

## ONLINE APPENDICES

### Stigma or Cushion? IMF Programs and Sovereign Creditworthiness

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## Appendix A: Construction of the Sovereign Ratings Database

The description of how the sovereign rating database was constructed is in most parts identical to the respective part in the online appendix of Fuchs and Gehring (2017), but reprinted here for the reader's convenience. Fuchs and Gehring also provide more details about the ratings and the individual agencies.

The ratings from Fitch have been obtained directly from the company. Data on sovereign ratings assigned by Moody's and S&P were obtained from Bloomberg. The data were downloaded in late September 2012 in the Princeton University Library and updated information was added on June 28, 2013.

Fuchs and Gehring (2017) describe the approach as follows:

- (1) To access the data, they logged on to a Bloomberg terminal and typed "CSDR." The variables selected are *Foreign Currency LT Debt* for Moody's and S&P. They followed Bloomberg and collected Moody's foreign currency issuer rating if Moody's had not assigned a foreign-currency debt rating to a country. They took screenshots for each page displaying sovereign ratings.
- (2) Using these screenshots, two student assistants entered the letter-ratings into a database. The double-coding was used to identify and correct typing errors.
- (3) They then checked the data for potential errors, for example by examining rating changes by more than two steps.
- (4) The three-letter ratings were translated to numerical values according to the 21-point scale presented in Appendix B.

## Appendix B: Background on Ratings and Agencies

*Table A1: Translation of Sovereign Ratings into Numerical Values*

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

Table A2: Overview on major credit rating agencies

Agency	Location of headquarters	Founded in	Sovereign rating since	Registered (certified) in	Number of country offices	Staff size	Ownership (as of December 2012)	Ownership history	Number of rated sovereigns by the end of	
									2000	2012
Fitch	New York City, USA; London, UK	1913	1994	EU Japan USA	35	~2,000	50% Hearst Corporation (family-owned US-based multinational mass media group) and 50% FIMALAC (French holding company, major owner Marc Ladreit de Lacharrière)	Part of Fitch Group (100% owned by FIMALAC) until 2006; 20% sold to the Hearst Corporation in 2006, additional 20% 2009 and 10% 2012	69	101

Agency	Location of headquarters	Founded in	Sovereign rating since	Registered (certified) in	Number of country offices	Staff size	Ownership (as of December 2012)	Ownership history	Number of rated sovereigns by the end of	
									2000	2012
Moody's	New York City, USA	1909	1918	EU Japan USA	24	~6,800	Publicly traded since 2000; institutional ownership: 95.34%; top 5 institutional shareholders: Berkshire Hathaway Inc. (13.4%), Capital World Investors (8.1%), Vanguard Group Inc. (6.2%), Bank of New York Mellon Corp (4%), Massachusetts Financial Services Co. (3.8%); further shareholders: BlackRock, Morgan Stanley, State Street, Northern Trust Corp., T. Rowe Price Associates	Owned by US company Dun & Bradstreet from 1961-2000	82	113

Agency	Location of headquarters	Founded in	Sovereign rating since	Registered (certified) in	Number of country offices	Staff size	Ownership (as of December 2012)	Ownership history	Number of rated sovereigns by the end of	
									2000	2012
S&P	New York City, USA	1860	1922	EU Japan USA	25	~5,000	100% owned by McGraw Hill Companies, Inc., since 1966; major shareholders of the publicly-traded McGraw Hill Companies: Capital World Investors, Vanguard Group, State Street Corp., Oppenheimer Funds Inc., Morgan Stanley, Inc.; further shareholders: BlackRock, Bank of New York Mellon Corp., Northern Trust Corp., T. Rowe Price Ass.	In 1941, merger of Poor's Publishing (founded 1860) and Standard Statistics (founded in 1906)	87	125

Source: Fuchs and Gehring (2017)

Table A3: Comparison of credit rating process (sovereign ratings)

