaders might want to default.³ Citizens are assumed to want repayment because they suffer high costs of default. But often it seems to be the burden of repayment that is the electorate's main immediate concern: the government budget constraint necessarily requires austerity policies - either increased taxation, or contraction of certain public services (and therefore public sector employment) and reduced income (either directly from transfers or indirectly via weakened demand in the economy). Political pressure from citizens would then *favour* default.

A key issue, largely neglected in previous literature, is the identity of the lender.⁴ Schultz and Weingast (2003) argue that constraints on government, which in large part means democracy, strengthens the creditors' capacity to impose penalties on the sovereign borrower. This argument assumes that debt is held domestically. The political disapprobation of default would be stronger when the debt is held domestically at least when the median voter is a debt holder who would suffer from default. For example, if default reduces pensions, then significant electoral consequence is conceivable. Schultz and Weingast (2003) discuss the possibility that default could endanger stability within the domestic financial system. Default could imply a negative shock to domestic banks' net worth, with standard consequences in terms of increased risk premia and potential insolvency that would likely translate into widely felt economic costs.⁵ But when debt is held mainly externally, by foreigners, then

³North and Weingast (1989) and Schultz and Weingast (2003) argue that democracy increases the set of credible sanctions that lenders can apply to governments that default on sovereign debt. Default is argued to be unpopular, hence leads to leader replacement. In contrast, autocrats have greater facility to strategically default. Recognizing this temptation, lenders perceive differential risk: the cost of borrowing is therefore hypothesized to be higher for autocracies. Relatedly, Huntington (1968) argues that democratic status is neither necessary nor sufficient as a precondition for political order. Empirically Przeworski and Limongi (1993) conclude that the relationship between economic growth and political regime is far from clear-cut.

⁴See however Guembel and Sussman (2009) who argue that debt is more likely to be repaid when the median voter is a domestic debt-holder.

⁵Schulz and Weingast (2003) actually acknowledge that their argument is "weaker in the case of developing

these channels are closed off and electoral processes might well work in the opposite direction.

On the other hand, as far as leaders are concerned, there is evidence that whether autocrats or democratically elected, leaders may be less inclined to default than their citizens. For example Ban (2012) attributed (autocratic) Romania's "irrational" decision to repay its foreign debt in the 1980s, despite the high cost of repayment to the population, to the leader's ideological commitment to policy independence. More recently, Hausmann (2014) described the repayment decision of the (democratically elected) Venezuelan government as "a signal of its moral bankruptcy". In many circumstances, the decision to default entails externally imposed economic or even political restructuring, with associated costs for the incumbent. Reputational concerns, which in part underpin sovereign borrowing without collateral, as analyzed by Eaton and Gersovitz (1981) and Kletzer and Wright (2000), might weigh heavily on incumbents who expect to continue to hold office and would like future access to credit.⁶ Leaders of all colours and persuasions conceivably do not like default.

Even if the leader is inclined to repay, election concerns force him to internalise the citizens' costs of doing so. The result is a time inconsistency problem. If the representative citizen could choose a default policy ex-ante, before the debt is incurred, he would take into account that the interest rate will depend on the default policy. Whether debt is held externally or domestically, in our model we capture the fact that all citizens suffer in the long run when they default but in the short run, the benefits of defaulting are higher for tax payers when the country is subject to a bad shock.⁷ Therefore, the citizen's ex-ante optimal

economies whose debt is held entirely by foreigners" (in their footnote 49).

⁶However, Bulow and Rogoff (1989) argue that reputation cannot underpin true lending contracts to sovereign borrowers under fairly general conditions.

⁷The model has a representative citizen - there is no conflict between citizens as we assume externally held debt.

policy has a low rate of default. However, this policy is not time-consistent: once the debt has been incurred, the representative citizen is inclined not to repay it. Democracies where the leaders are driven by short-term election concerns are therefore prone to excessive default - the democratic disadvantage. Institutions that can force repayment of debt even against the will of the representative citizen are social welfare enhancing. Therefore, the democratic disadvantage is contingent on the quality of institutions.

We focus on external debt⁸ and, contrary to existing literature, we emphasize the possibility of a democratic *dis*advantage. Although there are negative repercussions of default, for both leaders and citizens, repayment unambiguously implies a consumption loss to the median voter. Under all political systems it is the tax-paying masses that are liable for the debt. In bad states of the world, any consumption loss implies a large utility loss for them. Election concerns forces the democratically elected leader to internalize this utility loss in the default decision. An autocrat may be less sensitive to the plight of the masses and therefore less inclined to default. If the lending market recognizes the lower risk then observed risk premia will be lower under autocracy. On the other hand, as we argued above, a mature democratic society might also have low risk premia if the decision-making is not very sensitive to immediate election concerns.

Our theoretical analysis thus motivates us to consider two alternative scenarios under democracy: myopic and farsighted institutions. In democracies with good institutions, leaders are able to commit to the ex-ante optimal default policy, which takes into account the endogenous response of the market interest rate. We call these governments (leaders) "farsighted". In other democracies such institutions are absent and leaders cannot make any

⁸The model extends to settings where the median voter is not a debt-holder.

long-run commitment to repay. We call these governments (leaders) "myopic". Default rates (and hence risk premia and interest rates) are therefore higher under myopic government. Our proxy for farsighted decision making is the existence of institutions that are shielded from short term electoral politics while making long term decisions.

In order to test the democratic disadvantage we build on Beaulieu et al (2012), which represents the current state of the art in the empirical literature. This benchmark is particularly demanding for the hypothesis of this paper as these authors find in favour of the democratic advantage. Our theory suggests that income levels, institutions and the whether debt is held externally or domestically should matter for repayment decisions and risk premia.

