**Web Appendices**

Appendix A: Country-year list
Appendix B: Descriptive Statistics
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Appendix D: Robustness tests, descriptive statistics on PEFA participants vs. non-participants, more descriptive statistics on PDT-DA relationship
Appendix E: Alternative ways of handling Unrated Country-Years
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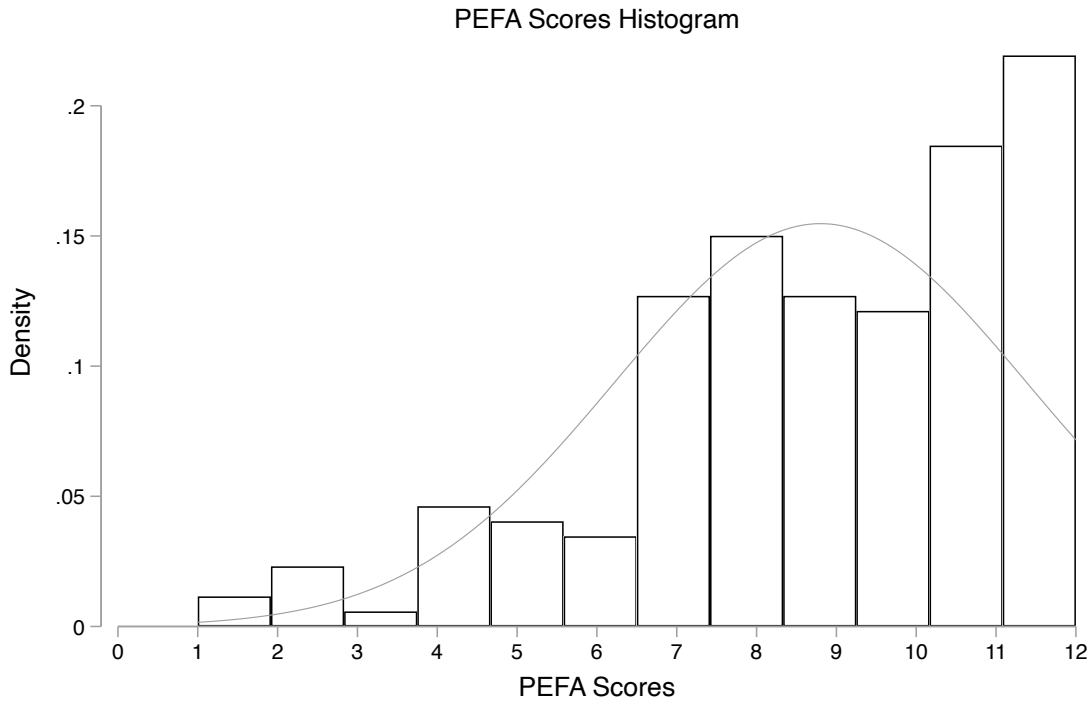
Appendix G: CDS DVs

**Appendix A: Table 2, Model 8 Country-Years (63 countries)**

| Country | Years | Country | Years |
|---|---|---|---|
| Afghanistan | 2006-2016 | Lesotho | 2007-2016 |
| Albania | 2011-2016 | Liberia | 2010-2013 |
| Armenia | 2008-2016 | Madagascar | 2006-2016 |
| Azerbaijan | 2014-2016 | Malawi | 2009-2016 |
| Bangladesh | 2006-2016 | Maldives | 2009-2011; 2014 |
| Belarus | 2009-2016 | Mali | 2008-2016 |
| Bhutan | 2010-2016 | Mauritius | 2007-2016 |
| Bosnia and Herzegovina | 2014-2016 | Moldova | 2006-2016 |
| Botswana | 2009-2016 | Mongolia | 2015-2016 |
| Brazil | 2009-2016 | Morocco | 2009-2016 |
| Burkina Faso | 2007-2016 | Myanmar | 2012-2016 |
| Cabo Verde | 2008-2016 | Nepal | 2010-2016 |
| Cambodia | 2011-2016 | Paraguay | 2008-2016 |
| Central African Republic | 2010-2012; 2014-2015 | Peru | 2009-2016 |
| Colombia | 2009-2016 | Philippines | 2010-2016 |
| Congo | 2006-2016 | Rwanda | 2014-2016 |
| Costa Rica | 2010-2016 | Senegal | 2015 |
| Côte d'Ivoire | 2008-2016 | Serbia | 2007-2012 |
| Dominican Republic | 2007-2016 | Solomon Islands | 2011-2015 |
| El Salvador | 2009-2016 | South Africa | 2008-2016 |
| Ethiopia | 2011-2016 | Sudan | 2010; 2011-2015 |
| Gabon | 2012-2016 | Tanzania | 2009-2016 |
| Georgia | 2008-2016 | Thailand | 2009-2016 |
| Ghana | 2006-2011; 2014-2015 | Timor-Leste | 2010-2016 |
| Guatemala | 2010-2016 | Togo | 2006-2016 |
| Honduras | 2009-2015 | Tunisia | 2010-2012 |
| India | 2010-2016 | Uganda | 2015-2016 |
| Indonesia | 2008-2015 | Ukraine | 2007-2016 |
| Jamaica | 2007-2016 | Vanuatu | 2009-2014 |
| Jordan | 2007-2016 | Zambia | 2005-2016 |
| Kenya | 2014-2016 | Zimbabwe | 2012; 2015-2016 |
| Kyrgyzstan | 2014-2016 | | |

**Appendix B: Table 2, Model 8 Descriptive Statistics**

| variable | mean | p50 | min | max | sd | iqr |
|---|---|---|---|---|---|---|
| Moodys | 15.45 | 17.00 | 6.00 | 19.00 | 4.05 | 7.00 |
| PDT(PEFA) | 9.13 | 10.00 | 1.00 | 12.00 | 2.60 | 3.50 |
| Democracy | 1.68 | 2.00 | 0.00 | 3.00 | 0.74 | 1.00 |
| Law | 0.52 | 0.56 | 0.02 | 0.96 | 0.24 | 0.39 |
| PropRights | 0.69 | 0.73 | 0.18 | 0.93 | 0.16 | 0.21 |
| GenGovTpcy | 0.62 | 0.71 | -2.23 | 3.11 | 0.97 | 1.38 |
| GDPpcap | 3276.83 | 2884.44 | 334.11 | 11993.49 | 2611.95 | 3682.72 |
| GDPgrowth | 4.09 | 4.19 | -25.91 | 21.39 | 4.00 | 4.01 |
| Inflation | 6.27 | 4.99 | -6.81 | 59.22 | 6.93 | 5.77 |
| ExtDebtStock | 44.00 | 33.98 | 0.00 | 250.74 | 28.08 | 35.86 |
| Deficit | 0.75 | 0.76 | 0.12 | 1.92 | 0.22 | 0.27 |
| IMFprogram | 0.33 | 0.00 | 0.00 | 1.00 | 0.47 | 1.00 |
| Trade | 80.98 | 76.46 | 19.10 | 170.77 | 32.03 | 48.44 |



