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Abstract

The initiation of IMF agreements in Sub-Saharan Africa (SSA) follows an inherently different process than in other regions. While economic conditions explain part of the difference in lending decisions, some economic but also political factors have systematically different effects on IMF lending in SSA. Studies that account for selection into IMF programs should take this into account in order to increase the reliability of their findings.

Keywords: IMF lending programs, Sub-Saharan Africa, Bayesian logit models, Blinder-Oaxaca decomposition

JEL-codes: C59, F33, O19

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1 Introduction

The effects of lending programs of the International Monetary Fund (IMF) on economic growth and other variables have been extensively investigated.[1] A major challenge for identifying causal effects of IMF programs is to address selection into such agreements, which is often modeled by binary choice models (e.g. Heckman, 1979; Rosenbaum and Rubin, 1983). These models attribute program participation to various economic and political determinants and their ability to correctly predict the participation of a country in an agreement in a given year is crucial for bias correction.[2]

A big part of IMF lending is concentrated in Sub-Saharan Africa (SSA), where IMF programs are often more frequent than in other regions of the world (Marchesi and Sirtori, 2011). Poor macro-economic conditions in SSA might be a cause; yet, economic variables that are strong predictors of IMF programs in other regions have been found to have only limited power to explain IMF lending in Africa (Stone, 2004). Stone (2004) found evidence that the politics of the IMF might work differently in Africa, where the IMF's major shareholders interfere with the enforcement of loan conditions.

Understanding whether also the initiation of IMF agreements in SSA follows different considerations than in other regions of the world (ROW) can help to improve the prediction of a country's program participation and thus has important implications for the correction of selection bias in applied research.[3] Yet, in what respect IMF lending strategies are different in SSA has not been systematically investigated.

Several factors make SSA subject of potentially different lending decisions: SSA is home to the highest share of least developed and heavily indebted poor countries; countries in SSA have become independent quite recently, which may reinforce preferential treatment by their former colonizers (e.g. Alesina and Dollar, 2000);[4] the largest share of external debt is owed to official creditors, rather than the private sector (e.g. Helleiner, 1992).

In this note we investigate (i) whether potential differences in the engagement of countries in SSA with the IMF are related to differences in their economic and political environments, and (ii) whether some of their characteristics have a different effect on the probability

[1] For recent studies on macroeconomic effects see e.g. Dreher and Walter (2010); Jorra (2012); Bird and Rowlands (2017) and for social and political outcomes Dreher and Gassebner (2012); Clements et al. (2013); Oberdabernig (2013); Casper (2015); Nelson and Wallace (2016); Stubbs et al. (2016).

[2] For papers on the determinants of IMF programs see e.g. Joyce (1992); Sturm et al. (2005); Andersen et al. (2006); Harrigan et al. (2006); Dreher and Vreeland (2009) and Moser and Sturm (2011).

[3] If the initiation of IMF programs is driven by different factors across regions, pooling the regions to estimate the selection model may result in a worse prediction of a country's program participation, and thus weaken the power of models for bias correction.

[4] Western colonizers might cater to their former colonies by exerting influence on IMF lending decisions through their voting shares.

of initiating an IMF agreement as compared to ROW. If we find evidence for a different decision making process in SSA and ROW, this has to be taken into account when modeling the selection of countries into IMF programs.

2 Data and methodology

Our baseline analysis uses data provided by Moser and Sturm (2011), who evaluated the robustness of a large number of potential determinants of signing an agreement with the IMF for the period 1990–2009. The dataset covers 14 economic and 14 political variables, X, which are used to predict the initiation of a new IMF arrangement, Y, in a given year, $P(Y = 1|X)$.

	ROW sample		SSA sample	
	Mean	Std. dev.	Mean	Std. dev.
Signature of agreement	0.215	0.412	0.222	0.417
International reserves	3.871	2.050	2.589	1.685
Real GDP growth	3.699	4.325	3.536	4.517
Log(GDP pc)	7.400	0.810	5.736	0.871
Investment	21.053	5.683	18.129	5.526
Debt service	21.841	14.099	19.848	13.400
External debt (% of GNI)	59.886	40.907	107.737	48.816
External balance (% of GDP)	-4.328	7.949	-8.351	10.032
Economic globalization (KOF index)	51.590	14.002	36.854	9.864
Terms of trade adjustment	-0.779	3.847	-0.238	7.679
Inflation	13.853	17.416	11.024	12.825
Government budget deficit	15.401	11.014	7.453	4.605
Fixed exchange rate	0.162	0.369	0.444	0.498
Currency crisis	0.081	0.273	0.101	0.302
Financial openness	0.104	1.408	-0.634	1.005
Share of past 5 years with IMF	0.242	0.206	0.290	0.180
Lagged executive elections	0.147	0.355	0.169	0.376
Lagged legislative elections	0.254	0.436	0.212	0.410
Lead executive elections	0.145	0.352	0.185	0.389
Lead legislative elections	0.247	0.432	0.212	0.410
Political instability	0.458	1.853	-0.413	0.461
Social unrest	0.429	1.680	-0.199	0.841
Political rights and civil liberties	3.350	1.312	4.349	1.176
Political globalization (KOF index)	69.193	15.531	59.469	14.935
Quality of government	0.494	0.149	0.428	0.106
UN Security Council membership	0.098	0.298	0.048	0.214
Share in world GDP	0.311	0.495	0.017	0.010
Trade with US	0.106	0.112	0.042	0.077
Vote in line with the US in UNGA	0.310	0.118	0.269	0.083
Observations	469		189	