Agency	Fitch	Moody's	S&P
Home country (location)	USA	USA	USA
Home country (ownership)	France	USA	USA
Does the agency provide - solicited sovereign ratings?	Yes	Yes	Yes
- unsolicited sovereign rating?	Yes	Yes	Yes
How long does a typical rating process take?	30-60 days	60-90 days	30-45 days
How many analysts are involved in the rating process (per sovereign rating)?	Two analysts	One analyst	Two analysts
Does the agency collect and analyze publically available data?	Yes	Yes	Yes
Does the agency make an official cooperation offer to the sovereign?	Yes	Yes	Yes
Does an interview with the sovereign take place (in case of solicited ratings)?	Yes	Yes	Yes
Who is part of the rating committee responsible for the final rating decision?	At least five analysts and senior director	Unspecified	Five to seven analysts and chairperson
Are the issuers notified prior to the publication of the rating?	Yes	Yes	Yes
Can sovereigns appeal against a rating publication?	Yes	Yes	Yes
Surveillance: Does the agency follow a regular updating interval?	At least annually	Quarterly	Unspecified
Who initiates an update?	All analysts	Lead analyst	All analysts

Source: Fuchs and Gehring (2017)

## Appendix C: Institutional Investor Data

We use data from Institutional Investor as an alternative assessment of a country's creditworthiness. Regarding the methodology, the company states that "Institutional Investor's Country Credit ratings are based on information provided by senior economists and sovereign-risk analysts at leading global banks and money management and securities firms. The respondents have graded each country on a scale of zero to 100, with 100 representing the least likelihood of default. We weighted participants' responses according to their institutions' global exposure. Names of respondents are kept strictly confidential."

The access to the individual reports is easy for subscribers, or to those with access to a data provider like "EBSCOhost." To access the data, a reader interested in replication or extending this study can go to <http://www.institutionalinvestor.com>, select "Research + Rankings" and then "Country Credit". For most years there exist two reports, one for March and one for September.

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# Institutional Investor

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Premium Research + Rankings data is accessible by subscribers only. [Click here](#)

### ALL RANKINGS: GLOBAL RANKINGS

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Select one of the following rankings to view its current leaders:

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- The World's Best Hotels
- The World's Largest Custodians
- The World's Biggest Sovereign Wealth Funds

Jump to a ranking:



For older ratings, the reports look as follows:

**The beat goes on**  
 Shapiro, Harvey D  
*Institutional Investor*; Mar 1996; 30, 3; ABI/INFORM Collection  
 pg. 135

**COUNTRY CREDIT**

# The beat goes on

**A**mid broadly positive reviews from international bankers everywhere, a new leader has emerged in *Institutional Investor's* exclusive semiannual rating of sovereign creditworthiness. One banker surveyed suggests that "nostalgia for the deutsche mark, a currency that may soon disappear," helped push Germany's rating up slightly just as Switzerland slipped a bit, easing the Federal Republic into a tie for the No. 1 position. Germany goes to the head of the

**Germany moves up as global optimism continues to nudge sovereign creditworthiness higher.**

**By Harvey D. Shapiro**

every financier's favorite part of the world, actually had a small dip in its rating. In fact, there is a good deal of divergence in the views of respondents regarding individual countries, but the consensus is, decidedly, "Onward and upward." The reason is clear, says one British banker: "The economic outlook for the world is reasonably favorable, but the biggest changes are political. A lot of potential theaters of war are being changed by peace processes. This includes southern Africa and the Middle East."