Thus, our first point of departure from Beaulieu et al (2012) is to split their sample into OECD and non-OECD countries. The former are richer, have better institutions and debt is held domestically- our theory predicts that OECD democracies should do much better. The estimation results strongly point to conditionality, even controlling for the level of GDP: in the non-OECD subsample in particular the empirical relationship between a country's credit rating and its democratic status is negative - reversing the previous finding. This relationship is borderline significant in the case of the Standard & Poor credit ratings.

Our main theoretical result suggests that the response of observed credit ratings to democracy is strongly conditional on a measure of institutional quality that explicitly measures farsightedness. Consistent with the theory, when government is measured to be myopic there is a strong democratic disadvantage. In such circumstances democracy is estimated to cost about 2.5 investment grades on the standard 16-point grading structure employed by Moody's and Standard and Poor. On the other hand when government is measured to be far-sighted there is, if anything, a democratic advantage.

Arguably the democracy indicator variable fails to capture the true extent of leader-accountability. Elected leaders may be confident of continued incumbency, and indeed autocrats may be subject to replacement even if not by the ballot. We show that our results are robust to replacing the democracy indicator with a measure of political competition, again finding that an increased likelihood of replacement is associated with lower credit ratings.

Our theory suggests that, if we do not control for institutional quality, there is a non-monotonic relationship between the degree of democracy and credit ratings. An autocratic leader does not internalize the citizen's cost of repayment, and the credit rating is high. In the initial stages of democracy, political competition suffers from a lack of constraining institutions, and the credit rating deteriorates. As the democracy matures, it develops institutions that constrain the power of the executive, improving the credit rating. Consistent with this, when the democratic regime is measured using the PolityIV continuous democracy score we find a U-shaped relationship between credit rating and democracy. Intermediate degrees of democracy are associated with lower credit ratings. Democracies scoring most highly on the PolityIV are associated with better credit ratings. The 'pure' democracies quantifiably are mature - for example as measured by the age in years of the largest party. We thus interpret this estimated U-shape as consistent with the theoretical work, in that mature democracies are likely to be better able to exercise a rational farsighted default policy.

To summarize, our theoretical model potentially reconciles various contradictory findings in the literature by showing that the relationship between democracy and default rates is conditional on institutional structure; if this is not controlled for then the relationship may be non-monotonic. Our empirical results broadly support these predictions.

The rest of the paper is organized as follows. Section 2 builds a model of repayment

where leader and citizen preferences diverge. Section 3 then tests our two main predictions. Finally section 4 concludes.

2 Theory

2.1 Basic Assumptions

There is a country with a set of identical citizens normalized to size one. There are two periods, “today” and “the future”. Today, the country has access to an (indivisible) investment project. The cost of implementing the project is \$1, which must be financed by borrowing from a foreign bank as savings are too low.⁹ After the debt is incurred, the project is implemented and the representative citizen’s income, denoted $\theta \geq 0$, is realized. Assume θ is a random variable with cumulative distribution F . We refer to θ as the state of the world. Throughout, we assume the project is implemented and focus on the repayment decision. After θ is realized, the country’s leader must decide to either repay the loan, or to default. Let R denote the required repayment. (Hence $R \equiv 1 + r$, where r is the interest rate).

The time line within “today” is as follows. First, the bank sets R and the country borrows \$1. Then, the project is implemented and the state θ is realized. Finally, the country either repays R in full, or defaults.

The credit market is competitive, hence banks make zero expected profit. In equilibrium, banks have rational expectations about the probability p of repayment. Since the expected

⁹The theory is robust to domestically held debt as long as the median voter is a tax-payer rather than a debt holder.

repayment is pR , the bank makes zero profit when

$$pR = 1. \tag{1}$$

Hence the bank will set the required repayment to $R = 1/p$.

Since today's consumption must be non-negative, repayment is only feasible if $\theta \geq R$. If $\theta < R$ the country is forced to default. When $\theta \geq R$ the leader decides whether or not to repay, and this decision will determine his chance of staying in office in the future. Under democracy, if his repayment decision is not acceptable to the representative citizen, then the leader may be replaced. Notice that replacing the leader does not influence today's decision to repay, since that decision has already been made. Replacing the leader is just a retrospective "punishment" of a leader whose behavior was unacceptable.

The utility the leader gets today is normalized to zero. If he is replaced, then his future utility is also zero, without loss of generality. If he is not replaced, then he will enjoy future "ego rents", the amount of which may depend on whether or not the country has defaulted. Although we do not model it, one reason why default leads to lower ego rents for the leader may be the signal of low competence it generates. Let q denote the probability that the leader will remain in power. Note that q may depend on whether or not there is default. In the next subsection, we consider how q is determined.

If the country repays its loan today, the representative citizen consumes $\theta - R$. Her utility today is $u(\theta - R)$, where u is a strictly concave utility function. Her expected future utility, if the loan is repaid today, is denoted \bar{V} . If today's loan is repaid and the leader remains in power, then he expects to enjoy ego rents \bar{E} in the future. Thus, if the loan is repaid, the

lifetime expected utilities of the representative citizen and the leader are $u(\theta - R) + \bar{V}$ and $q\bar{E}$, respectively.

If the country defaults today, the representative citizen consumes θ today. Her utility today is $u(\theta)$. Her expected future utility, if there is default today, is denoted \underline{V} . If there is default and the leader remains in power, then he expects to enjoy ego rents \underline{E} in the future. Thus, if there is default, the lifetime utilities of the representative citizen and the leader are $u(\theta) + \underline{V}$ and $q\underline{E}$, respectively. We assume $\underline{V} < \bar{V}$ and $\underline{E} < \bar{E}$, as the creditors will punish the country in the future if they default today, and this will negatively impact both the representative citizen and the leader (if he remains in office).