Table 1: Descriptive statistics

The economic determinants include international reserves, real GDP growth, GDP per capita, investment, debt service, external debt, external balance of goods and services, economic globalization, terms of trade adjustment, inflation, government budget deficit, dummies for fixed exchange rate and currency crisis, and a measure for financial openness. The political determinants include the moving average of an IMF program dummy for the past 5 years, dummies for lagged and lead executive and legislative elections, political instability, social unrest, a political rights and civil liberties index, political globalization, quality of government, a dummy for UN Security Council membership, the country's share in world GDP, trade with the US, and an indicator for voting in line with the US in the UN General Assembly.[5] In addition to these variables, we include year dummies in X in order to account for common time effects. Table 1 reports descriptive statistics for the variables that form part of our analysis, for ROW and SSA.

We estimate Bayesian logit models (equation 1) to explain the initiation of IMF agreements for SSA and for ROW separately, including the full set of covariates and time effects.

$$P(Y = 1|X) = \Lambda(X'\beta) \tag{1}$$

β is the parameter vector and Λ is the logistic distribution function. Bayesian estimation methods apply Bayes' rule to derive information about the parameters β from the data y.

$$\underbrace{p(\beta|y)}_{\text{posterior}} \propto \underbrace{p(y|\beta)}_{\text{likelihood}} \underbrace{p(\beta)}_{\text{prior}} \tag{2}$$

The posterior density is proportional to the likelihood function times the prior density. We use a prior with 0 mean and precision 0.0001 (see also Polson and Scott, 2011; Polson et al., 2013). The posterior mean for variable k is given by

$$E(\beta_k|y) = \frac{1}{S}\sum_{s=1}^{S}\beta_k^s, \tag{3}$$

[5] We had to exclude a measure of short-term debt because of its limited coverage. As this variable turned out to be significant in only 0.2% of all estimated models by Moser and Sturm (2011), this is likely to be of minor importance. Furthermore, we updated the data on the quality of government from the ICRG because the dataset provided by Moser and Sturm contained only missing values for this variable. We kept only observations for which data on all variables is available, what resulted in an unbalanced panel that covers the period 1990–2004. Information on the country-year coverage of the final sample is provided in Table A.1 in Appendix A. For a more detailed description of the variables see Moser and Sturm (2011).

where S is the number of draws from the posterior. Numerical p-values are derived as

$$p_k = \frac{1}{S}\sum_{s=1}^{S} I\left(\frac{\beta_k^s}{E(\beta_k|y)} > 0\right), \tag{4}$$

where I is the indicator function.[6] We combine three Markov Chains of $S = 100,000$ iterations each, and check their convergence using Gelman and Rubin's (1992) convergence diagnostic.

Bayesian estimation techniques are particularly suited for dealing with small samples since inference does not rely on a large number of observations but on the number of samples, S, taken from the posterior. The Bayesian framework, furthermore, allows to use information on parameter estimates from our baseline analysis as prior information in additional robustness checks that rely on smaller sample sizes. We will return to this in section 4.

The results of the Bayesian logit regressions feed into a Blinder-Oaxaca decomposition (Blinder 1973; Oaxaca 1973; Yun 2004; Fairlie 2005) that splits the difference in the probability of entering an IMF agreement between the regions into a part that results from differences in economic or political environments (difference in characteristics) and a part that stems from differences in the influence of those characteristics on the probability of receiving an IMF loan (difference in parameters):[7]

$$\begin{aligned} &P(Y^{ssa}=1|X^{ssa}) - P(Y^{row}=1|X^{row}) = \\ &= \underbrace{\left[\overline{\Lambda(X^{ssa}\beta^{row})} - \overline{\Lambda(X^{row}\beta^{row})}\right]}_{\text{difference in characteristics, } \Delta_k^X} + \underbrace{\left[\overline{\Lambda(X^{ssa}\beta^{ssa})} - \overline{\Lambda(X^{ssa}\beta^{row})}\right]}_{\text{difference in parameters, } \Delta_k^b} \end{aligned} \tag{5}$$

The contribution of an individual covariate k to Δ_k^X and Δ_k^b is derived as in Kaiser (2015):

$$\begin{aligned} \Delta_k^X &= \frac{1}{N^{row}N^{ssa}}\sum_{i}^{N^{row}}\sum_{j}^{N^{ssa}}\left[\Lambda(X_j^{ssa}\beta^{row}) - \Lambda(X_i^{row}\beta^{row})\right]\frac{(X_{jk}^{ssa} - X_{ik}^{row})\beta_k^{row}}{(X_j^{ssa} - X_i^{row})\beta^{row}} \\ \Delta_k^b &= \frac{1}{N^{row}N^{ssa}}\sum_{i}^{N^{row}}\sum_{j}^{N^{ssa}}\left[\Lambda(X_j^{ssa}\beta^{ssa}) - \Lambda(X_i^{ssa}\beta^{row})\right]\frac{X_{jk}^{ssa}(\beta_k^{ssa} - \beta_k^{row})}{X_j^{ssa}(\beta^{ssa} - \beta^{row})} \end{aligned} \tag{6}$$