**Appendix C: Credit Rating Coding**

| Fitch | S&P | Moody's | Fitch Order | S&P Order | Moody's Order |
|---|---|---|---|---|---|
| AAA | AAA | Aaa | 1 | 1 | 1 |
| AA+ | AA+ | Aa1 | 2 | 2 | 2 |
| AA | AA | Aa2 | 3 | 3 | 3 |
| AA- | AA- | Aa3 | 4 | 4 | 4 |
| A+ | A+ | A1 | 5 | 5 | 5 |
| A | A | A2 | 6 | 6 | 6 |
| A- | A- | A3 | 7 | 7 | 7 |
| BBB+ | BBB+ | Baa1 | 8 | 8 | 8 |
| BBB | BBB | Baa2 | 9 | 9 | 9 |
| BBB- | BBB- | Baa3 | 10 | 10 | 10 |
| BB+ | BB+ | Ba1 | 11 | 11 | 11 |
| BB | BB | Ba2 | 12 | 12 | 12 |
| BB- | BB- | Ba3 | 13 | 13 | 13 |
| B+ | B+ | B1 | 14 | 14 | 14 |
| B | B | B2 | 15 | 15 | 15 |
| B- | B- | B3 | 16 | 16 | 16 |
| CCC+ | CCC+ | Caa1 | 17 | 17 | 17 |
| CCC | CCC | Caa2 | 18 | 18 | 18 |
| CCC- | CCC- | Caa3 | 19 | 19 | 19 |
| CC | CC | Ca | 20 | 20 | 20 |
| C | C | | 21 | 21 | |
| DDD | SD | C | 22 | 22 | 21 |
| DD | D | | 23 | 23 | |
| RD | | | 24 | | |
| D | | | 25 | | |

**Appendix D (Robustness Checks, Additional Descriptive Data on PDT-DA Variable Associations and PEFA participation)**

- Robustness Tests and Details
  - D1- Alternative variables and sample subsets (estimations and explanatory notes)
  - D2- Add control variable for years since last default (estimations and discussion)
  - D3- Add control variable for financial openness (estimations and discussion)
  - D4- Alternative DV & alternative & deconstructed PEFA (estimations and discussions)
- Additional Descriptive Statistics of DA-PDT variable relationships
  - D5- Scatterplots of PDT and DA variables further confirming they are not collinear and should be partialed out as independent effects in models (summarized in main text via Table 1 correlation matrix)
- PEFA participant and non-participant credit rating distributions
  - D6- Box plots showing little difference in distribution of credit ratings between PEFA participants and non-participants
- DA relationship to Credit Ratings robust to sample size
  - D7- Confirm DA variables (especially law and property rights) are consistently associated with creditworthiness in smaller sample sizes when PDT is removed, showing sample size is not driving findings.

## Appendix D1: Robustness Tests

| | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| DV | Moodys | S&P | Fitch | Moodys | Moodys | Moodys | Moodys | Moodys | Moodys | Moodys | Moodys | Moodys | Fitch | S&P |
| PDT | -0.634*** | -0.425** | -0.573*** | | | | -0.384*** | -0.276** | -0.326** | -0.396*** | -0.359*** | | | |
| | (0.190) | (0.186) | (0.185) | | | | (0.124) | (0.137) | (0.133) | (0.123) | (0.114) | | | |
| Democracy | -0.467 | 0.429 | 0.096 | | | | | | | -1.305** | -1.164* | 0.182 | 0.101 | 0.101 |
| | (0.576) | (0.523) | (0.715) | | | | | | | (0.569) | (0.593) | (0.127) | (0.113) | (0.113) |
| Law | -2.519 | -4.114*** | -2.973* | | | | 0.079 | -2.222 | -1.575 | -1.432 | -5.242 | | | |
| | (1.542) | (1.541) | (1.682) | | | | (2.805) | (2.584) | (2.689) | (2.605) | (3.473) | | | |
| PropRights | -1.773 | -2.929 | -1.993 | | | | -1.311 | -1.908 | -0.869 | -1.645 | -1.507 | | | |
| | (1.769) | (1.842) | (1.781) | | | | (1.742) | (1.939) | (2.081) | (1.960) | (1.782) | | | |
| PDT x Democracy | | | | -0.099 | | | | | | | | | | |
| | | | | (0.195) | | | | | | | | | | |
| PDT x Law | | | | | -0.799 | | | | | | | | | |
| | | | | | (0.551) | | | | | | | | | |
| PDT x PropRights | | | | | | -0.685 | | | | | | | | |
| | | | | | | (0.461) | | | | | | | | |
| GenGovTpcy | | | | | | | 1.340** | 1.303** | 1.075* | 1.329** | 1.541*** | -0.086 | 0.049 | 0.049 |
| | | | | | | | (0.522) | (0.580) | (0.624) | (0.539) | (0.558) | (0.092) | (0.082) | (0.082) |
| GDPpcap | | | | | | | -0.000* | -0.001** | -0.001** | -0.000** | -0.000** | 0.000*** | 0.000*** | 0.000*** |
| | | | | | | | (0.000) | (0.000) | (0.000) | (0.000) | (0.000) | (0.000) | (0.000) | (0.000) |
| GDPgrowth | | | | | | | -0.070* | -0.076* | -0.048 | -0.055 | -0.061 | -0.021 | -0.014 | -0.014 |
| | | | | | | | (0.036) | (0.040) | (0.054) | (0.038) | (0.038) | (0.016) | (0.015) | (0.015) |
| Inflation | | | | | | | 0.023 | 0.025 | 0.005 | 0.021 | 0.019 | -0.009 | -0.009 | -0.009 |
| | | | | | | | (0.027) | (0.027) | (0.022) | (0.027) | (0.026) | (0.010) | (0.009) | (0.009) |
| ExtDebtStock | | | | | | | 0.020 | 0.021* | 0.020 | 0.020* | 0.020* | 0.007*** | 0.000 | 0.000 |
| | | | | | | | (0.012) | (0.012) | (0.014) | (0.012) | (0.011) | (0.002) | (0.002) | (0.002) |
| Deficit | | | | | | | -2.045* | -1.316 | -2.259 | -1.750 | -1.766 | 1.358*** | 0.174 | 0.174 |
| | | | | | | | (1.148) | (1.218) | (1.355) | (1.149) | (1.126) | (0.344) | (0.304) | (0.304) |
| IMFprogram | | | | | | | 1.498*** | 1.479*** | 1.534*** | 1.396*** | 1.460*** | -0.414*** | -0.072 | -0.072 |
| | | | | | | | (0.507) | (0.527) | (0.551) | (0.491) | (0.510) | (0.159) | (0.133) | (0.133) |
| Trade | | | | | | | 0.024** | 0.020** | 0.025** | 0.025** | 0.024** | -0.011*** | -0.017*** | -0.017*** |
| | | | | | | | (0.010) | (0.010) | (0.010) | (0.010) | (0.010) | (0.002) | (0.002) | (0.002) |
| v2x_libdem | | | | | | | -6.820** | | | | | | | |
| | | | | | | | (2.848) | | | | | | | |
| polity2 | | | | | | | | -0.175** | | | | | | |
| | | | | | | | | (0.068) | | | | | | |
| bmr_democracy | | | | | | | | | -1.731*** | | | | | |
| | | | | | | | | | (0.552) | | | | | |
| WGIcorruption | | | | | | | | | | -0.074 | | | | |
| | | | | | | | | | | (0.988) | | | | |
| Corruption | | | | | | | | | | | -2.949 | | | |
| | | | | | | | | | | | (2.294) | | | |
| N | 621 | 621 | 621 | 745 | 745 | 745 | 453 | 432 | 380 | 453 | 453 | 730 | 730 | 730 |
| Country Effects | NO | NO | NO | NO | NO | NO | NO | NO | NO | NO | NO | NO | NO | NO |
| Year FEs | YES | YES | YES | YES | YES | YES | YES | YES | YES | YES | YES | YES | YES | YES |
| Region FEs | NO | NO | NO | NO | NO | NO | YES | YES | YES | YES | YES | YES | YES | YES |
| Inc Group FEs | NO | NO | NO | NO | NO | NO | YES | YES | YES | YES | YES | YES | YES | YES |