Since u is concave, repaying the loan is more costly (in terms of utility) the lower is current output θ . Therefore, it is without loss of generality to restrict our attention to repayment policies characterized by a cutoff point x , such that the loan is repaid if $\theta \geq x$ and there is default if $\theta < x$. Let $U(\theta)$ denote the representative citizen's total utility, if the state is θ and the leader uses cut-off point x . We get

$$U(\theta) = \begin{cases} u(\theta - R) + \bar{V} & \text{if } \theta \geq x \\ u(\theta) + \underline{V} & \text{if } \theta < x \end{cases} \quad (2)$$

With a cut-off point x , the probability of repayment is $p = 1 - F(x)$. From (1), we find that the required repayment will be

$$R = R(x) \equiv \frac{1}{1 - F(x)} \quad (3)$$

The higher is the cut-off point x , the more likely it is that the country will default, so the higher is the interest rate:

$$R'(x) = \frac{F'(x)}{(1 - F(x))^2} > 0. \quad (4)$$

Suppose the country becomes richer, with a new income distribution G that stochastically dominates F . If the country maintains its cut-off point x , then it will face lower interest rates, because $\frac{1}{1-G(x)} < \frac{1}{1-F(x)}$. That is, a higher expected per capita income will improve credit ratings, so we control for income in the empirical analysis. Of course, the cut-off point x is endogenous, and in the next subsection we consider how it is determined. First, however, we derive the first-best repayment policy.

Given repayment policy x , the representative citizen's *ex ante* expected utility, before today's state is realized, is:

$$EU = \int_0^\infty U(\theta) dF(\theta) = \int_0^x (u(\theta) + \underline{V}) dF(\theta) + \int_x^\infty (u(\theta - R(x)) + \bar{V}) dF(\theta) \quad (5)$$

The first-best cut-off point x^* , which maximizes (5), is determined by the first order condition

$$\frac{dEU}{dx} = u(x) - u(x - R(x)) - (\bar{V} - \underline{V}) - R'(x) \int_x^\infty u'(\theta - R(x)) dF(\theta) = 0 \quad (6)$$

Notice that the first-best policy takes into account that a higher default rate leads to a higher interest rate, via (4).

2.2 The politics of repayment

Consider a democratic society with a political leader facing intense political competition. If the representative citizen prefers repayment, i.e., if

$$u(\theta - R) + \bar{V} \geq u(\theta) + \underline{V}, \quad (7)$$

then the leader is replaced if and only if he defaults. If the representative citizen prefers default, i.e., if

$$u(\theta - R) + \bar{V} < u(\theta) + \underline{V}, \quad (8)$$

then the leader is replaced if and only if he repays. In this case, the leader will maximize his payoff by setting the cutoff point \hat{x} such that

$$u(\hat{x} - R) + \bar{V} = u(\hat{x}) + \underline{V}. \quad (9)$$

By the concavity of u , this equality guarantees that (7) holds when $\theta \geq \hat{x}$ and (8) holds when $\theta < \hat{x}$. The leader, who is myopic in the sense that he makes a default decision after the interest rate has already been set, stays in power in all states of the world ($q = 1$), because he always makes the decision which is best for the representative citizen. The bank's rational expectations imply $R = R(\hat{x})$. Rearranging (9), we find that

$$u(\hat{x}) - u(\hat{x} - R(\hat{x})) = \bar{V} - \underline{V}.$$

The derivative of EU , evaluated at $x = \hat{x}$, is strictly negative:

$$\begin{aligned} \left. \frac{dEU}{dx} \right|_{x=\hat{x}} &= u(\hat{x}) - u(\hat{x} - R(\hat{x})) - (\bar{V} - \underline{V}) - R'(\hat{x}) \int_{\hat{x}}^{\infty} u'(\theta - R(\hat{x})) dF(\theta) \\ &= -R'(\hat{x}) \int_{\hat{x}}^{\infty} u'(\theta - R(\hat{x})) dF(\theta) < 0 \end{aligned}$$

Therefore, political competition leads to an excessive default risk: reducing x below \hat{x} would have a positive effect on EU . Under normal concavity assumptions, we have $x^* < \hat{x}$ which implies $R(x^*) < R(\hat{x})$. If the political leader, on behalf of his citizens, could commit to a default policy ex ante, he would choose x^* , taking into account the effect x has on $R(x)$. But this is not time-consistent for a myopic politician subject to election concerns after the state is realized. The time-consistent policy is \hat{x} , with a higher default risk and a higher interest rate than the first-best.

In the opposite case, where the leader is sure to remain in power (autocracy), we have $q \equiv 1$. The leader's payoff is \bar{E} if the loan is repaid, and \underline{E} if there is default. Since $\bar{E} > \underline{E}$, he will repay whenever feasible, i.e., whenever $\theta \geq R$. So the cut-off point is $x = R$. From (3), R satisfies $(1 - F(R))R = 1$. Clearly, in this simple model, the autocratic leader who doesn't care about the citizen's utility has the best credit rating.¹⁰ In contrast to Schultz and Weingast (2003), we argue that democracies potentially suffer from a time-consistency problem causing default rates to be excessively high. Banks recognize the electoral impetus and impose high risk premia.¹¹ This leads to the following hypothesis regarding the

¹⁰ The assumption that $\bar{E} > \underline{E}$ seems plausible that the future benefits of office should be higher under repayment. Notwithstanding the issues raised by Bulow and Rogoff (1989) and others, repayment might facilitate greater ongoing access to credit markets. Moreover, as noted in the introduction, default might invoke external sanctions or policy constraints from international organizations like the IMF.

¹¹The thrust of the argument applies to externally held debt. It could also be possible that default could

democratic disadvantage:

Hypothesis 1: Democracy increases risk premia in international borrowing.

However, the democratic disadvantage may be mitigated by good institutions that are not subject to electoral politics, thus relaxing the shackles of time-consistency. For example, a strong civil service could feasibly block short-termist default decisions. In short, the democratic disadvantage is conditional. Under weak institutions, democratization increases the default rate and observed risk premia; good institutions can restore rational farsighted decision making. Thus, the second hypothesis under investigation is:

Hypothesis 2: The democratic disadvantage (the high risk premium) is reduced by good institutions.