If the signature of IMF agreements follows the same process in SSA and ROW we will observe statistically significant effects for differences in characteristics only, but not for differences in parameters. On the other hand, if the determinants of signing an agreement differ across the regions the difference in parameters will be statistically significant

[6] The calculation of the p-values corresponds to counting the proportion of draws for which β_k^s is equally signed as its posterior mean $E(\beta_k|y)$.

[7] ROW serves as the base group. $\overline{\Lambda(X\beta)} = 1/N\sum_i^N \Lambda(X_i\widehat{\beta})$ and i is an observation.

and better prediction of program participation can be obtained by accounting for this heterogeneity.

3 Results

Table 2 reports the results of the decomposition analysis. 22.2% of the observations in SSA have signed an agreement with the IMF; in ROW this number amounts to 21.5%.[8]

The column labeled difference in characteristics summarizes the impact of observable conditions that are systematically different in SSA as compared to ROW. The logit estimates (in Table B.1 in Appendix B) suggest that higher external debt increases the probability of entering an IMF agreement (in the base group for the decomposition, ROW), which makes countries in SSA 4.5 percentage points more likely to enter on account of their higher debt levels. By contrast, a higher external balance contributes to a lower prospect of initiating an agreement, making countries in SSA 2.7 percentage points more likely to sign. Finally, in our sample countries in ROW are more likely to engage with the IMF if they have been part of an agreement in the previous five years; the larger share of past program years in SSA leads to a 0.4 percentage point higher likelihood of signing a new agreement. While other factors such as differences in GDP per capita or economic globalization have a quantitatively important contribution to the difference in characteristics part, their effect is estimated rather imprecisely, resulting in numerical p-values (slightly) above 0.1.

Turning to the more important question of whether a country's characteristics have different impacts on the conclusion of new lending agreements in SSA, the column labeled difference in parameters in Table 2 indicates that the effects of some economic but also certain political variables are substantially different in SSA as compared to ROW. The logit results in Table B.1 show that in SSA higher debt levels decrease the likelihood of signing a new agreement, while in ROW the opposite applies; this contributes to a 24.3 percentage points lower probability of concluding a new program in SSA. Furthermore, while a higher share of years under an IMF agreement in the past raises the probability of signing a new agreement in ROW, the effect in SSA is the opposite, contributing to a 19.1 percentage points lower likelihood of entering an agreement in SSA. Also voting patterns in the UN General Assembly have a different influence on the initiation of agreements in ROW and SSA. In SSA, voting proximity with the US increases the likelihood of signing an agreement substantially, while the positive effect is much lower in ROW; as a result

[8] Although this gap is not statistically significant, this does not preclude different decision making processes to be in force across the regions. For selection bias correction to be effective, individual countries' program participation has to be correctly predicted, rather than aggregate shares.

voting patterns contribute to a 25 percentage points higher probability of concluding an IMF agreement in SSA. The effects of all other variables have a numerical p-value larger than 0.1 in the decomposition analysis, although their quantitative effect is sometimes rather important.[9]

	SSA		ROW	
Probability of signing agreement	22.222 ***	(0.000)	21.535 ***	(0.000)
	difference in characteristics		difference in parameters	
International reserves	0.941	(0.395)	1.073	(0.861)
Real GDP growth	0.076	(0.376)	1.509	(0.571)
Log(GDP pc)	-7.797	(0.123)	4.748	(0.921)
Investment	0.498	(0.616)	5.772	(0.723)
Debt service	-0.382	(0.105)	-3.394	(0.601)
External debt (% of GNI)	4.475 **	(0.037)	-24.255 **	(0.015)
External balance (% of GDP)	2.678 ***	(0.003)	3.102	(0.597)
Economic globalization (KOF index)	4.633	(0.133)	28.740	(0.113)
Terms of trade adjustment	0.082	(0.965)	-0.361	(0.585)
Inflation	-0.333	(0.268)	2.122	(0.661)
Government budget deficit	-0.215	(0.895)	2.259	(0.736)
Fixed exchange rate	0.652	(0.647)	3.865	(0.383)
Currency crisis	-0.026	(0.637)	-1.188	(0.152)
Financial openness	-1.341	(0.249)	1.168	(0.549)
Share of past 5 years with IMF	0.438 **	(0.040)	-19.09 ***	(0.009)
Lagged executive elections	0.188	(0.220)	0.835	(0.669)
Lagged legislative elections	-0.246	(0.199)	1.653	(0.439)
Lead executive elections	-0.022	(0.792)	-0.955	(0.524)
Lead legislative elections	-0.141	(0.379)	0.815	(0.667)
Political instability	-0.084	(0.913)	-1.665	(0.576)
Social unrest	-0.651	(0.293)	0.328	(0.847)
Political rights and civil liberties	-1.556	(0.289)	-11.441	(0.308)
Political globalization (KOF index)	-1.09	(0.393)	-9.808	(0.505)
Quality of government	1.257	(0.129)	8.483	(0.617)
UN Security Council membership	0.204	(0.312)	-0.302	(0.489)
Share in world GDP	-0.227	(0.888)	10.563	(0.108)
Trade with US	1.195	(0.287)	3.667	(0.196)
Vote in line with the US in UNGA	-1.444	(0.136)	24.964 *	(0.076)
Time dummies (joint effect)	0.067	(0.823)	-34.349	(0.475)
Contribution to total difference	1.828	(0.724)	-1.141	(0.845)