* p<0.1 ** p<0.05 *** p<0.01

Constants Suppressed
Cluster-Robust SEs in Models 1-11; conventional SEs in Models 12-14 to allow greatest chance of inferring significance in relationship between democracy and obtaining a credit rating
Models 1-3: OLS dropping bottom 25% of PDT scores from sample
Models 4-6: OLS interaction confirming PDT effect not conditional on DA variables
Models 7-11: Alternative Democracy and Institutional Variables and Datasets
Models 12-14: Probit of obtaining a rating (to confirm democracies are not statistically more likely to have obtained a rating from agencies)
A note on interactions (Models 4-6 here): These are tests to simply confirm PDT effects are not significantly conditioned by DA variables. The estimations of the PDT on its own in these models is relatively meaningless. This is because they estimate PDT when their fellow interaction terms takes on a value of Zero, which is not a case that happens in real-life in this application (the minimum values of democracy, law, and property rights are all above 0.0- see Appendix B descriptive statistics). Similarly, the DA values are relatively meaningless on their own as they estimate effects when PEFA is 0, a case that does not appear in this sample (all have a PDT score of at least 1 - again see Appendix B). We accordingly suppress these values in this appendix in order to minimize risk of mis-interpretation. The estimations can be found via the replication code if interested.

**Appendix D2: Control for Years Since Last Default Robustness Tests**

| | Moodys | S&P | Fitch |
|---|---|---|---|
| PDT | -0.786** | -0.514** | -0.363* |
| | (0.310) | (0.234) | (0.202) |
| Democracy | -0.355 | -0.569*** | -0.025 |
| | (0.366) | (0.218) | (0.260) |
| Law | 0.772 | 0.232 | 1.486 |
| | (3.234) | (2.064) | (2.610) |
| PropRights | 1.312 | 3.153 | 3.464 |
| | (4.225) | (3.188) | (3.043) |
| GenTpcy | 0.042 | 0.611 | 0.147 |
| | (0.612) | (0.391) | (0.488) |
| GDPpcap | -0.001* | -0.001 | -0.001*** |
| | (0.001) | (0.000) | (0.000) |
| GDPgrowth | -0.005 | -0.000 | -0.007 |
| | (0.023) | (0.025) | (0.019) |
| Inflation | -0.009 | 0.016 | 0.016 |
| | (0.015) | (0.017) | (0.015) |
| ExtDebtStock | 0.018 | 0.013 | 0.030*** |
| | (0.017) | (0.008) | (0.012) |
| Deficit | 1.550 | 0.311 | 1.211 |
| | (1.827) | (1.212) | (0.986) |
| IMFprogram | 0.341 | 0.215 | -0.033 |
| | (0.381) | (0.259) | (0.253) |
| Trade | -0.005 | -0.011 | -0.017 |
| | (0.020) | (0.015) | (0.015) |
| YrsSinceDefault | -0.085 | -0.009 | -0.022 |
| | (0.078) | (0.051) | (0.038) |
| N | 419 | 419 | 419 |

* p<0.1 ** p<0.05 *** p<0.01
Notes: 2SLS models (model 8 in each table with extra control for years since default)

**Discussion:** These models add a control for *YrsSinceDefault,* which captures whether any amount of debt is in default to any lender (private or official, such as IMF or World Bank). 0 means the country is currently in default on any amount, and years since such position otherwise. The estimated effect of the variable is insignificant but in the expected direction: more years since last default should improve credit ratings. PDT's effect is the same across models when *YrsSinceDefault* is included. Of the 9 DA variable estimations in the models above, only one is significant in the expected direction. So, results persist with *YrsSinceDefault* despite the slight drop in N from the main models.

