Supporting Information (Web Appendix)

Appendix 1: Descriptive Statistics

	Mean	*S.D.*	*Min.*	*Max.*
Institutional Investor	31.65	15.22	4.1	73.8
Euromoney	13.27	7.43	0.02	31.95
IMF	0.55	0.5	0	1
IMF signed	0.21	0.41	0	1
Left Party	0.24	0.43	0	1
Democracy	12.40	6.75	0	20
Investment	13.14	6.83	0.15	45.24
GDP growth	3.58	4.46	-19.01	27.46
Inflation	56.16	448.34	-11.69	11749.64
Current account balance	-3.14	5.7	-31.07	28.71
Budget balance	-3.3	4.39	-49.94	18.27
Capital account openness	2.09	2.65	0	9
Fixed Exchange Rate	0.41	0.5	0	1
Debt service	2957.83	5918.18	0.3	67400
Reserves	5026.91	18402.16	3	396358
Political Instability	0.19	1.51	-0.56	15.44
Years in office	6.99	8.08	1	46
Years in IMF program (since 1951)	13.58	8.87	0	38
Noncompliance	0.28	0.45	0	1
UN voting	0.24	0.12	0	0.72
Number of other countries in program	59.79	8.64	42	75
Moody's	6.62	3.15	1	14

Appendix 2: Countries in the Sample (from 1980 to 2004)

(1) Country-Years under IMF Programs

Left		*Non-left*	
Country	*Years in Program*	*Country*	*Years in Program*
Albania	1998–99, 03–04	Albania	1995–96
Argentina	2004	Argentina	1983–2003
Belarus	1996	Armenia	2004
Bolivia	1990–93	Bangladesh	1988–90, 03–04
Brazil	1998–99	Bolivia	1981, 1986–89, 94–04
Bulgaria	1993–96	Brazil	1983–86, 88–90, 92–93
Costa Rica	1983–90, 95–97	Bulgaria	1992, 1997–2004
Croatia	2001–03	Burkina Faso	1994–95, 2001–04
Dominican Rep.	1983–86, 03	Cameroon	1989–92, 94–96
Ecuador	1983–84, 89–92, 00–01	Chile	1983–90
Ethiopia	1982	Colombia	1999–2004
Hungary	1984–85, 88–90, 96–98	Costa Rica	1981–82, 91–94
India	1981–84, 91–93	Cote d'Ivoire	1984–91, 94–00
Lesotho	2001–03	Croatia	1994–00, 04
Lithuania	1994–96	Dominican Rep.	1991–94
Mauritius	1982–86	Ecuador	1985–88, 94–95, 03–04
Nepal	1992–95	Egypt	1981, 1987–88, 91–98
Pakistan	1989–90, 94–96	El Salvador	1982–83, 90–00
Poland	1994–96	Estonia	1994–2001
Romania	1992–96, 2001–02	Ethiopia	1992–99
Russia	1999	Gabon	1981–82, 1986, 89–92
Senegal	1981–85, 99–00	Georgia	1998–99, 01–03
Sierra Leone	1981–89	Ghana	1995–99
Sri Lanka	1995, 01–03	Guatemala	1982–84, 88–90, 92–94, 02–04
Tanzania	1989–94, 96–04		
Trinidad &Tobago	1989–90	Haiti	1995–99
Tunisia	1987–92	Honduras	1982–83, 90–97, 99–01, 04
Turkey	2000–02		
Uganda	1984	Hungary	1991–94
Zambia	1987, 96–00	Indonesia	1997–2003
		Jamaica	1981–86
		Jordan	1989–04
		Kazakhstan	1996–02
		Kenya	1981–86, 88–94, 96 –04
		Kyrgyz Republic	2001–03
		Latvia	1995–02
		Lithuania	1997, 2000–03