Note: Numerical p-values, based on the sign of the parameter estimates of the Markov chains, in parentheses. * p<0.10, ** p<0.05, *** p<0.01.

Table 2: Decomposition results

Our findings are in line with the arguments in the introduction. The lower probability of countries in SSA to conclude a new lending program if they had an active agreement with the IMF in the past five years could stem from the on average longer program duration in

[9] Especially economic globalization, share in world GDP, and time effects have a quantitatively important contribution to the difference in parameters part. Yet, their numerical p-values are (slightly) above 0.1.

this region, where concessional lending is more likely than in ROW. Additionally, the debt structure in SSA may impact on the willingness of the IMF to support countries with a lending agreement, resulting in a negative effect of higher levels of debt on IMF program initiation (see also Helleiner, 1992). Moreover, similar arguments to those of Stone (2004), that IMF lending is highly politicized in SSA, might account for the particularly strong influence of UN voting patterns on program initiation in SSA.

4 Robustness

To test the robustness of our results we add five additional variables to the set of baseline regressors: government expenditure as a share of GDP, a country's share of IMF quotas, ethnic fractionalization, the share of seats of parties representing special interests (religious, nationalistic, regional, and rural) in parliament, and a political cohesion index (see Sturm et al., 2005, for details).[10] Because the inclusion of these variables results in smaller sample sizes, we make use of information derived from the baseline analysis. More specifically, we use the parameter estimates from the analysis above as prior means for the baseline controls and the inverse of ten times their squared standard errors as prior precision, and specify the priors for the five new variables like in section 2.

As shown in Table 3, slightly more observations have signed an agreement with the IMF in the restricted sample: 24.3% in SSA and 22.8% in ROW. Like before, differences in the external balance and in previous engagement with the IMF remain important contributors to the difference in characteristics part, accounting, respectively, for a 4.2 and 0.3 percentage points higher probability of concluding a new agreement in SSA. Additionally, differences in some variables that had a numerical p-value of slightly above 0.1 before, now gain qualitative importance: The lower GDP per capita in SSA contributes to a 14.4 percentage points lower probability of concluding an agreement in this region, since higher income levels are positively related to program participation (see also Moser and Sturm, 2011).[11] Economic globalization and a better quality of government, by contrast, are connected to a lower likelihood of initiating a new agreement in the base group; thus, the lower values for these indicators in SSA contribute to a 10.9 and 2.8 percentage point higher probability of signing an agreement in this region. Since ethnic fractionalization is connected to a higher probability of program participation, countries in SSA are 10.5 percentage points more likely to enter an agreement, all else equal. Differences in external debt between SSA and ROW are less important than before.

[10] Descriptive statistics for the data used in the robustness analysis are available in Table A.2 in Appendix A. Variables used by Sturm et al. (2005) that are highly correlated or accounted for by other covariates in X, or that are captured by the time-dummies, are excluded from the robustness check.

[11] The results of the logit models are available in Table B.2 in Appendix B.