**Appendix D3: Control for Years Since Last Default Robustness Tests**

| | Moodys | S&P | Fitch |
|---|---|---|---|
| PDT | -0.680** | -0.518** | -0.328* |
| | (0.268) | (0.228) | (0.199) |
| Democracy | -0.284 | -0.460** | 0.081 |
| | (0.333) | (0.229) | (0.230) |
| Law | 0.854 | 0.330 | 1.120 |
| | (2.830) | (2.088) | (2.172) |
| PropRights | 0.919 | 2.877 | 3.507 |
| | (4.115) | (3.136) | (2.836) |
| GenTpcy | 0.045 | 0.579 | 0.102 |
| | (0.595) | (0.387) | (0.462) |
| GDPpcap | -0.001* | -0.000 | -0.001** |
| | (0.001) | (0.000) | (0.000) |
| GDPgrowth | -0.010 | -0.004 | -0.024 |
| | (0.031) | (0.028) | (0.022) |
| Inflation | -0.007 | 0.016 | 0.025* |
| | (0.017) | (0.015) | (0.013) |
| ExtDebtStock | 0.020 | 0.012 | 0.025** |
| | (0.016) | (0.009) | (0.011) |
| Deficit | 1.690 | 0.224 | 1.117 |
| | (1.699) | (1.328) | (0.991) |
| IMFprogram | 0.204 | 0.205 | 0.064 |
| | (0.406) | (0.289) | (0.235) |
| Trade | -0.001 | -0.012 | -0.018 |
| | (0.020) | (0.014) | (0.015) |
| ka_open | 0.077 | 0.285 | 1.193 |
| | (1.302) | (0.490) | (0.918) |
| N | 423 | 423 | 423 |

* p<0.1 ** p<0.05 *** p<0.01

Notes: 2SLS models (model 8 in each table with extra control for ka_open)

**Discussion:** These models control for ka_open from the Chinn-Ito index. Results persist despite the loss of a few dozen N and some countries

**Appendix D4: Alternative DV and PDT Robustness Tests**

| Model | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 |
|---|---|---|---|---|---|---|---|---|---|
| DV | BestRtg | BestRtg | Moodys | Fitch | S&P | BestRtg | BestRtg | BestRtg | BestRtg |
| PDT | -0.344*** | -0.467** | | | | | | | |
| | (0.116) | (0.204) | | | | | | | |
| PDT_avg | | | -0.965** | -1.358*** | -0.915* | -1.214*** | | | |
| | | | (0.479) | (0.443) | (0.487) | (0.448) | | | |
| RcdDebt | | | | | | | -1.324*** | | |
| | | | | | | | (0.448) | | |
| LoanPrcssQual | | | | | | | | -1.064*** | |
| | | | | | | | | (0.361) | |
| DSAs | | | | | | | | | -0.161 |
| | | | | | | | | | (0.317) |
| Democracy | 0.163 | -0.280 | -0.269 | 0.242 | 0.308 | 0.080 | -0.016 | 0.222 | 0.448 |
| | (0.427) | (0.280) | (0.534) | (0.666) | (0.627) | (0.441) | (0.465) | (0.446) | (0.507) |
| Law | -1.529 | -0.920 | -4.425* | -4.572 | -7.568*** | -2.079 | -1.859 | -1.896 | -2.788 |
| | (2.283) | (2.220) | (2.618) | (2.828) | (2.709) | (2.243) | (2.158) | (2.185) | (2.440) |
| PropRights | -3.411* | 2.552 | -1.512 | -4.052* | -4.226** | -3.522* | -2.954 | -2.984 | -4.195** |
| | (2.005) | (3.155) | (2.065) | (2.207) | (1.974) | (1.935) | (1.943) | (2.095) | (2.063) |
| GenTpcy | 0.048 | 0.340 | 1.294** | 1.133* | 1.605** | 0.199 | 0.231 | -0.061 | 0.193 |
| | (0.498) | (0.460) | (0.590) | (0.677) | (0.616) | (0.496) | (0.494) | (0.463) | (0.561) |
| GDPpcap | -0.001*** | -0.001*** | -0.001*** | -0.000** | -0.000** | -0.001*** | -0.001*** | -0.001*** | -0.001*** |
| | (0.000) | (0.000) | (0.000) | (0.000) | (0.000) | (0.000) | (0.000) | (0.000) | (0.000) |
| GDPgrowth | -0.054 | -0.002 | -0.071* | -0.013 | -0.022 | -0.059 | -0.053 | -0.011 | -0.061 |
| | (0.044) | (0.015) | (0.043) | (0.042) | (0.044) | (0.045) | (0.044) | (0.059) | (0.042) |
| Inflation | 0.027 | 0.004 | 0.025 | 0.033 | 0.027 | 0.023 | 0.032 | -0.003 | 0.042 |
| | (0.026) | (0.015) | (0.024) | (0.028) | (0.026) | (0.025) | (0.027) | (0.029) | (0.028) |
| ExtDebtStock | 0.014 | 0.020** | 0.019 | 0.020 | 0.026* | 0.014 | 0.014 | 0.017 | 0.009 |
| | (0.012) | (0.010) | (0.012) | (0.014) | (0.013) | (0.013) | (0.013) | (0.013) | (0.013) |
| Deficit | -1.419 | -0.234 | -1.618 | -0.001 | 0.825 | -1.260 | -1.332 | -2.386* | -0.739 |

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| | (1.293) | (0.593) | (1.281) | (1.438) | (1.432) | (1.316) | (1.241) | (1.339) | (1.326) |
| IMFprogram | 1.700*** | 0.143 | 1.354** | 1.465*** | 1.500*** | 1.611*** | 1.600*** | 1.674*** | 1.437*** |
| | (0.467) | (0.274) | (0.575) | (0.549) | (0.473) | (0.464) | (0.447) | (0.478) | (0.497) |
| Trade | 0.003 | -0.006 | 0.014 | 0.022* | 0.016 | 0.004 | 0.006 | 0.001 | 0.014 |
| | (0.011) | (0.013) | (0.011) | (0.013) | (0.011) | (0.012) | (0.012) | (0.012) | (0.013) |
| N | 463 | 463 | 463 | 463 | 463 | 463 | 463 | 463 | 463 |