Left		*Non-left*	
Country	*Years in Program*	*Country*	*Years in Program*
		Malawi	1982–86, 88–91
		Mali	1994–03
		Mexico	1983–93, 95–97, 99–00
		Morocco	1981–93
		Nepal	1989–90 , 03–04
		Nicaragua	1994–04
		Nigeria	1987–92, 2000
		Pakistan	1981–83, 88, 91, 93, 97–04
		Panama	1981–87, 92–02
		Papua New Guinea	1990–92, 95–97, 00–01
		Paraguay	2003–04
		Peru	1982–85, 93–00, 02-04
		Philippines	1981, 1983–00
		Romania	1997–00
		Russia	1995–98, 00
		Rwanda	2004
		Senegal	2001–02
		Sierra Leone	1994–98, 01–04
		Sri Lanka	1983–84, 88–94
		Sudan	1981, 83
		Thailand	1981–83, 85–86, 97–00
		Togo	1995–98
		Turkey	1981–82, 84–85, 94–96, 99
		Uganda	1987–2004
		Ukraine	1999–2002
		Uruguay	1982–87, 90–93, 96–02
		Venezuela	1989–93, 96–97
		Zimbabwe	1982–84, 92–95

(2) Countries without IMF Programs

Botswana	Czech Republic*	Moldova*	South Africa
Burundi*	Iran	Oman	Swaziland
China*	Malaysia	Slovak Republic*	Syria

(*These countries had IMF programs but their IMF years are not listed due to missing observations.)

Appendix 3: Results from Treatment Effects Model

As its name implies, the treatment effects model is applicable to cases in which the first stage estimation represents the receipt of some "treatment," such as participation in a program or policy (Wooldridge 2002: 68). It corrects for selection bias by measuring the correlation between the errors that result from selection and those that result from performance, and then including this correlation (called the hazard rate) in the second stage. A statistically significant hazard rate indicates the existence of selection bias. The treatment effects model is specified as follows.

$$\begin{aligned} IMF_{i,t-1} = {} & \alpha_0 + \alpha_1 Budget\ Balance_{i,t-2} + \alpha_2 GDP\ Growth_{i,t-2} + \alpha_3 Inflation_{i,t-2} \\ & + \alpha_4 Current\ Account\ Balance_{i,t-2} + \alpha_5 Flexible\ Exhange\ Rate_{i,t-2} \\ & + \alpha_6 \ln International\ Reserves_{i,t-2} + \alpha_7 \ln Debt\ Service_{i,t-2} \\ & + \alpha_8 \ln Investment_{i,t-2} + \alpha_9 UN\ Voting_{i,t-2} + \alpha_{10} Years\ in\ Program_{i,t-2} \\ & + \alpha_{11} Number\ of\ Other\ Countries_{i,t-2} \\ & + \mu_{it} \end{aligned} \quad (1)$$

$$\begin{aligned} \ln Credit\ Rating_{it} = {} & \beta_0 + \beta_1 IMF_{i,t-1} + \beta_2 Democracy_{i,t-1} + \beta_3 Budget\ Balance_{i,t-1} \\ & + \beta_4 Capital\ \ Account\ Openness_{i,t-1} + \beta_5 GDP\ Growth_{i,t-1} \\ & + \beta_6 Inflation_{i,t-1} + \beta_7 Current\ Account\ Balance_{i,t-1} \\ & + \beta_8 \ln Investment_{i,t-1} + \beta_9 Fixed\ Exhange\ Rate_{i,t-1} \\ & + \beta_{10} \ln International\ Reserves_{i,t-1} + \beta_{11} \ln Debt\ Service_{i,t-1} \\ & + \beta_{12} \ln Credit\ Rating_{i,t-1} + \beta_{13} \rho_{it} \\ & + \epsilon_{it} \end{aligned} \quad (2)$$

Equation (1) examines the determinants of IMF program participation, while equation (2) estimates the determinants of credit ratings, correcting for selection bias. *Years in Program* is the cumulative number of years of program participation, included on the assumption that countries are more likely to sign up to an IMF program if they have participated in such a program in the past, with that likelihood increasing with lengthier periods of past program participation. *Number of Other Countries* is the number of other countries in a program, as the more countries that are currently participating in an IMF program, the more likely it is that a particular country will continue to participate (Vreeland 2003).[1] ρ in equation (2) is the hazard rate, which measures the correlation between the error terms from equations (1) and (2). Lastly, both year and country dummies are also included. For the treatment effects model, equations (1) and (2) are estimated separately for leftist and non-leftist governments.[2]

[1] Signing an IMF agreement can be costly for the governments that do so because they have to ascribe to IMF conditionality, thus sacrificing a degree of sovereignty in return for a loan (Vreeland 2003: 11). These sovereignty costs are reduced when many countries are subject to the conditions of IMF programs (Vreeland 2003: 11).