3 Empirical Evidence

The empirical analysis builds directly on Beaulieu, Cox and Saiegh (2012) (BCS). As discussed above this work represents the current state of the art, with an inclusive dataset covering 118 countries between 1961 and 2008.¹² Notably this benchmark represents a particularly demanding test for the hypotheses of the present paper as BCS find in favour of the democratic advantage.

The dependent variables are credit ratings data from Credit Rating Agencies (CRAs), in

make the median voter better off even when the debt is held domestically - depending on the distribution of assets and income in the economy. A full analysis of these considerations is beyond the scope of the present paper.

¹²Data availability reduce the sample size in the estimation.

particular Moody's and Standard and Poor, used to proxy for risk premia.¹³ These data are qualitative and are converted to a numerical score, r , lying on a 16-point scale (with higher ratings corresponding to lower risk premia and hence lower borrowing costs). Following BCS and before them Archer, Biglaiser and DeRouen (2007), the dependent variable in the empirical work is $r' = \ln\left(\frac{1}{16} + \frac{255}{256}r\right)$.

The key explanatory variable is *DEMOCRACY*, a dummy variable equal to 1 if a country-year is considered democratic according to the criteria in Przeworski et al (2000). These data are updated by Cheibub, Gandhi, and Vreeland (2010). Clearly observed differences in the democracy measures will likely correspond to changes in the structure of the economy as well as the likelihood of leader replacement. Hence control variables are used in the analysis following BCS.

In order to quantify the relationship between credit rating and democracy we follow a standard approach taken in the literature and specify a basic pooled regression, where *DEMOCRACY* enters linearly. The benchmark regression is:

$$RP_{it} = \mathbf{X}\mathbf{B} + \gamma DEMOCRACY_{it} + \varepsilon_{it}$$

where RP_{it} is the credit rating (separately from Moody's and Standard and Poor) of country i at time t . The control variables (in \mathbf{X}) follow Model 1 in BCS (in their Table 2). Specifically these are lagged values of the current account balance, growth in GDP per capita, the level of GDP, inflation, trade openness, a measure of resource endowment, a default indicator set equal to 1 if default occurred in the previous 5 years and fixed decadal effects. The

¹³Cantor and Packer (1996) document a strong correlation between interest rate spreads and CRA ratings.

estimation results below cluster standard errors by country as standard.

Columns 1 and 2 of table 1 contains estimation results using the full data set.¹⁴ When using the full sample, consistent with BCS here there is evidence in favour of the democratic advantage: in both columns the estimated coefficient for democracy is positive, and statistically significant at the 10% level in the case of the S&P credit rating. These results reflect the conventional wisdom that financial markets prefer democracy. Inference from the full sample requires parameter stability over the sample. However, as argued above, the theory suggests that the effect of democracy on credit ratings may be non-monotonic, as mature democracies develop good institutions which neutralize the inefficiencies caused by myopic election concerns. A first pass at this simply divides the sample depending on OECD membership. There is another reason for making this division. The theoretical model assumes that the debt is held externally. As argued by Schultz and Weingast (2003) under domestically held debt the holders of these assets may be able to exert pressure to repay either through the ballot or through other internal process. It is less clear how external lenders can hold elected leaders to account. For this reason it also makes sense to distinguish between OECD members, with a greater capacity to raise funds internally, and non-members, who are to a much greater extent reliant on borrowing externally.¹⁵ We hypothesize that there will be a democratic disadvantage for non-OECD members who have not yet developed good institutions.

In columns 3 and 4 the sample is restricted to non-OECD countries, and the results

¹⁴Note that the reported sample sizes in table 1 are lower than those reported in BCS. The reason for this is that the sample size they report applies to their first-stage regression - which examines whether or not a country has a credit-rating at all. Table 1 in this paper corresponds to their second-stage regression - the credit-rating itself - which inevitably is a smaller subset of the first-stage.

¹⁵This split also has the advantage that the two subsamples are approximately equal.

relating to democracy change meaningfully. In both columns the estimated coefficient relating to democracy becomes negative. In the case of the S&P credit rating this is borderline significantly different from zero ($p = 0.114$). Columns 5 and 6 conversely contain results for the OECD subsample. With the caveat that 95% of the OECD sample is classified as democratic, it is still noteworthy that the estimated relationship between credit ratings and democratic status is strongly positive. The coefficient estimates are statistically different in the two subsamples (at $p < 0.01$) and without any ambiguity the results show that the previously estimated democratic advantage is solely driven by the OECD members. Democratization for a non-OECD member does therefore not (at least by itself) improve its credit rating.

Table 2 reports results when the two-stage Heckman (1979) estimation methodology is used, as in BCS. For convenience columns 1 and 2 exactly duplicates their Model 2 where GDP per capita replace GDP in levels as a control. These results point towards a strong democratic advantage. Columns 3 and 4 restricts the sample to non-OECD countries and in this case the statistical relationship is in both cases insignificant.

The theory above hypothesizes that democratization causes a greater deterioration in credit ratings when decision-making is myopic. In order to test whether the effect of democracy on credit rating is conditional on the extent of myopia in policy-making we make use of data from the Government Insight Business Risk and Conditions database. In the words of the data-provider their government efficiency series (denoted *GMO*) captures "Policy consistency and forward planning: How confident businesses can be of the continuity of economic policy stance - whether a change of government will entail major policy disruption, *and whether the current government has pursued a coherent strategy. This factor also looks at*

the extent to which policy-making is far-sighted, or conversely aimed at short-term economic advantage.” (Our italics added.) Numerically they range from 0 (low government efficiency) to 1 (high government efficiency). Notwithstanding considerable measurement issues these data arguably contain information regarding shortsightedness in policy-making.