* p<0.1 ** p<0.05 *** p<0.01

Model 1: same as OLS model four in tables with "Best Rating" DV

Model 2: same as 2SLS model 8 in tables with "Best Rating" DV

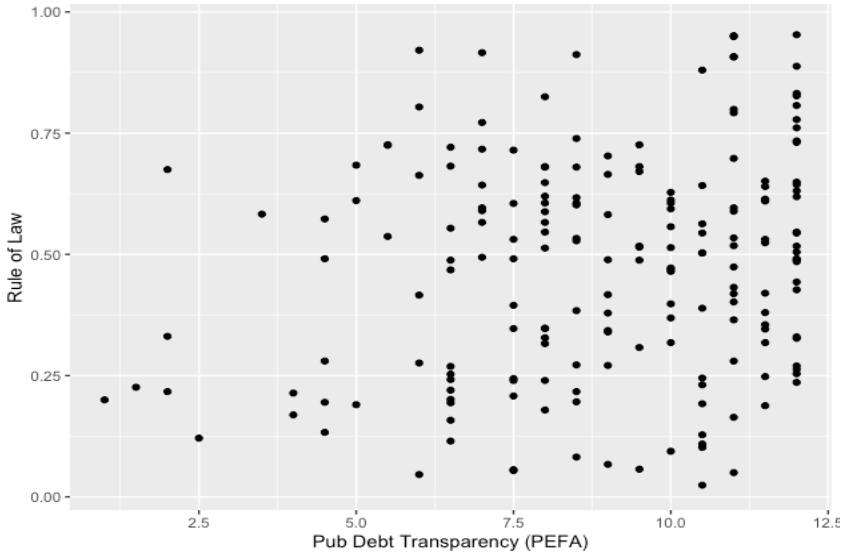
Models 3-6: same as OLS model four in tables with using average of 3 components of PDT score rather than sum

Models 7-9: same as OLS model four in tables with "Best Rating" DV using specific components of the PEFA scores used to construct PDT

**Discussion:** Models 1 and 2 combine Moody's, S&P, and Fitch then take the best rating among them as the DV. Results persist. In addition to providing another robustness test, this eases concern that imputing unrated years is driving findings. Models 3-6 use an average, rather than sum, of the 3 PEFA scores used to construct the PDT variable. This shows the effect of public debt transparency does not depend on how the PDT variable is constructed. Higher values, whether in an additive sum index or in an index averaging the quality of the three behaviors, improve creditworthiness and make the DA variables inconsistent. Models 7-9 then use those three components as explanatory variables independently. The story is very strong for the first two components (reporting and financial process quality, no DA variable is significant in models 7 or 8). DSAs are not significant at the 10% level but keep the expected sign, but still affect DA with 2 of the 3 DA variables being insignificant. This might suggest that the three rating agencies are most focused on data provision and "quality" of public debt management processes, and less concerned with forward looking plans and forecasts, despite work by the World Bank and others on the importance of debt sustainability assessments.

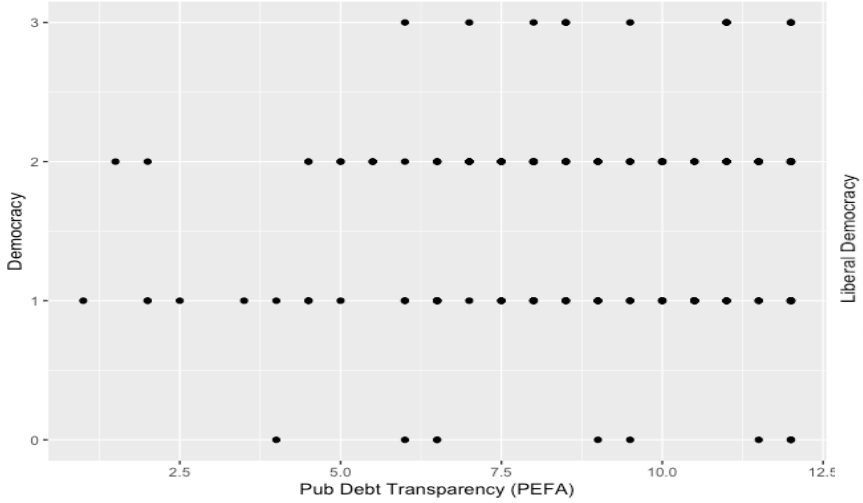
## Appendix D5: Scatterplots confirming PDT not collinear to continuous V-Dem liberal democracy measure