	SSA		ROW	
Probability of signing agreement	24.342 ***	(0.000)	22.811 ***	(0.000)
	difference in characteristics		difference in parameters	
International reserves	2.386	(0.200)	7.963	(0.332)
Real GDP growth	0.105	(0.519)	1.322	(0.765)
Log(GDP pc)	-14.360 **	(0.041)	48.813	(0.587)
Investment	-0.303	(0.767)	-0.921	(0.957)
Debt service	-0.591	(0.245)	-7.712	(0.473)
External debt (% of GNI)	2.252	(0.487)	-38.195 **	(0.013)
External balance (% of GDP)	4.201 ***	(0.003)	8.336	(0.273)
Economic globalization (KOF index)	10.883 **	(0.032)	19.878	(0.515)
Terms of trade adjustment	0.230	(0.715)	0.116	(0.872)
Inflation	-0.880	(0.104)	5.301	(0.481)
Government budget deficit	0.183	(0.912)	0.124	(0.989)
Fixed exchange rate	0.616	(0.791)	9.931	(0.288)
Currency crisis	0.002	(0.997)	-1.973 *	(0.087)
Financial openness	-2.388	(0.200)	4.081	(0.284)
Share of past 5 years with IMF	0.323 **	(0.041)	-33.189 ***	(0.005)
Lagged executive elections	0.220	(0.232)	2.019	(0.413)
Lagged legislative elections	-0.440	(0.211)	1.651	(0.568)
Lead executive elections	0.085	(0.884)	-2.597	(0.336)
Lead legislative elections	-0.100	(0.689)	3.166	(0.303)
Political instability	0.128	(0.903)	7.350	(0.267)
Social unrest	-0.917	(0.291)	2.921	(0.171)
Political rights and civil liberties	-3.150	(0.141)	-48.074 **	(0.023)
Political globalization (KOF index)	-1.478	(0.500)	-40.360	(0.176)
Quality of government	2.822 **	(0.041)	-6.703	(0.821)
UN Security Council membership	0.251	(0.293)	-0.494	(0.541)
Share in world GDP	-0.945	(0.739)	22.544	(0.183)
Trade with US	1.918	(0.239)	5.519	(0.381)
Vote in line with the US in UNGA	-2.143	(0.131)	51.859 **	(0.032)
Ethnic fractionalization	10.498 **	(0.025)	20.783	(0.735)
Share of IMF quota	1.529	(0.723)	5.629	(0.749)
Special interest in parliament	-0.094	(0.559)	5.355	(0.204)
Political cohesion	1.562	(0.388)	1.154	(0.424)
Government expenditure (% of GDP)	0.098	(0.527)	6.978	(0.783)
Time dummies (joint effect)	0.059	(0.853)	-73.603	(0.156)
Contribution to total difference	12.558	(0.157)	-11.027	(0.228)

Note: Numerical p-values, based on the sign of the parameter estimates of the Markov chains, in parentheses. * p<0.10, ** p<0.05, *** p<0.01.

Table 3: Decomposition results (robustness analaysis)

The robustness check reinforces the finding that economic and political factors have substantially different effects on the likelihood of concluding an IMF agreement in SSA. The difference in parameters parts confirm the differential impact of external debt, past involvement with the IMF, and voting patterns in the UN General Assembly, with larger effects as compared to the baseline analysis. Additionally, we find that the occurrence of currency crises and higher values of political rights and civil liberties impact negatively

on the signature of IMF agreements in SSA, while their effect is much less important in ROW; this contributes, respectively, to a 1.9 and 48.1 percentage points lower probability of signing an agreement in SSA.[12]

5 Discussion

Our analysis indicates that the selection of countries into IMF programs follows different considerations in SSA as compared to other world regions. The impact of the different data generating process underlying IMF lending in SSA is quantitatively more important than the difference in economic and political environments that countries in SSA face. This has important implications for empirical studies that use Heckman selection models or propensity score matching to correct potential selection bias when evaluating the effects of IMF programs; allowing for interactions of regional dummies with economic and political variables can substantially improve the prediction of countries' program participation, which is crucial for obtaining reliable results of the impact of IMF programs on the variables of interest.

Our research also opens the door for more detailed analyses of the reasons for the differences found. Furthermore, while most empirical studies do not explicitly distinguish between the determinants of concessional and non-concessional lending programs when modeling selection, this would be important for future research; it could well be that the results for SSA are influenced by the concessional character of most of their agreements.

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[12] Since many types of IMF programs (especially concessional lending programs to low-income countries) last for more than one year and the currency crisis dummy enters the analysis one year lagged, the negative effect might reflect that an agreement has been signed in the same year in which the crisis occurred. The negative impact of political rights and civil liberties, as a proxy for democracy, might reflect the lower perception of political costs for turning to the IMF in autocratic regimes (see Moser and Sturm, 2011).