**INSTITUTIONAL INVESTOR'S 1996 COUNTRY CREDIT RATINGS**

Rank Sept. 1995	Rank March 1996	Country	Institutional Investor credit rating	Six-month change	One-year change	Rank Sept. 1995	Rank March 1996	Country	Institutional Investor credit rating	Six-month change	One-year change
3	1*	Germany	91.5	0.6	0.9	72	70	Vietnam	30.3	0.8	2.7
1		Switzerland	91.5	-0.7	-1.0	65	71	Venezuela	30.1	-1.3	-3.0
2	3	Japan	91.0	-0.6	-0.9	73	72	Swaziland	30.0	0.8	1.5
4	4	United States	90.9	0.2	0.5	70	73	Libya	29.9	-0.1	-0.6
5	5	Netherlands	89.2	-0.1	0.2	68	74	Pakistan	29.5	-1.2	-0.6
6	6	France	88.4	-0.7	-0.6	74	75	Ghana	29.2	0.1	0.0
7	7	United Kingdom	88.2	0.4	0.5	79	76	Estonia	28.9	2.6	3.5
9	8	Luxembourg	85.9	0.4	0.5	76	77	Panama	27.9	1.5	2.2
8	9	Austria	85.7	-0.5	-0.5	78	78	Jamaica	27.7	1.4	2.5
10	10	Singapore	82.8	-1.2	-0.2	80	79	Peru	27.2	1.4	3.5
11	11	Norway	82.0	0.4	1.7	77	80	Kenya	26.9	0.5	2.0
13	12	Denmark	80.3	0.4	1.0	81	81**	Bangladesh	26.5	0.9	1.7
12	13	Canada	79.9	-0.4	-0.3	83	82**	Lebanon	26.5	1.2	1.6
15	14	Belgium	79.5	-0.3	0.9	88	83	Seychelles	25.8	1.5	2.1
14	15	Taiwan	78.9	-1.0	-0.8	84	84	Ecuador	25.7	0.6	0.7
18	16	Ireland	74.4	1.0	2.1	82	85	Gabon	25.1	-0.2	-0.7
16	17	Sweden	74.3	0.2	-0.1	89	86	Latvia	24.7	1.3	2.1
17	18	Spain	73.2	-0.5	-0.5	87	87	Syria	24.6	0.0	-0.3
21	19	Finland	72.2	0.8	2.2	84	88	Nepal	23.9	-1.2	-0.5
19	20**	Italy	72.0	-0.3	-0.4	90	89	Lithuania	23.8	0.9	2.1
20	21**	South Korea	72.0	-0.2	0.6	93	90	Bolivia	23.7	1.3	1.2
22	22	Australia	71.0	-0.2	0.1	86	91	Iran	23.6	-1.2	-1.9
23	23	New Zealand	70.3	0.9	2.1	94	92	Bulgaria	23.1	0.9	1.2
25	24	Portugal	68.8	0.4	1.5	92	93	Dominican Republic	23.0	0.4	-0.1
24	25	Malaysia	68.4	-0.7	-0.2		94	Guatemala	22.4	0.3	0.5
26	26	Hong Kong	65.4	-1.6	-1.6	95	94	Algeria	21.5	-1.3	-2.0
27	27	Thailand	63.4	-0.4	-0.1	91	95**	Senegal	21.5	-0.1	-0.1
28	28	Malta	62.3	0.5	1.3	96	96**	Croatia	21.4	2.9	4.3
29	29	United Arab Emirates	60.8	0.0	0.3	102	97	El Salvador	20.6	0.5	1.9
30	30	Czech Republic	60.1	1.7	4.3	98	98	Russia	19.9	0.5	0.4
32	31	Chile	59.2	1.8	3.6	100	100	Malawi	19.8	0.7	1.0
31	32	Iceland	58.3	0.7	1.4	99	101	Kazakhstan	19.2	-0.1	0.5
33	33	China	56.4	-0.6	-1.2	105	102	Myanmar	18.9	1.6	2.4
35	34	Cyprus	56.0	1.7	3.4	101	103	Cameroon	18.5	-0.2	-0.7
34	35	Saudi Arabia	55.1	-0.2	-0.7	108	104	Tanzania	17.7	1.0	2.2
37	36	Kuwait	54.1	0.7	1.4	109	105	Honduras	17.3	1.4	1.8
36	37	Qatar	53.8	0.2	0.1	104	106	Cuba	17.1	0.2	0.6

For the newer years, the accessible files look like the following example.

```
(**) Sept. 2004 to March 2005.
INSTITUTIONAL INVESTOR'S MARCH 2005 COUNTRY CREDIT RATINGS
Legend for Chart:
A - Rank Sept. 2004
B - Rank March 2005
C - Country
D - Institutional Investor credit rating
E - Six-month change
F - One-year change
```

A	B	C	D	E	F
1	1	Switzerland	94.5	-0.7	-0.7
4	2	Norway	93.7	0.0	-0.3
2	3	Luxembourg	92.8	-1.1	-2.0
11	4(*)	Finland	92.7	0.4	0.4
5	5(*)	U.K.	92.7	-0.9	-1.3
3	6	U.S.	92.4	-1.3	-1.6
8	7	France	92.2	-0.5	-1.1
6	8	Denmark	92.1	-0.9	-0.3
7	9	Netherlands	92.0	-0.9	-1.9

In each year, we use the country assessments as of September. Only in three years we had to revert to using the assessment as of March as the September value was not available. We then import the values into STATA, merge them with country codes and add them to the rest of our data. The ratings range is between 0 and 100, with 100 expressing the highest confidence on behalf of the experts. We divide these values by 5 in order to make their interpretation comparable to the ratings, which range between 1 and 21.