Graph 1: Rule of Law & Public Debt Transparency Scatterplot

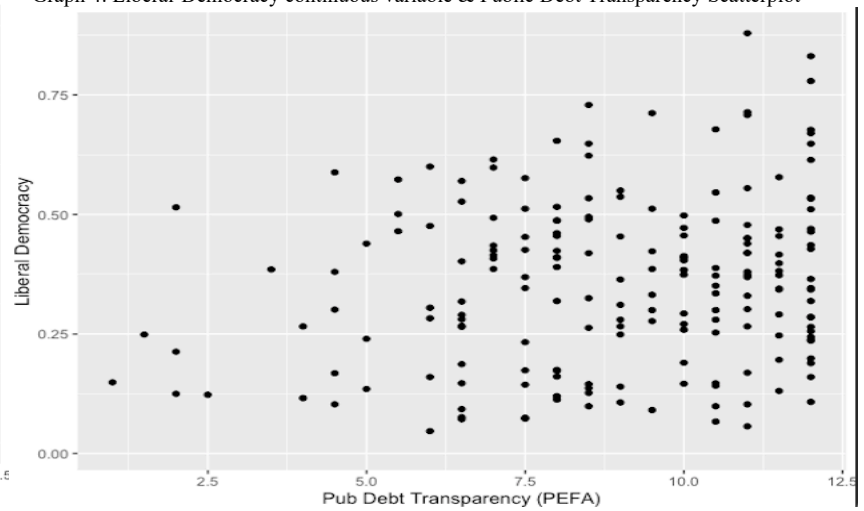



Graph 2: Property Rights & Public Debt Transparency Scatterplot

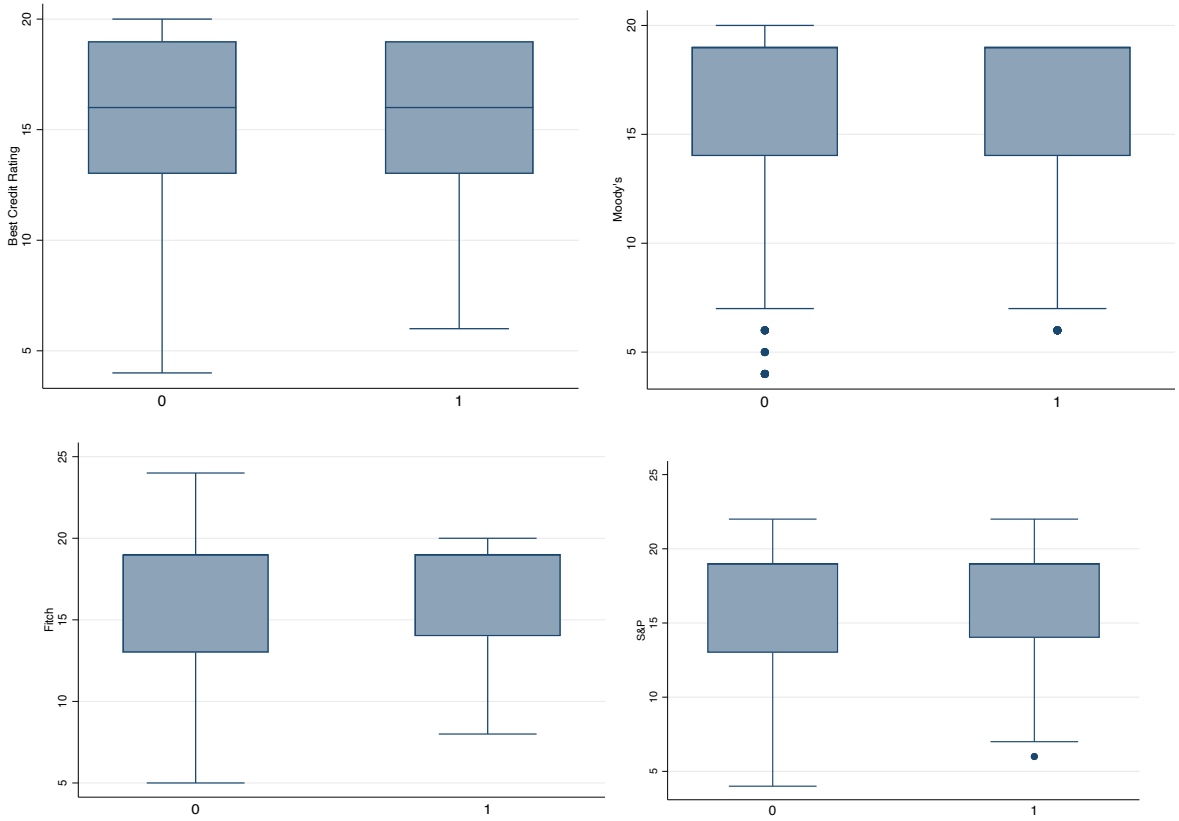
Graph 3: Democracy & Public Debt Transparency Scatterplot




Graph 4: Liberal-Democracy continuous variable & Public Debt Transparency Scatterplot



**Appendix D6: PEFA participant and non-participant credit rating distributions (0 = non-participant, 1 = participant)**




**Discussion:** These box plots compare the distribution of credit ratings between PEFA participants and non-participants (using Moody's, Fitch, S&P, and the best rating the country has from all three). All four plots show the distribution of credit ratings between PEFA participants and non-participants is not significantly different, particularly with reference to the IQR range of each sub-population. This suggests that, if non-participants obtained PEFA scores, adding new countries to the sample of participants would not be likely to change findings. Also notable is that non-participants whiskers go further into investment-grade territory than participants, further signaling it is not only creditworthy countries that select into participating in PEFA.

**Appendix D7: DA (without PEFA) relationships robust to sample size**

| DV | Moodys | | | | Fitch | | | | S&P | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Model | 1 | 2 | 3 | 4 | 1 | 2 | 3 | 4 | 1 | 2 | 3 | 4 |
| Democracy | -0.453** | | | 0.052 | 0.342 | | | 0.497* | 0.241 | | | 0.472* |
| | (0.222) | | | (0.271) | (0.225) | | | (0.259) | (0.224) | | | (0.267) |
| Law | -4.111*** | -4.492*** | -4.719** | -3.606*** | -3.107*** | -2.671*** | -4.056*** | -6.654*** | -5.264*** | -4.928*** | -5.058*** | -9.176*** |
| | (0.907) | (0.926) | (2.022) | (1.288) | (0.869) | (0.856) | (0.678) | (1.211) | (0.857) | (0.860) | (1.709) | (1.199) |
| PropRights | -1.958** | | | -2.033** | -4.256*** | | | -4.309*** | -4.116*** | | | -4.356*** |
| | (0.808) | | | (1.001) | (0.797) | | | (0.974) | (0.781) | | | (0.925) |
| GenTpcy | 0.861*** | 0.636*** | | 0.874*** | 0.781*** | 0.654*** | | 1.381*** | 1.091*** | 0.943*** | | 1.827*** |
| | (0.226) | (0.221) | | (0.309) | (0.227) | (0.236) | | (0.293) | (0.231) | (0.226) | | (0.283) |
| GDPpcap | -0.001*** | -0.001*** | | -0.001*** | -0.001*** | -0.001*** | | -0.000*** | -0.000*** | -0.001*** | | -0.000*** |
| | (0.000) | (0.000) | | (0.000) | (0.000) | (0.000) | | (0.000) | (0.000) | (0.000) | | (0.000) |
| GDPgrowth | 0.042 | 0.055 | | -0.068 | 0.009 | 0.031 | | -0.013 | 0.022 | 0.044 | | -0.021 |
| | (0.035) | (0.036) | | (0.041) | (0.031) | (0.032) | | (0.036) | (0.034) | (0.035) | | (0.039) |
| Inflation | 0.059*** | 0.066*** | | 0.048*** | 0.064*** | 0.084*** | | 0.053*** | 0.051*** | 0.070*** | | 0.039** |
| | (0.015) | (0.015) | | (0.015) | (0.015) | (0.016) | | (0.016) | (0.015) | (0.016) | | (0.016) |
| ExtDebtStock | 0.006* | 0.005 | | 0.014** | 0.002 | 0.001 | | 0.016*** | 0.009** | 0.007** | | 0.024*** |
| | (0.004) | (0.003) | | (0.006) | (0.004) | (0.004) | | (0.005) | (0.004) | (0.004) | | (0.006) |
| Deficit | -1.725*** | -1.884*** | | -0.851 | -0.189 | -0.278 | | 0.603 | -0.432 | -0.535 | | 1.190* |
| | (0.643) | (0.646) | | (0.763) | (0.514) | (0.521) | | (0.584) | (0.595) | (0.605) | | (0.673) |
| IMFprogram | 1.752*** | 1.659*** | | 1.441*** | 1.708*** | 1.531*** | | 1.100*** | 1.916*** | 1.743*** | | 1.214*** |
| | (0.251) | (0.245) | | (0.296) | (0.249) | (0.250) | | (0.312) | (0.222) | (0.229) | | (0.284) |
| Trade | 0.012*** | 0.012*** | | 0.015*** | 0.028*** | 0.025*** | | 0.028*** | 0.017*** | 0.015*** | | 0.020*** |
| | (0.004) | (0.004) | | (0.005) | (0.004) | (0.004) | | (0.005) | (0.004) | (0.004) | | (0.005) |
| N | 742 | 742 | 453 | 453 | 742 | 742 | 453 | 453 | 742 | 742 | 453 | 453 |