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A Data appendix

SSA sample	
Cameroon	2003, 2004
Ethiopia	1994, 1995, 1996, 1997, 1998, 1999, 2000, 2001, 2002, 2003, 2004
Gabon	1990, 1991, 1992, 1993, 1994, 1995, 1996, 1997, 1998, 1999, 2000, 2001, 2002, 2003, 2004
Ghana	1990, 1991, 1992, 1993, 1994, 1995, 1996, 1997, 1998, 1999, 2000, 2001, 2002, 2003, 2004
Kenya	1990, 1991, 1992, 1993, 1994, 1995, 1996, 1997, 1998, 1999, 2000, 2001, 2002, 2003, 2004
Madagascar	1990, 1991, 1992, 1993, 1994, 1995, 1996, 1997, 1998, 1999, 2000, 2001, 2002, 2003, 2004
Malawi	1990, 1991, 1992, 1993, 1994, 1995, 1996, 1997, 1998, 1999, 2000, 2001, 2002, 2003,
Mali	1992, 1993, 1994, 1995, 1996, 1997, 1998, 1999, 2000, 2001, 2002, 2003, 2004
Mozambique	1996, 1997, 1998, 1999, 2000, 2001, 2002, 2003, 2004
Niger	1990, 1991, 1992, 1993, 1994, 1995, 1996, 1997, 1998, 1999, 2000, 2001,
Senegal	1990, 1991, 1992, 1993, 1994, 1995, 1996, 1997, 1998, 1999, 2000, 2001, 2002, 2003, 2004
Tanzania	1992, 1993, 1994, 1995, 1996, 1997, 1998, 1999, 2000, 2001, 2002, 2003, 2004
Togo	1990, 1991, 1992, 1993, 1994, 1995, 1996, 1997, 1998, 1999, 2000, 2001, 2002, 2003, 2004
Uganda	1990, 1991, 1992, 1993, 1994, 1995, 1996, 1997, 1998, 1999, 2000, 2001, 2002, 2003, 2004
Zambia	1990, 1991, 1992, 1993, 1999, 2000, 2001, 2002, 2003, 2004
ROW sample	
Albania	1997, 1998, 1999, 2000, 2001, 2002, 2003, 2004
Algeria	1990, 1991, 1992, 1993,
Argentina	1995, 1996, 1997, 1998, 1999, 2000, 2001, 2002, 2003, 2004
Armenia	2000, 2001, 2002, 2003, 2004
Azerbaijan	2001, 2002, 2003, 2004
Bangladesh	1991, 1992, 1993, 1994, 1995, 1996, 1997, 1998, 1999, 2000, 2001, 2002, 2003, 2004
Belarus	1999, 2000, 2001, 2002, 2003, 2004
Bolivia	1990, 1991, 1992, 1993, 1994, 1995, 1996, 1997, 1998, 1999, 2000, 2001, 2002, 2003, 2004
Brazil	1990, 1991, 1992, 1993, 1994, 1995, 1996, 1997, 1998, 1999, 2000, 2001, 2002, 2003, 2004
Bulgaria	1995, 1996, 1997, 1998, 1999, 2000, 2001, 2002, 2003, 2004
Chile	1990, 1991, 1992, 1993, 1994, 1995, 1996, 1997, 1998, 1999, 2000, 2001, 2002, 2003, 2004
Colombia	1990, 1991, 1992, 1993, 1994, 1995, 1996, 1997, 1998, 1999, 2000, 2001,
Costa Rica	1990, 1991, 1992, 1993, 1994, 1995, 1996, 1997, 1998, 1999, 2000, 2001, 2002, 2003, 2004
Croatia	2000, 2001, 2002, 2003, 2004
Ecuador	1990, 1991, 1992, 1993, 1994, 1995, 1996, 1997, 1998, 1999, 2000,
El Salvador	1990, 1991, 1992, 1993, 1994, 1995, 1996, 1997, 1998, 1999, 2000, 2001, 2002, 2003, 2004
Guatemala	1990, 1991, 1992, 1993, 1994, 1995, 1996, 1997, 1998, 1999, 2000, 2001, 2002, 2003, 2004
Guyana	1997, 1998, 1999, 2000, 2001, 2002, 2003, 2004
Haiti	1990, 1991, 1992, 1993, 1994, 1995,
Honduras	1990, 1991, 1992, 1993, 1994, 1995, 1996, 1997, 1998, 1999, 2000, 2001, 2002, 2003, 2004
India	1990, 1991, 1992, 1993, 1994, 1995, 1996, 1997, 1998, 1999, 2000, 2001, 2002, 2003, 2004
Indonesia	1990, 1991, 1992, 1993, 1994, 1995, 1996, 1997, 1998, 1999, 2000, 2001, 2002, 2003, 2004
Jordan	1990, 1991, 1992, 1993, 1994, 1995, 1996, 1999, 2000, 2001, 2002, 2003, 2004
Kazakhstan	2002, 2003, 2004
Latvia	2000, 2001, 2002, 2003, 2004
Malaysia	1990, 1991, 1992, 1993, 1994, 1995, 1996, 1997, 1998, 1999, 2000, 2001, 2002, 2003, 2004
Mexico	1990, 1991, 1992, 1993, 1994, 1995, 1996, 1997, 1998, 1999, 2000, 2001, 2002, 2003, 2004
Moldova	2000, 2001, 2002, 2003, 2004
Morocco	1991, 1992, 1993, 1994, 1995, 1996, 1997, 1998, 1999, 2000, 2001, 2002, 2003, 2004
Nicaragua	2002, 2003, 2004
Pakistan	1990, 1991, 1992, 1993, 1994, 1995, 1996, 1997, 1998, 1999, 2000, 2001, 2002, 2003, 2004
Panama	1990, 1991, 1992, 1993, 1994, 1995, 1996, 1997, 1998, 1999, 2000, 2001, 2002, 2003, 2004
Paraguay	1991, 1992, 1993, 1994, 1995, 1996, 1997, 1998, 1999, 2000, 2001, 2002, 2003, 2004
Peru	1990, 1991, 1992, 1993, 1994, 1995, 1996, 1997, 1998, 1999, 2000, 2001, 2002, 2003, 2004
Philippines	1990, 1991, 1992, 1993, 1994, 1995, 1996, 1997, 1998, 1999, 2000, 2001, 2002, 2003, 2004
Poland	1993, 1994, 1995, 1996, 1997, 1998, 1999, 2000, 2001, 2002, 2003, 2004
Romania	1999, 2000, 2001, 2002, 2003, 2004
Thailand	1990, 1991, 1992, 1993, 1994, 1995, 1996, 1997, 1998, 1999, 2000, 2001, 2002, 2003, 2004
Tunisia	1990, 1991, 1992, 1993, 1994, 1995, 1996, 1997, 1998, 1999, 2000, 2001, 2002, 2003, 2004
Turkey	1990, 1991, 1992, 1993, 1994, 1995, 1996, 1997, 1998, 1999, 2000, 2001, 2002, 2003, 2004
Ukraine	1999, 2000, 2001, 2002, 2003, 2004
Uruguay	1992, 1993, 1994, 1995, 1996, 1997, 1998, 1999, 2000, 2001, 2002, 2003, 2004
Vietnam	2003, 2004