The theory anticipates that quality in decision making matters particularly under democracy. Pure autocracies gauge the default decision purely on how it impacts executive ego-rents, which in the model are independent of interest rates. On the other hand pure democracies gauge the default decision depending on material interests of the populace, who are ultimately liable for the debt. If policy is first-best then all else equal default is less likely than when it is myopic.

The possibility that the effect of democracy on credit rating varies with farsightedness in policy-making is investigated using an interaction of *GMO* with the democracy rating. Following the theory the ‘unconditional’ response of credit rating to democracy is hypothesized to be negative. When *GMO* is at its minimum, then democratization is hypothesized to lead to a deterioration in the credit rating. However the interaction of *DEMOCRACY* with *GMO* is hypothesized to be positive. The democratic disadvantage is ameliorated when institutions are far-sighted.

Table 3 contains estimation results augmenting the benchmark specification to include *GMO* and its interaction with *DEMOCRACY*. Columns 1 and 2 contain results for the full sample and columns 3 and 4 for the non-OECD countries only. In all instances the estimated coefficients are consistent with the theoretical hypotheses. In the full sample when *GMO* is 0 (weak institutions), there is a statistically significant negative relationship between credit ratings and *DEMOCRACY*. The magnitude of this effect is such that a

switch from autocracy to democracy is associated with a reduction in the credit rating of about 2.5 investment grades on the 16-point scale. However when GMO is equal to 1 (strong institutions) there is an estimated democratic advantage in that credit scores and democracy are now positively associated (although the relationship is statistically insignificant).

Table 4 instead splits the sample by regime-type. The theoretical analysis identifies that farsightedness (GMO) matters more for democracies. For autocracies the calculus is simple: because the dictator benefits from repayment and is not personally liable, then repayment occurs whenever feasible (regardless of the welfare consequences for the masses). Under democracy the trade-offs are more nuanced, and indeed the capacity for understanding the full consequences of default strategy on interest rates arguably is not given. Here farsightedness matters. Before discussing the results note that there are other important channels through which institutional quality would be expected to positively affect credit rating. Nonetheless the theory is suggestive that the premium to farsightedness should be higher under democracy, Columns 1 and 2 contain results for democracies, and columns 3 and 4 contain results for autocracies. Consistent with the theory the estimated sensitivity of the credit rating to institutional quality is statistically stronger under democratic regime types.

In table 5 the analysis extends to alternative measures of democracy. The model emphasizes leader replacement: leaders that are more likely to be replaced arguably are relatively more constrained by the electorate, whilst leaders that de facto are confident of remaining in office may more freely pursue their own objectives. Under this interpretation of the model, the maintained hypothesis is that increased likelihood of replacement will be associated with a deterioration of credit rating. Arguably the *DEMOCRACY* indicator variable fails to

capture all of the relevant information. Replacement may occur within autocracy, and similarly, there are many examples of regime continuity under democracy. To investigate this empirically, table 5 replaces the *DEMOCRACY* identifier with a measure of replacement likelihood taken from the Database of Political Institutions. In particular we use the variable *FRAC*, which measures the probability that two deputies picked at random from the legislature will be from different parties. High values of *FRAC* denote greater political competition, hence a greater likelihood of leader replacement, and accordingly a lower credit rating.

Columns 1 and 2 of table 5 contain the estimation results over the full sample, using the same regression specification as for columns (1) and (2) in table 1, and also controlling for OECD membership. In both cases *FRAC* is negative, and statistically significant at the 8% level using the Moody's ratings data. All else equal, greater political competition, hence a greater probability of leader-replacement, is weakly statistically associated with a deterioration in credit rating. Conceivably the parameter estimate for *FRAC* is biased towards zero, as political competition is known to be correlated with economic development broadly, which may not be perfectly controlled for in the regression specification, but would plausibly be associated with improved credit ratings.

A further concern is that the *DEMOCRACY* fails to capture the fact that real political systems lie somewhere on the continuum between pure autocracy and pure democracy. Column 3 and 4 of table 5 contain estimation results using the PolityIV continuous measure of democracy, which ranges from pure autocracy (-10) to pure democracy ($+10$). To put the measurement problem into perspective, note that regimes with *DEMOCRACY* = 1 score 8.044 on average with a standard deviation of 2.7 on the PolityIV scale, and regimes with

DEMOCRACY = 1 score -4.303 with a standard deviation of 5.074 .

The results using the continuous PolityIV measure of democracy within the linear regression specification (columns 3 and 4 of table 5) demonstrate very low statistical significance. Taken at face value there appears to be no relationship between credit ratings and democratic status. However this conclusion is premature. Firstly we note the potential for bias in the parameter estimate: the PolityIV democracy measure is likely to be correlated with many economic and institutional variables that would conceivably be positively related to sovereign credit ratings. Indeed there is a significant cluster of perfect democracies (scoring 10) within the usable sample, to the extent that excluding these almost halves the sample. It seems likely that the perfect democracies are not the appropriate counterfactual for extant autocracies considering democratization, even in the presence of the control variables.

A second reason to be skeptical of the low significance in the linear specification stems from the theory, which distinguishes between myopic and rational democracy. Arguably those democracies scoring most highly on the PolityIV score can more plausibly be classified as rational. In support of this claim is the fact that the average age of the executive party is considerably higher for countries scoring highest on PolityIV.¹⁶ That is to say that the highest PolityIV scores are associated with mature democracies. If maturity begets rationality, then the theory predicts that transition from intermediate to perfect democracy would be associated with an improvement, rather than a deterioration in a sovereign's credit rating. We therefore posit that the highest PolityIV scores are associated with rational policy making, hence an improvement in credit ratings.

¹⁶The correlation between 'Execage' in the Database of Political Institutions and the PolityIV democracy score is 0.31 (and statistically significant at the 0.1% level). The average age of the executive (in years) is 66 in regimes scoring 10, and 27 otherwise.