* p<0.1 ** p<0.05 *** p<0.01

**Discussion:** Given data missingness issues in research on developing countries, it is possible that the reduction in sample size moving from left-to-right in the main text tables is driving the loss of a significant relationship between DA (particularly *Law* and *PropRights*, following Biglaiser & Staats 2012) rather than PDT. To check this, these models show that DA relationships are significant in the expected direction across the various smaller sample sizes in main text Tables 2-4, *when PDT is not included in the regression*. These

Appendix D7 models in turn: (1) repeat model 4, with 742 N, with only DA; (2) repeat model 4, with 742 N with only "Law"; (3) subset the sample to only include the 453 observations in model 8 to check the bivariate relationship between law and creditworthiness in that smaller sample; (4) repeat model 4 with only those 453 observations and not include PDT.
Across all 4 tests, and for all three agencies (so 12 models), both *Law* and *PropRights* are significant in the expected direction without PDT. These all confirm the sample size is not driving the loss of a relationship between DA variables and creditworthiness. It is far more likely that PDT is confounding the relationship when it is included.

## Appendix E (Alternative Ways of Handling Unrated Country-Years)

- Imputed Missing Values for Unrated Country Years Robustness Tests
    - Estimations (discussion in main text)

## Appendix E: Imputation Robustness Tests

| | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 |
|---|---|---|---|---|---|---|---|---|---|
| PDT | -0.280*** | -0.151*** | -0.265*** | -0.177*** | -0.163*** | -0.187*** | -0.193*** | -0.167*** | -0.200*** |
| | (0.047) | (0.050) | (0.043) | (0.047) | (0.027) | (0.041) | (0.064) | (0.039) | (0.014) |
| Democracy | -1.016*** | -0.413* | -0.569*** | -0.644*** | -0.270** | -0.402*** | | | |
| | (0.329) | (0.241) | (0.194) | (0.213) | (0.124) | (0.128) | | | |
| Law | -0.519 | -1.807 | -0.604 | -0.069 | 0.092 | 0.067 | -0.314 | -0.326 | -0.456 |
| | (1.535) | (1.194) | (0.977) | (0.987) | (0.835) | (0.774) | (1.243) | (0.803) | (0.675) |
| PropRights | 3.200*** | 2.282*** | 5.206*** | 4.231*** | 2.980*** | 4.307*** | 4.495*** | 2.853*** | 4.772*** |
| | (0.909) | (0.807) | (0.638) | (0.976) | (0.849) | (0.787) | (0.972) | (0.579) | (0.403) |
| GenGovTpcy | -0.083 | 0.328 | -0.253 | -0.179 | 0.032 | -0.177 | -0.129 | 0.095 | -0.191*** |
| | (0.322) | (0.248) | (0.213) | (0.162) | (0.131) | (0.138) | (0.144) | (0.131) | (0.059) |
| GDPpcap | -0.000*** | -0.001*** | -0.000*** | -0.001*** | -0.001*** | -0.000*** | -0.001*** | -0.001*** | -0.000*** |
| | (0.000) | (0.000) | (0.000) | (0.000) | (0.000) | (0.000) | (0.000) | (0.000) | (0.000) |
| GDPgrowth | 0.025 | -0.010 | 0.004 | 0.009 | -0.024** | -0.021** | 0.008 | -0.027*** | -0.023*** |
| | (0.015) | (0.015) | (0.015) | (0.008) | (0.012) | (0.010) | (0.011) | (0.007) | (0.004) |
| Inflation | 0.047*** | 0.034* | 0.044*** | 0.025*** | 0.014 | 0.028*** | 0.024*** | 0.014*** | 0.028** |
| | (0.014) | (0.018) | (0.010) | (0.008) | (0.009) | (0.008) | (0.002) | (0.005) | (0.012) |
| ExtDebtStock | 0.032*** | 0.030*** | 0.029*** | 0.032*** | 0.023*** | 0.023*** | 0.030*** | 0.022*** | 0.021*** |
| | (0.006) | (0.006) | (0.004) | (0.003) | (0.003) | (0.003) | (0.002) | (0.004) | (0.003) |
| Deficit | -1.274** | -1.474*** | 0.745** | -0.935*** | -1.376*** | 0.509* | -1.007*** | -1.334*** | 0.469* |
| | (0.538) | (0.412) | (0.308) | (0.314) | (0.279) | (0.274) | (0.144) | (0.138) | (0.245) |
| IMFprogram | 1.216*** | 0.789*** | 0.625*** | 0.753*** | 0.298*** | 0.399*** | 0.789*** | 0.243 | 0.345*** |
| | (0.209) | (0.183) | (0.139) | (0.126) | (0.111) | (0.087) | (0.120) | (0.152) | (0.035) |
| Trade | -0.002 | 0.002 | -0.001 | -0.006* | 0.003 | 0.003 | -0.007** | 0.002 | 0.001 |
| | (0.003) | (0.004) | (0.003) | (0.004) | (0.003) | (0.004) | (0.003) | (0.001) | (0.002) |
| N | 453 | 453 | 453 | 453 | 453 | 453 | 453 | 453 | 453 |
| Year FEs | YES | YES | YES | YES | YES | YES | YES | YES | YES |
| Region FEs | YES | YES | YES | YES | YES | YES | YES | YES | YES |
| Inc Group FEs | YES | YES | YES | YES | YES | YES | YES | YES | YES |
| Regime Level | | | | | | | YES | YES | YES |

* p<0.1 ** p<0.05 *** p<0.01

Constants Suppressed

Cluster-Robust SEs in all models

OLS (Models 1-3); REs (Models 4-6); Nested Res with Regime as Level (Models 7-9)

DVs: Imputed Moody's (models 1, 4, 7); Imputed S&P (models 2, 5, 8); Imputed Fitch (models 3, 6, 9)

## Appendix F (First-stage and instrument discussion)

- F1: First-stage selection equations in Heckman models
    - Discussion
    - Model estimation table
- F2: Further discussion of instrument in 2SLS models
    - Discussion
    - Correlations

## Appendix F1: Heckman first-stages

These are the first-stage estimations for model 5 in each of the estimation tables (2-4) in the main text. They estimate and control for the hazard of selection into PEFA participation, which is then added to the outcome equation. Notably, the Inverse Mills Ratio is insignificant in all three models. Also notable is that democracy does not make PEFA participation more likely.