[2] The leftist and non-leftist government regressions are estimated separately, rather than using an interaction term (interacting government partisanship with the IMF) in equation (2), because the treatment effects model prohibits the interaction of an endogenous variable (the IMF) and another explanatory variable in equation (2).

Table A.1 reports the performance equation (second stage) of the treatment effects model. In both *Institutional Investor* and *Euromoney* ratings, IMF programs have a positive effect among leftist governments but not among non-leftist governments. The hazard rates are not statistically significant, however, indicating that there is no selection bias in either measure. Therefore, the main empirical specifications of this study use a fixed-effects OLS model.

Table A.1. Effect of IMF Programs on Investor Perceptions, in Treatment Effects Model

Variables	*Institutional Investor*		*Euromoney*	
	Leftist Governments	*Non-Leftist Governments*	*Leftist Governments*	*Non-Leftist Governments*
IMF	0.066***	-0.020	0.163**	-0.168***
	(0.019)	(0.013)	(0.075)	(0.051)
Democracy	-0.001	-0.000	0.004	-0.008
	(0.002)	(0.001)	(0.013)	(0.005)
Budget Balance	0.003**	0.000	-0.008	0.004
	(0.001)	(0.001)	(0.008)	(0.005)
Capital Account Openness	-0.001	0.005*	-0.010	0.028**
	(0.005)	(0.003)	(0.020)	(0.011)
GDP Growth	0.000	0.006***	0.004	0.009***
	(0.001)	(0.001)	(0.006)	(0.003)
Inflation	0.000	0.000	-0.002***	0.000
	(0.000)	(0.000)	(0.001)	(0.000)
Current Account Balance	-0.001	0.001	-0.006*	-0.006**
	(0.001)	(0.001)	(0.004)	(0.003)
Fixed Exchange Rate	-0.030*	-0.002	0.026	0.093*
	(0.016)	(0.011)	(0.062)	(0.049)
Investment (log)	0.013	0.040**	-0.020	-0.010
	(0.027)	(0.016)	(0.098)	(0.059)
Reserves (log)	0.035***	0.045***	0.035	0.186***
	(0.009)	(0.006)	(0.041)	(0.035)
Debt Service (log)	-0.001	-0.015**	-0.122***	0.031
	(0.012)	(0.007)	(0.047)	(0.024)
Rating in the Previous Year (log)	0.841***	0.838***	0.118	0.166***
	(0.031)	(0.016)	(0.076)	(0.035)
Constant	0.335	0.574***	3.291***	0.545
	(0.252)	(0.146)	(0.994)	(0.557)
Hazard	-0.015	0.011	-0.053	0.036
	(0.011)	(0.008)	(0.041)	(0.029)
Country Dummies	Yes	Yes	Yes	Yes
Year Dummies	Yes	Yes	Yes	Yes
Wald Chi-Sq	27296.27	28344.30	2160.32	4433.48
Prob>Chi-Sq	0.0000	0.0000	0.0000	0.0000
Observations	270	875	176	594

(*Notes*: The table reports the second stage regression results;
Standard errors are in parentheses; *** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$.)

Appendix 4: Effect of IMF Programs on the *Euromoney* Rating

Here I use a modified version of *Euromoney* data, following Dreher and Voigt (2008). The original *Euromoney* data include surveys of economists and political analysts for their views on the economic performance and projection of each country based on analytical, credit, and market indicators. The results of these surveys are then combined with quantitative indicators. The quantitative indicators take up 40% of a rating's weight, which include external debt, debt service, and the balance of payments, all of which are highly correlated with the determinants of IMF program participation and also those of credit ratings. This raises concern over the endogeneity problem (Dreher and Voigt 2008). Since 1992, *Euromoney* began to publish individual components of their ratings for each country, allowing researchers to exclude the economic performance variables. Therefore, the modified *Euromoney* data include three categories (political risk [25%], credit ratings by rating agencies such as *Moody's* and *Standard and Poor's* [10%], and access to short-term finance [5%]), out of nine total categories. The modified variable is highly correlated with both the original *Euromoney* (0.91) and *Institutional Investor* (0.96) ratings.