The upshot of these considerations is that the relationship between a country's credit rating and its PolityIV score is hypothesized to be non-linear. Movement from autocracy to intermediate levels of democracy increases the likelihood of replacement and accountability to the general public, hence increasing default rates as argued. Movement from intermediate to perfect democracy is symptomatic of a maturing process associated with rational policymaking, thereby reducing default rates. Columns 5 and 6 of table 5 contain estimation results with a quadratic function in the PolityIV democracy score.¹⁷ The results strongly support the non-linear hypotheses: starting from autocracy, incremental democratization coexists with deteriorating credit conditions. However, at high PolityIV scores the positive quadratic term dominates and credit ratings improve.

We emphasize that the results should be treated with some caution. Statistically, a perfect 10 in the PolityIV score is associated with better credit conditions. But this relationship is likely an artefact of the fact that perfect (and mature) democracies also have successfully established rational policymaking institutions. The point is that moving to full democracy is not a sufficient condition for guaranteeing better access to credit.

4 Conclusion

There is no consensus in the literature on whether there is a democratic advantage in sovereign debt repayment. On the one hand, some authors (e.g. North and Weingast (1989) and Shultz and Weingast (2003)) have argued that there is a democratic advantage in debt repayment, because citizens suffer when there is default. On the other hand, some scholars

¹⁷Note in the quadratic specification we add 10 to the PolityIV democracy score to ensure non-negative values.

(e.g. Saeigh (2005)) say that this is no longer true when the sample includes developing countries. In this paper, we attempt to reconcile these contradictory views.

In our theoretical model, democratic leaders internalize the preferences of those ultimately liable to pay back sovereign debt. Therefore, leader accountability confers an inherent democratic *dis*advantage, with higher default rates, and concomitant higher interest rates and risk premia. Commitment to rational long term decision-making that recognizes the link between interest rates and default policy ameliorates this problem. We therefore reiterate the conclusions of Shultz and Weingast (2003), that ultimately it is the institutions that liberal democracies have and other less mature democracies lack that determine the democratic advantage. However, unlike them we argue that this advantage derives from the ability of good institutions to override the citizens' preferences and neutralize their desire to default in bad states. If a country has not yet developed such institutions, then democratization will lead to lower credit ratings because there are no institutions that prevent political leaders from maximizing the representative citizens' utility. Thus, contrary to previous authors, we expect a non-monotonic relationship between democracy and credit ratings. We stress that this is true even controlling for income levels.

Empirically, we find that the democratic advantage disappears outside of OECD members. The estimated relationship between observed credit-ratings and democratic status is also strongly conditional on institutional farsightedness. Consistent with the theory, when government is measured to be myopic there is a strong democratic disadvantage. In such circumstances democracy is estimated to cost about 2.5 investment grades on the standard 16-point grading structure employed by Moody's and Standard and Poor. On the other hand when government is measured to be far-sighted there is if anything democratic advantage.

The analysis adds weight to the argument that democratization is not by itself a panacea for improved economic performance. It is certainly not a sufficient guarantee for improved access to international credit markets, and most definitely cannot guarantee rational policy-making.

Credit Rating	Moody's	S&P	Moody's	S&P	Moody's	S&P
	(1)	(2)	(3)	(4)	(5)	(6)
DEMOCRACY	0.252 (1.65)	0.239 (1.78)*	-0.164 (0.89)	-0.257 (1.61)	0.261 (7.63)***	0.598 (32.9)***
CURRENT ACCOUNT (<i>lag</i>)	0.019 (2.38)**	0.017 (2.41)**	0.015 (1.95)*	0.010 (1.23)	0.004 (0.79)	0.004 (0.81)
GDP.CAP Growth (<i>lag</i>)	0.019 (1.93)*	0.020 (1.83)*	0.033 (3.01)***	0.038 (3.01)***	-0.019 (3.32)***	-0.022 (4.09)***
GDP (<i>lag</i>)	0.0001 (3.41)***	0.0001 (3.59)***	0.0006 (2.30)**	0.0003 (1.36)	0.000 (2.96)***	0.000 (2.35)**
INFLATION (<i>lag</i>)	-0.0004 (1.13)	-0.0003 (0.73)	-0.0003 (0.92)	0.000 (0.15)	-0.018 (23.1)***	-0.025 (46.01)***
TRADE (<i>lag</i>)	0.006 (3.55)***	0.004 (3.15)***	0.007 (3.59)***	0.005 (3.39)***	0.001 (1.67)	0.001 (1.19)
RESOURCE ENDOWMENT (<i>lag</i>)	-0.002 (0.51)	-0.003 (1.16)	0.001 (0.47)	-0.001 (0.34)	0.002 (2.02)*	0.002 (1.19)
DEFAULT	-1.413 (5.04)***	-1.328 (4.66)***	-1.027 (4.38)***	-0.991 (3.69)***	(OMITTED)	(OMITTED)
INTERCEPT	1.352 (4.65)***	1.622 (8.25)***	0.766 (1.77)	1.288 (4.98)	2.404 (19.02)***	2.070 (16.80)***
Decade fixed effects	Yes	Yes	Yes	Yes	Yes	Yes
Sample	Full	Full	non-OECD	non-OECD	OECD	OECD
Observations	1113	1047	542	495	571	552
R^2	0.392	0.333	0.374	0.268	0.64	0.268

Table 1: Estimation Results - the effect of democracy on credit ratings

Notes: The decade fixed effects are not shown. t-statistics in parentheses (with standard errors clustered by country). Statistical Significance at *90% confidence level; **95% confidence level; ***99% confidence level.