Table A.1: Country-year coverage (baseline estimation)

	ROW sample		SSA sample	
	Mean	Std. dev.	Mean	Std. dev.
IMF program	0.228	0.420	0.243	0.431
International reserves	3.993	2.035	2.493	1.641
Real GDP growth	3.698	4.253	3.644	4.261
Log(GDP pc)	7.420	0.819	5.806	0.899
Investment	21.070	5.615	18.508	5.483
Debt service	21.677	13.864	18.804	12.477
External debt (% of GNI)	60.207	41.239	104.688	46.419
External balance (% of GDP)	-4.513	8.037	-8.426	10.984
Economic globalization (KOF index)	52.483	13.812	36.416	8.867
Terms of trade adjustment	-0.764	3.687	-1.348	6.181
Inflation	13.109	16.540	10.182	11.064
Government budget deficit	15.039	10.183	7.611	4.224
Fixed exchange rate	0.168	0.374	0.500	0.502
Currency crisis	0.078	0.269	0.086	0.281
Financial openness	0.173	1.399	-0.644	0.897
Share of past 5 years with IMF	0.247	0.207	0.278	0.163
Lagged executive elections	0.138	0.346	0.164	0.372
Lagged legislative elections	0.251	0.434	0.204	0.404
Lead executive elections	0.154	0.362	0.211	0.409
Lead legislative elections	0.253	0.435	0.217	0.414
Political instability	0.456	1.869	-0.427	0.441
Social unrest	0.431	1.727	-0.206	0.881
Political rights and civil liberties	3.287	1.270	4.220	1.182
Political globalization (KOF index)	70.283	14.966	59.362	15.560
Quality of government	0.501	0.143	0.427	0.101
UN Security Council membership	0.097	0.296	0.053	0.224
Share in world GDP	0.316	0.502	0.017	0.010
Trade with US	0.107	0.115	0.046	0.084
Vote in line with the US in UNGA	0.321	0.116	0.277	0.082
Ethnic fractionalization	0.408	0.213	0.755	0.091
Share of IMF quota	0.431	0.480	0.080	0.042
Special interest in parliament	0.150	0.211	0.139	0.271
Political cohesion	0.728	0.912	0.072	0.260
Government expenditure (% of GDP)	13.006	4.505	13.409	3.412
Observations	434		152	

Table A.2: Descriptive statistics (robustness analysis)

B Supplementary tables

	ROW sample			SSA sample		
	coef.	p-value	converg.	coef.	p-value	converg.
International reserves	-0.867	(0.395)	1.00	-0.196	(0.889)	1.00
Real GDP growth	0.431	(0.381)	1.00	0.726	(0.276)	1.00
Log(GDP pc)	5.705	(0.123)	1.00	4.809	(0.568)	1.00
Investment	-0.226	(0.616)	1.00	0.165	(0.832)	1.00
Debt service	0.245	(0.105)	1.00	-0.026	(0.977)	1.00
External debt (% of GNI)	0.110 **	(0.037)	1.00	-0.154 *	(0.063)	1.00
External balance (% of GDP)	-0.768 ***	(0.003)	1.00	-0.882	(0.135)	1.00
Economic globalization (KOF index)	-0.374	(0.133)	1.00	0.547	(0.217)	1.00
Terms of trade adjustment	-0.484	(0.349)	1.00	0.697	(0.133)	1.00
Inflation	0.146	(0.268)	1.00	0.286	(0.504)	1.00
Government budget deficit	0.028	(0.895)	1.00	0.340	(0.721)	1.00
Fixed exchange rate	2.790	(0.647)	1.00	10.659	(0.263)	1.00
Currency crisis	-3.868	(0.509)	1.00	-14.776 *	(0.071)	1.00
Financial openness	2.005	(0.249)	1.00	-0.640	(0.845)	1.00
Share of past 5 years with IMF	20.238 **	(0.040)	1.00	-66.826 **	(0.031)	1.00
Lagged executive elections	8.091	(0.220)	1.00	9.914	(0.271)	1.00
Lagged legislative elections	6.694	(0.199)	1.00	11.684	(0.136)	1.00
Lead executive elections	-1.134	(0.792)	1.00	-6.066	(0.371)	1.00
Lead legislative elections	4.544	(0.379)	1.00	6.968	(0.399)	1.00
Political instability	0.072	(0.913)	1.00	4.418	(0.556)	1.00
Social unrest	1.128	(0.293)	1.00	-0.193	(0.992)	1.00
Political rights and civil liberties	-1.913	(0.289)	1.00	-4.317 *	(0.099)	1.00
Political globalization (KOF index)	0.145	(0.393)	1.00	-0.071	(0.777)	1.00
Quality of government	-25.06	(0.129)	1.00	3.855	(0.900)	1.00
UN Security Council membership	-6.017	(0.312)	1.00	-11.008	(0.305)	1.00
Share in world GDP	0.777	(0.888)	1.00	658.185	(0.109)	1.00
Trade with US	-23.233	(0.287)	1.00	80.482	(0.279)	1.00
Vote in line with the US in UNGA	33.665	(0.136)	1.00	119.376 **	(0.021)	1.00
Time dummies		yes			yes	
Observations		469			189	