Table A.2. Effect of IMF Programs on *Euromoney* Ratings

Variables	*Euromoney*
IMF	-0.076
	(0.048)
Left Party	-0.092*
	(0.051)
IMF*Left Party	0.144**
	(0.058)
Democracy	-0.001
	(0.006)
Budget Balance	0.001
	(0.004)
Capital Account Openness	0.028**
	(0.011)
GDP Growth	0.006**
	(0.003)
Inflation	0.000
	(0.000)
Current Account Balance	-0.007*
	(0.004)
Investment (log)	0.050
	(0.050)
Fixed Exchange Rate	0.061
	(0.041)
Reserves (log)	0.152***
	(0.044)
Debt Service (log)	0.022
	(0.022)
Rating in the Previous Year (log)	0.191*
	(0.099)
Constant	0.378
	(0.472)
Country Dummies	Yes
Year Dummies	Yes
Observations	812
R^2	0.67

(*Notes*: Robust standard errors are in parentheses; *** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$. The dependent variable is log-transformed.)

Appendix 5: Effect of Signing an Agreement with the IMF and Government Partisanship on the Change in Investors' Credit Assessments (*Euromoney* and *Moody's*)

As discussed in Appendix 4, the modified *Euromoney* ratings include credit ratings, which consist of 25% of the modified rating; the remaining 75% includes political risk and discount on forfaiting. As such, this measure, just like the original *Euromoney* measure, may not be as timely as those made by financial institutions such as *Institutional Investor* in response to economic shocks. In Table A.3, the *Euromoney* rating is not significantly associated with signing an IMF program, whereas the *Moody's* rating, which is a component of the *Euromoney* ratings, shows that IMF programs improve the credibility of leftist governments more than that of non-leftist governments.[3]

[3] The *Moody's* rating is highly correlated with both the modified *Euromoney* (0.91) and *Institutional Investor* (0.90) ratings.

Table A.3. Regression Results on the Effect of Signing an Agreement with the IMF and Government Partisanship on the Change in Investors' Credit Assessments

Variables	*Euromoney*	*Moody's*
IMF Signed	-0.006	-0.052
	(0.035)	(0.037)
Left Party	-0.038	-0.053
	(0.036)	(0.046)
IMF Signed*Left	0.041	0.155*
	(0.075)	(0.079)
Democracy	-0.002	-0.005
	(0.006)	(0.007)
Δ Budget Balance	-0.007	-0.007
	(0.004)	(0.005)
Capital Account Openness	0.031***	-0.002
	(0.008)	(0.012)
GDP growth	0.002	0.017***
	(0.005)	(0.005)
Δ Inflation	0.000	-0.000
	(0.000)	(0.000)
Δ Current Account Balance	-0.000	-0.003
	(0.002)	(0.005)
Δ Investment (log)	0.103**	-0.088
	(0.051)	(0.168)
Fixed Exchange Rate	0.092**	0.028
	(0.044)	(0.034)
Δ Reserves (log)	-0.056	-0.006
	(0.037)	(0.044)
Δ Debt Service (log)	0.071***	-0.004
	(0.026)	(0.046)
Rating in the Previous Year (log)	-0.774***	-0.284***
	(0.134)	(0.067)
Constant	1.120***	0.723***
	(0.255)	(0.238)
Country Dummies	Yes	Yes
Year Dummies	Yes	Yes
Observations	729	373
R-squared	0.47	0.40

(*Notes*: Robust standard errors are in parentheses; *** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$. The dependent variables are log-transformed and first-differenced.)