Credit Rating	Moody's (1)	S&P (2)	Moody's (3)	S&P (4)
DEMOCRACY	0.534 (3.24)***	0.501 (3.62)***	0.043 (0.20)	-0.062 (0.36)
CURRENT ACCOUNT (<i>lag</i>)	0.018 (1.98)**	0.015 (1.92)**	0.015 (1.50)	0.007 (0.84)
GDP.CAP Growth (<i>lag</i>)	0.023 (2.09)**	0.022 (3.98)***	0.034 (2.71)***	0.038 (2.75)***
GDP (<i>lag</i>)	0.001 (2.48)**	0.001 (2.47)**	0.001 (2.33)**	0.001 (2.13)**
INFLATION (<i>lag</i>)	-0.001 (0.90)	-0.001 (0.56)	-0.000 (0.46)	0.000 (0.28)
TRADE (<i>lag</i>)	0.005 (3.07)***	0.004 (2.76)***	0.007 (2.80)***	0.005 (3.53)***
RESOURCE ENDOWMENT (<i>lag</i>)	-0.001 (0.15)	-0.001 (0.53)	0.003 (0.58)	0.002 (0.49)
DEFAULT	-1.568 (4.55)***	-1.543 (4.68)***	-1.000 (3.26)***	-1.032 (3.52)***
INTERCEPT	1.061 (3.43)***	1.203 (4.77)***	0.612 (1.39)	0.904 (3.04)***
Decade fixed effects	Yes	Yes	Yes	Yes
ρ (<i>rho</i>)	0.573 (5.09)***	0.513 (5.02)***	0.481 (3.87)***	0.394 (3.19)***
<i>Wald test</i> ($\rho = 0$) χ^2	25.93***	25.16***	15.01***	10.18***
Sample	Full	Full	non-OECD	non-OECD
Observations	2055	1989	1401	1354

Table 2: Heckman (Selection) Estimation Results - the effect of democracy on credit ratings

Notes: Heckman (1979) estimation following Beaulieu, Cox and Saiegh (2012). The decade fixed effects are not shown. Z-statistics in parentheses. Statistical Significance at *90% confidence level; **95% confidence level; ***99% confidence level.

Credit Rating	Moody's (1)	S&P (2)	Moody's (3)	S&P (4)
DEMOCRACY	-1.196 (2.04)**	-0.981 (2.27)**	-1.195 (1.59)	-0.900 (1.62)
DEMOCRACY*GMO	1.620 (2.20)**	1.300 (2.23)**	1.712 (1.54)	1.186 (1.38)
GMO	1.531 (2.41)**	1.780 (3.07)**	1.469 (2.26)**	1.885 (3.26)***
CURRENT ACCOUNT (<i>lag</i>)	0.009 (1.18)	0.007 (1.10)	0.009 (1.01)	0.006 (0.73)
GDP.CAP Growth (<i>lag</i>)	0.026 (2.01)**	0.020 (1.84)*	0.030 (1.92)*	0.024 (1.71)*
GDP (<i>lag</i>)	0.0001 (2.28)**	0.0001 (2.48)**	0.001 (2.05)**	0.0004 (2.23)**
INFLATION (<i>lag</i>)	-0.006 (1.50)	-0.009 (2.60)**	-0.008 (1.36)	-0.008 (1.74)*
TRADE (<i>lag</i>)	0.003 (1.86)*	0.002 (1.55)	0.005 (2.32)**	0.003 (1.93)*
RESOURCE ENDOWMENT (<i>lag</i>)	-0.000 (0.02)	-0.000 (0.18)	0.003 (0.69)	0.002 (0.89)
DEFAULT	-1.056 (3.32)***	-0.752 (2.12)**	-0.962 (3.00)***	-0.724 (1.98)*
INTERCEPT	0.554 (0.21)	0.529 (1.25)	0.155 (0.25)	0.185 (0.44)
Decade fixed effects	Yes	Yes	Yes	Yes
Sample	Full	Full	non-OECD	non-OECD
Observations	683	685	411	413
R^2	0.571	0.562	0.439	0.379

Table 3: Estimation Results - conditional effects of democratization

Notes: GMO is the government efficiency measure from the Government Insight Business Risk and Conditions database described in the text. The decade fixed effects are not shown. t-statistics in parentheses (with standard errors clustered by country). Statistical Significance at *90% confidence level; **95% confidence level; ***99% confidence level.

Credit Rating	Moody's (1)	S&P (2)	Moody's (3)	S&P (4)
GMO	3.226 (6.37)***	3.094 (7.94)***	2.057 (3.60)***	1.874 (3.49)***
CURRENT ACCOUNT (<i>lag</i>)	0.011 (0.77)	-0.002 (0.23)	0.003 (0.46)	0.008 (0.87)
GDP.CAP Growth (<i>lag</i>)	0.018 (1.16)	0.018 (1.55)	0.029 (1.82)*	-0.002 (0.11)
GDP (<i>lag</i>)	0.000 (1.99)*	0.000 (2.07)**	0.0007 (3.16)***	0.0006 (3.09)***
INFLATION (<i>lag</i>)	-0.006 (1.22)	-0.010 (2.84)***	-0.002 (0.40)	-0.007 (1.03)
TRADE (<i>lag</i>)	0.003 (1.12)	0.002 (0.98)	0.001 (1.26)	0.001 (1.12)
RESOURCE ENDOWMENT (<i>lag</i>)	-0.006 (1.12)	-0.002 (0.44)	0.007 (1.99)*	0.005 (1.87)*
DEFAULT	-0.832 (1.83)*	-0.548 (1.05)	-1.793 (3.58)***	-1.118 (3.36)***
INTERCEPT	-0.609 (1.19)	-0.463 (1.22)	0.017 (0.03)	0.379 (0.95)
Decade fixed effects	Yes	Yes	Yes	Yes
Sample	Democracies	Democracies	Autocracies	Autocracies
Observations	505	512	178	173
R^2	0.597	0.606	0.618	0.460

Table 4: Estimation Results - benefits of far-sighted institutions, democracies and autocracies

Notes: GMO is the government efficiency measure from the Government Insight Business Risk and Conditions database described in the text. The decade fixed effects are not shown. t-statistics in parentheses (with standard errors clustered by country). Statistical Significance at *90% confidence level; **95% confidence level; ***99% confidence level.