Variables excluded from outcome equation:

- *Opposition*
  - To the best of our knowledge, opposition party strength has never been shown to systematically shape creditworthiness and, outside of a link to the DA thesis, it is hard to theorize why this would be the case. But it does shape government transparency and thus potentially participation in a program like PEFA (Berliner 2014).
- *ODAperGNI*
  - ODA (for disaster relief, or local, regional, and global health, for example), does not necessarily imply more or less creditworthiness. Developing countries use multiple financial resources when borrowing each year regardless of creditworthiness (Bunte 2019 for example). But ODA is shown to shape transparency through conditionality and monitoring (de Renzio 2009).
- *BondDummy*
  - Bond issuance is a dummy (not amount). It is not clear how issuing a bond would systematically move creditworthiness up or down, so it is not included in the outcome equation (though of course creditworthiness, the Y in those equations, at very low values, may shape the bond dummy). And for the same logic as the above point about ODA, much recent research shows issuing a bond of some size, or drawing on capital markets to some extent, often happens regardless of (or despite) weak credit ratings. However, issuing a bond may incentivize participating in a transparent public finance program like PEFA.

Variables from the outcome equation are also included if they may make participation in IFI programs like PEFA more likely (trade volume, property rights, and rule of law are not included, for example).

**Appendix F1: Selection equations in main models**

| | Moody's | S&P | Fitch |
|---|---|---|---|
| Opposition | -0.053 | -0.053 | -0.053 |
| | (0.090) | (0.090) | (0.090) |
| ODAperGNI | 0.013 | 0.013 | 0.013 |
| | (0.017) | (0.017) | (0.017) |
| anyDummy | 0.340* | 0.340* | 0.340* |
| | (0.192) | (0.192) | (0.192) |
| Democracy | 0.181 | 0.181 | 0.181 |
| | (0.113) | (0.113) | (0.113) |
| GenTpcy | 0.314*** | 0.314*** | 0.314*** |
| | (0.081) | (0.081) | (0.081) |
| GDPpcap | -0.000*** | -0.000*** | -0.000*** |

| | | | |
|---|---|---|---|
| | (0.000) | (0.000) | (0.000) |
| GDPgrowth | -0.099*** | -0.099*** | -0.099*** |
| | (0.019) | (0.019) | (0.019) |
| Inflation | -0.011 | -0.011 | -0.011 |
| | (0.010) | (0.010) | (0.010) |
| ExtDebtStock | -0.002 | -0.002 | -0.002 |
| | (0.002) | (0.002) | (0.002) |
| Deficit | 0.058 | 0.058 | 0.058 |
| | (0.371) | (0.371) | (0.371) |
| IMFprogram | 0.235 | 0.235 | 0.235 |
| | (0.149) | (0.149) | (0.149) |
| ka_open | -0.299** | -0.299** | -0.299** |
| | (0.126) | (0.126) | (0.126) |
| _cons | 0.435 | 0.435 | 0.435 |
| | (0.431) | (0.431) | (0.431) |
| / | | | |
| mills | 0.342 | 0.896 | 1.483 |
| | (1.615) | (1.468) | (1.860) |

* p<0.1 ** p<0.05 *** p<0.01

Heckman SEs

First-stage of Heckman selection models (Probit estimations of PEFA participation); All estimations equal because same first stage model across Heckman models

## Appendix F2: More on the IV in each table's Model 8

The main text presents theoretical and statistical reasons for the validity of using a dummy for whether there was a new PEFA report that year as an IV. In general, the claim is that the action of producing a new report itself doesn't affect the outcome, save by reflecting the practices on which it is reporting.

One may still wonder if a country is likely to get a new PEFA report when it is more or less creditworthy, which would mean the instrument is directly correlated with the outcome equation's DV. The box plots of creditworthiness among PEFA participants and non-participants in Appendix D signals that the distribution of creditworthiness in non-participants is broadly the same as participants', and in fact non-participants include more creditworthy countries in its distribution. But other tests are still useful.

Here, the dummy "NewPEFAReportYr," which is the dummy IV, is shown to be (1) insignificantly related to creditworthiness and (2) when unit effects are included, so the within-unit relationship between creditworthiness and getting a new PEFA report is estimated, signs change. There is no systematic relationship between the act of getting a PEFA report and creditworthiness that undermines this dummy variable as an IV.

This further eases concern that countries systematically get new PEFA reports only when they are more or less creditworthy, or that the act of simply getting a new report shapes creditworthiness more than what the score reflects about the transparency of a country's public debt management practices. This along with the theoretical and statistical evidence already discussed, lends significant credibility to the instrument.

**Appendix F2: Correlation b/w New Report Timing and Credit Ratings**

| | Simple correlation | | | Correlation with unit FE | | |
|---|---|---|---|---|---|---|
| | Moody's | Fitch | S&P | Moody's | Fitch | S&P |
| NewPEFAReportYr | 0.134 | 0.425 | 0.137 | -0.167 | -0.038 | -0.128 |
| | (0.290) | (0.285) | (0.286) | (0.124) | (0.093) | (0.102) |
| N | 1632 | 1632 | 1632 | 1632 | 1632 | 1632 |

* p<0.1 ** p<0.05 *** p<0.01

## Appendix G: CDS Models

| | 1 | 2 | 3 | 4 |
|---|---|---|---|---|
| PEFA | -0.109* | -0.109* | -0.086* | -0.122** |
| | (0.060) | (0.063) | (0.048) | (0.059) |
| Democracy | -0.029 | -0.033 | 0.004 | -0.096 |
| | (0.082) | (0.088) | (0.075) | (0.083) |
| Law | 0.988 | 0.988 | 1.004* | -1.183 |
| | (0.644) | (0.644) | (0.525) | (1.368) |
| PropRights | 0.046 | 0.048 | 1.773** | 0.178 |
| | (0.486) | (0.496) | (0.849) | (0.559) |
| US Interest Rates | -0.761*** | -0.763*** | -0.278 | -1.121*** |
| | (0.182) | (0.170) | (0.230) | (0.286) |
| Democracy x US Interest Rates | | 0.002 | | |
| | | (0.030) | | |
| Law x US Interest Rates | | | -0.574** | |
| | | | (0.242) | |
| PropRights x US Interest Rates | | | | 0.666** |
| | | | | (0.330) |
| N | 71 | 71 | 71 | 71 |

* p<0.1 ** p<0.05 *** p<0.01

Controls, Constants, Country FEs, Year FEs, Region FEs, and Income Category FEs suppressed