Appendix 6. Government Partisanship and IMF Programs

Table A.4. Government Partisanship and IMF Program Participation

Dependent variable: IMF program participation (1 = participation, 0 = no participation)	
Left Party	-0.232**
	(0.093)
Budget Balance	-0.002
	(0.010)
GDP Growth	-0.022***
	(0.009)
Inflation	-0.000
	(0.000)
Current Account Balance	-0.014*
	(0.008)
Fixed Exchange Rate	-0.138
	(0.089)
Debt Service (log)	0.195***
	(0.038)
Investment (log)	-0.172*
	(0.103)
Foreign Reserves (log)	-0.310***
	(0.044)
Democracy	-0.003
	(0.007)
UN Voting	1.778***
	(0.373)
Years in Program	0.032***
	(0.005)
Number of Other Countries in Program	0.001
	(0.005)
Constant	-2.055***
	(0.741)
Observations	1,230
Wald chi-sq	200.35
Prob > chi-sq	0.0000

(*Notes*: Robust standard errors are in parentheses; *** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$)

Table A.5 Government Partisanship and Program Compliance

Dependent Variable: Program noncompliance (based on fund disbursement) (1 = noncompliance, 0 = compliance)	
Left Party	-0.381**
	(0.152)
Budget Balance	0.039***
	(0.015)
GDP Growth	-0.017
	(0.012)
Inflation	0.000
	(0.000)
Current Account Balance	0.006
	(0.011)
Fixed Exchange Rate	-0.197
	(0.125)
Debt Service (log)	0.160***
	(0.058)
Investment (log)	0.057
	(0.115)
Foreign Reserves (log)	-0.176**
	(0.072)
Democracy	0.005
	(0.009)
UN Voting	1.338***
	(0.473)
Hazard Rate (from selection model)	0.277
	(0.354)
Constant	-2.635***
	(0.955)
Observations	662
Wald chi-squared	33.14
Prob > chi-sq	0.0009

(*Notes*: Robust standard errors are in parentheses; *** $p < 0.01$, ** $p < 0.05$.)

The results in Tables A.4 and A.5 indicate that leftist governments are less likely to sign an IMF agreement than non-left governments, but are more likely to be compliant once in the program. I further test whether the credibility gains of leftist governments from participating in IMF programs depend on their program compliance. Table A.6 presents the regression results of a model that interacts the IMF, noncompliance (based on fund disbursement), and government partisanship. They suggest that leftist governments are likely to benefit from program participation when they comply with the program, whereas their non-leftist counterparts enjoy no such credibility boost from program participation regardless of whether they comply. More specifically, when a leftist government agrees to an IMF program, complying with that program (*Noncompliance* = 0) leads to a ratings change of 4.2 points (the sum of the coefficients of *IMF Signed* and *IMF Signed*Left Party*), and this effect is statistically significant at the 1% level, whereas no such credibility boost is found among non-leftist governments (represented by the coefficient of *IMF Signed*). When governments are noncompliant, no statistically significant association is found between program participation and credit ratings in either the leftist or the non-leftist group. More importantly, the difference between leftist and non-leftist governments in their ability to translate program compliance into credibility gains (i.e., the difference-in-differences) is statistically significant (represented by the coefficient of *IMF signed*Left Party*), which corresponds to the Nixon-Goes-to-China dynamics.[4]

[4] Whereas these results suggest that leftist governments gain credibility through program participation because they are compliant, alternative compliance measures and specifications show no significant effect of program compliance on the relationship among program participation, government partisanship, and credit ratings. Given this caveat, a cautionary note is warranted with respect to treating the results in Table A. 6 as conclusive evidence.