Credit Rating	Moody's	S&P	Moody's	S&P	Moody's	S&P
	(1)	(2)	(3)	(4)	(5)	(6)
FRAC	-0.560 (1.83)*	-0.381 (1.34)				
POLITY2			-0.006 (0.40)	-0.001 (0.12)	-0.226 (2.97)***	-0.286 (3.98)***
POLITY2-squared					0.010 (3.07)***	0.013 (3.98)***
CURRENT ACCOUNT (<i>lag</i>)	0.016 (2.04)**	0.010 (1.50)	0.013 (1.81)*	0.010 (1.54)	0.013 (1.72)*	0.006 (1.14)
GDP.CAP Growth (<i>lag</i>)	0.024 (2.75)***	0.025 (2.37)**	0.026 (2.63)***	0.027 (2.67)***	0.029 (3.06)***	0.029 (3.09)***
GDP (<i>lag</i>)	0.0001 (2.78)***	0.0001 (2.76)***	0.0001 (3.37)***	0.0001 (3.32)***	0.0001 (3.42)***	0.0001 (3.35)***
INFLATION (<i>lag</i>)	-0.0002 (0.77)	-0.0001 (0.38)	-0.0002 (0.78)	-0.0002 (0.40)	-0.0002 (0.75)	-0.0001 (0.34)
TRADE (<i>lag</i>)	0.006 (3.53)***	0.005 (3.93)***	0.006 (3.85)***	0.005 (4.15)***	0.006 (4.47)***	0.006 (4.06)***
RESOURCE ENDOWMENT (<i>lag</i>)	0.001 (0.50)	0.001 (0.55)	0.002 (0.60)	0.001 (0.58)	0.001 (0.17)	0.001 (0.32)
DEFAULT	-0.943 (3.28)***	-0.863 (3.16)***	-0.970 (3.56)***	-0.943 (3.50)***	-0.892 (3.27)***	-0.821 (3.38)***
OECD	0.926 (7.18)***	0.937 (7.27)***	0.903 (6.21)***	0.934 (6.30)***	0.679 (5.28)***	0.643 (4.71)***
INTERCEPT	1.328 (4.60)***	1.373 (5.98)***	0.985 (3.30)***	1.115 (5.65)***	1.786 (4.26)***	2.125 (7.12)***
Decade fixed effects	Yes	Yes	Yes	Yes	Yes	Yes
Sample	Full	Full	Full	Full	Full	Full
Observations	1052	1003	1111	1047	1111	1047
R^2	0.505	0.486	0.507	0.487	0.538	0.548

Table 5: Further Results

Notes: Other notes as for table 1.

References

- Archer, Candace C., Glen Biglaiser and Karl DeRouen (2007). Sovereign Bonds and the "Democratic Advantage": Does Regime Type Affect Credit Rating Agency Ratings in the Developing World? *International Organization* 61(2): 341-365.
- Ban, Cornel (2012). Sovereign Debt, Austerity and Regime Change: the case of Nicolae Ceausescu's Romania. *East European Politics and Societies* 26(4): 743-776.
- Beaulieu, Emily, Gary W. Cox and Sebastien Saiegh (2012). Sovereign Debt and Regime Type: Reconsidering the Democratic Advantage. *International Organization* 61(2): 341-365.
- Bulow, Jeremy, and Kenneth Rogoff (1989). Sovereign debt: Is to forgive to forget? *American Economic Review* 79: 43-50.
- Cantor, Richard, and Frank Packer (1996). Determinants and Impact of Sovereign Credit Ratings. *Economic Policy Review* 2(2): 37-53.
- Cheibub, José Antonio, Jennifer Gandhi and James Vreeland (2010) Democracy and Dictatorship Revisited. *Public Choice* 143(1-2): 67-101.
- Eaton, Jonathan, and Mark Gersovitz (1981). Debt with Potential Repudiation: theoretical and empirical analysis. *Review of Economic Studies* 48(2): 289-309.
- Guembel, Alexander and Oren Sussman (2009). Sovereign Debt without default penalties. *Review of Economic Studies* 76(4): 1297-1320.
- Hausmann, Ricardo (2014). Should Venezuela Default? Project Syndicate: <https://www.project-syndicate.org/commentary>
- Heckman, James J. (1979). Sample Selection Bias as a Specification Error. *Econometrica* 47(1): 153-161.
- Huntington, Samuel P. (1968). *Political Order in Changing Societies*. New Haven, Connecticut: Yale University Press.

- Kletzer, Kenneth M., and Brian D. Wright (2000). Sovereign Debt As Intertemporal Barter. *American Economic Review* 90(3): 621-639.
- McGillivray, Fiona, and Alastair Smith (2003). Who can be trusted?: Sovereign debt and the impact of leadership change. Mimeo NYU Department of Economics.
- North, Douglas C., and Barry R. Weingast (1989). Constitutions and Commitment: The Evolution of Institutions Governing Public Choice in Seventeenth-Century England. *Journal of Economic History* 49(4): 803-32.
- Oneal, John R. (1994). The Affinity of Foreign Investors for Authoritarian Regimes. *Political Research Quarterly* 47(3): 565-588.
- Przeworski, Adam, Michael Alvarez, Jose Antonio Cheibub, and Fernando Limongi (2000). *Democracy and Development. Political Institutions and Well-Being in the World, 1950-1990*. New York: Cambridge University Press.
- Przeworski, Adam, and Fernando Limongi (1993). Political Regimes and Economic Growth. *Journal of Economic Perspectives* 7(3): 51-69.
- Saiegh, Sebastien (2005). Do Countries have a Democratic Advantage? *Comparative Political Studies* 38(4): 366-387.
- Schultz, Kenneth A., and Barry R. Weingast (2003). The Democratic Advantage: Institutional Foundations of Financial Power in International Competition. *International Organization* 57(1): 3-42.