Note: The table reports average marginal effects, multiplied by 100 (coef.). Numerical p-values, based on the sign of the parameter estimates of the Markov chains, in parentheses. * p<0.10, ** p<0.05, *** p<0.01. converg. refers to Gelman and Rubin's (1992) convergence diagnostic. SSA refers to Sub-Saharan Africa and ROW stands for the rest of the world.

Table B.1: Bayesian logit results: average marginal effects (baseline)

	ROW sample			SSA sample		
	coef.	p-value	converg.	coef.	p-value	converg.
International reserves	-1.345	(0.200)	1.00	1.394	(0.537)	1.00
Real GDP growth	0.325	(0.524)	1.00	0.441	(0.537)	1.00
Log(GDP pc)	7.493 **	(0.041)	1.00	10.827	(0.343)	1.00
Investment	0.142	(0.767)	1.00	0.056	(0.965)	1.00
Debt service	0.180	(0.245)	1.00	-0.178	(0.645)	1.00
External debt (% of GNI)	0.043	(0.487)	1.00	-0.227 **	(0.023)	1.00
External balance (% of GDP)	-0.870 ***	(0.003)	1.00	-1.199 **	(0.029)	1.00
Economic globalization (KOF index)	-0.575 **	(0.032)	1.00	0.005	(0.980)	1.00
Terms of trade adjustment	-0.166	(0.751)	1.00	-0.206	(0.707)	1.00
Inflation	0.226	(0.104)	1.00	0.479	(0.313)	1.00
Government budget deficit	-0.023	(0.912)	1.00	-0.019	(1.000)	1.00
Fixed exchange rate	1.622	(0.791)	1.00	14.287	(0.260)	1.00
Currency crisis	-5.476	(0.336)	1.00	-19.150 **	(0.029)	1.00
Financial openness	2.353	(0.200)	1.00	-2.962	(0.463)	1.00
Share of past 5 years with IMF	21.720 **	(0.025)	1.00	-76.467 **	(0.015)	1.00
Lagged executive elections	7.925	(0.232)	1.00	12.936	(0.153)	1.00
Lagged legislative elections	6.669	(0.211)	1.00	9.447	(0.272)	1.00
Lead executive elections	1.405	(0.884)	1.00	-7.435	(0.311)	1.00
Lead legislative elections	2.331	(0.689)	1.00	11.387	(0.201)	1.00
Political instability	-0.166	(0.903)	1.00	-11.075	(0.259)	1.00
Social unrest	1.138	(0.291)	1.00	-6.704	(0.236)	1.00
Political rights and civil liberties	-2.788	(0.141)	1.00	-10.037 ***	(0.003)	1.00
Political globalization (KOF index)	0.125	(0.500)	1.00	-0.395	(0.229)	1.00
Quality of government	-35.972 **	(0.041)	1.00	-34.230	(0.475)	1.00
UN Security Council membership	-6.115	(0.293)	1.00	-10.066	(0.383)	1.00
Share in world GDP	2.603	(0.739)	1.00	923.174	(0.181)	1.00
Trade with US	-27.390	(0.239)	1.00	66.668	(0.497)	1.00
Vote in line with the US in UNGA	35.707	(0.131)	1.00	154.966 **	(0.017)	1.00
Ethnic fractionalization	26.124 **	(0.025)	1.00	36.475	(0.511)	1.00
Share of IMF quota	-4.012	(0.723)	1.00	44.417	(0.760)	1.00
Special interest in parliament	17.463 *	(0.100)	1.00	35.062 **	(0.041)	1.00
Political cohesion	-2.101	(0.388)	1.00	9.107	(0.484)	1.00
Government expenditure (% of GDP)	0.361	(0.521)	1.00	0.593	(0.640)	1.00
Time dummies		yes			yes	
Observations		434			152	

Note: The table reports average marginal effects, multiplied by 100 (coef.). Numerical p-values, based on the sign of the parameter estimates of the Markov chains, in parentheses. * p<0.10, ** p<0.05, *** p<0.01. converg. refers to Gelman and Rubin's (1992) convergence diagnostic. SSA refers to Sub-Saharan Africa and ROW stands for the rest of the world.

Table B.2: Bayesian logit results: average marginal effects (robustness)