Table A.6. Impact of IMF Programs, Program Noncompliance, and Government Partisanship on Ratings

VARIABLES	
IMF Signed	-0.017
	(0.012)
Left Party	-0.036***
	(0.011)
IMF Signed*Left Party	0.059***
	(0.018)
Noncompliance	-0.031***
	(0.012)
IMF*Noncompliance	0.023
	(0.018)
Left*Noncompliance	0.081***
	(0.024)
IMF*Left*Noncompliance	-0.094***
	(0.033)
Democracy	0.001
	(0.001)
Δ Budget Balance	-0.000
	(0.001)
Capital Account Openness	0.002
	(0.003)
GDP Growth	0.007***
	(0.001)
Δ Inflation	-0.000*
	(0.000)
Δ Current Account Balance	-0.002**
	(0.001)
Δ Investment (log)	-0.008
	(0.017)
Fixed Exchange Rate	-0.000
	(0.009)
Δ Reserves (log)	-0.010
	(0.008)
Δ Debt Service (log)	0.010
	(0.009)
Rating in the Previous Year (log)	-0.105***
	(0.015)
Constant	0.169***
	(0.055)
Country Dummies	Yes
Year Dummies	Yes
Observations	1,108
R-squared	0.48

(*Notes*: Robust standard errors are in parentheses; *** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$. The dependent variable is log-transformed and first-differenced.)

Appendix 7. Effects of Signing an IMF Program, Controlling for Other Political Factors

Institutional Investor	*Model 1*	*Model 2*	*Model 3*	*Model 4*
IMF Signed	-0.011	-0.012	-0.009	-0.012
	(0.008)	(0.009)	(0.009)	(0.009)
Left Party	-0.022**	-0.023**	-0.022**	-0.022**
	(0.011)	(0.011)	(0.011)	(0.011)
IMF Signed*Left	0.032**	0.035**	0.035**	0.036**
	(0.016)	(0.016)	(0.016)	(0.016)
Political Instability	-0.008***			
	(0.002)			
Years in office		0.001		
		(0.001)		
Noncompliance			-0.013	
			(0.009)	
UN Voting				0.030
				(0.067)
IMF*UN Voting				0.100
				(0.121)
Democracy	0.001	0.001	0.001	0.001
	(0.001)	(0.001)	(0.001)	(0.001)
Δ Budget Balance	-0.000	-0.000	-0.000	-0.000
	(0.001)	(0.001)	(0.001)	(0.001)
Capital Account Openness	0.003	0.002	0.002	0.002
	(0.003)	(0.003)	(0.003)	(0.003)
GDP growth	0.007***	0.007***	0.007***	0.007***
	(0.001)	(0.001)	(0.001)	(0.001)
Δ Inflation	-0.000	-0.000*	-0.000*	-0.000*
	(0.000)	(0.000)	(0.000)	(0.000)
Δ Current Account Balance	-0.002*	-0.002**	-0.002**	-0.002**
	(0.001)	(0.001)	(0.001)	(0.001)
Δ Investment (log)	-0.007	-0.006	-0.006	-0.006
	(0.016)	(0.017)	(0.009)	(0.017)
Fixed Exchange Rate	-0.000	0.001	-0.006	0.001
	(0.009)	(0.009)	(0.017)	(0.009)
Δ Reserves (log)	-0.009	-0.009	-0.010	-0.008
	(0.008)	(0.008)	(0.008)	(0.008)
Δ Debt Service (log)	0.010	0.010	0.010	0.010
	(0.009)	(0.009)	(0.009)	(0.009)
Rating in the Previous Year (log)	-0.109***	-0.105***	-0.102***	-0.104***
	(0.015)	(0.015)	(0.015)	(0.015)
Constant	0.181***	0.147***	0.151***	0.148***
	(0.058)	(0.055)	(0.055)	(0.054)
Country Dummies	Yes	Yes	Yes	Yes
Year Dummies	Yes	Yes	Yes	Yes
R-Squared	0.48	0.47	0.47	0.47
Observations	1,117	1,117	1,108	1,113

(*Notes*: Robust standard errors are in parentheses; *** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$.
The dependent variable is log-transformed and first-differenced.)

References

Dreher, Axel, and Stefan Voigt. (2008) Does Membership in International Organizations Increase Governments' Credibility? Testing the Effects of Delegating Powers. KOF Working Papers No. 193.

Vreeland, James. (2003) *The IMF and Economic Development*. Cambridge: Cambridge University Press.

Wooldridge, Jeffrey. (2002) *Econometric Analysis of Cross Section and Panel Data*. Cambridge: MIT Press.