## Appendix D: Descriptive Statistics

Table A4 – Descriptive Statistics

Variable	Mean	SD	Min	Max	Source
Rating S&P	13.17	4.98	1.00	21.00	Fuchs and Gehring (2017)
Rating Moody's	13.71	5.03	1.00	21.00	Fuchs and Gehring (2017)
Rating Fitch	13.70	5.02	1.00	21.00	Fuchs and Gehring (2017)
Institutional Investor	11.53	4.29	2.10	19.28	Institutional Investor
IMF program	0.20	0.40	0.00	1.00	Dreher (2006, updated)
IMF agreement	0.08	0.27	0.00	1.00	Dreher (2006, updated)
IMF probability	0.23	0.23	0.00	0.89	Own calculations
GDP/capita (ln)	9.04	1.29	5.76	11.61	World Development Indicators
GDP growth	31.24	109.78	0.00	3853.42	World Development Indicators
Inflation	0.06	0.07	-0.05	0.95	World Development Indicators
Natural resource rents (% GDP)	7.56	12.35	0.00	64.80	World Development Indicators
Population (ln)	16.62	1.62	13.00	21.02	World Development Indicators
Debt (% GDP)	48.83	30.77	0.00	238.03	World Development Indicators
Change in Government Debt (% GDP)	3.44	9.80	-85.17	102.29	World Development Indicators
Default history (indicator)	0.35	0.48	0.00	1.00	IMF Historical Public Debt Database 2013 (Abbas et al. 2010)
Default in last 5 years (indicator)	0.07	0.25	0.00	1.00	IMF Historical Public Debt Database 2013 (Abbas et al. 2010)
Trade openness	88.08	58.72	14.93	562.06	World Development Indicators
Current Account Balance (% GDP)	-0.36	8.40	-44.21	44.62	World Development Indicators
External Debt (% GDP)	23.53	28.91	0.00	189.48	World Development Indicators
Euro area (indicator)	0.13	0.33	0.00	1.00	Own coding
Law and Order	4.02	1.28	1.00	6.00	International Country Risk Guide
Democracy (Polity IV)	6.02	5.61	-10.00	10.00	Polity IV
Election	0.21	0.41	0.00	1.00	Database of Political Institutions
Honeymoon	5.98	7.20	1.00	46.00	Database of Political Institutions

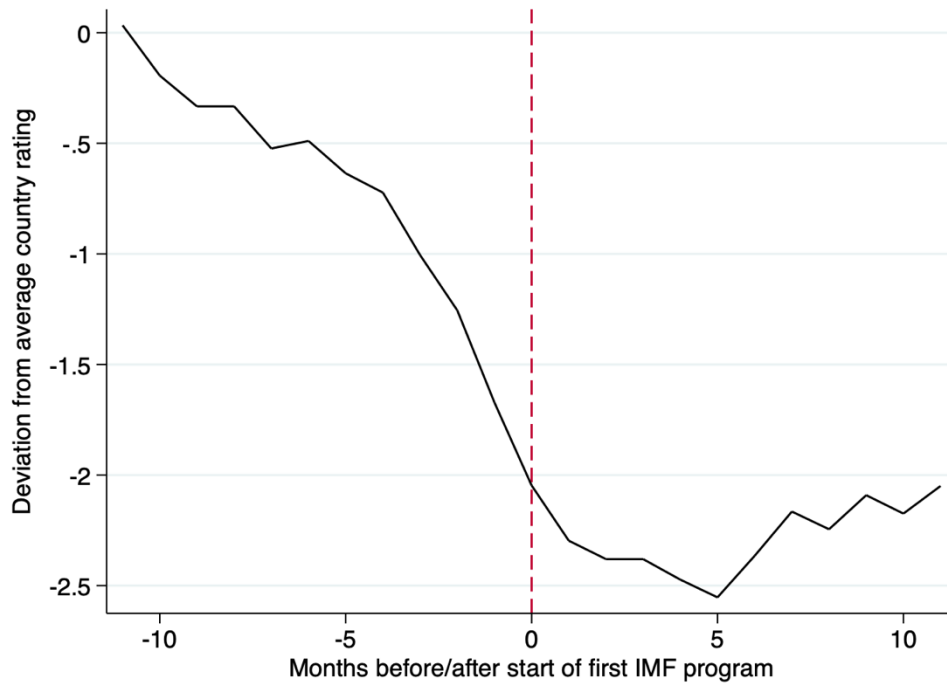
Left government	0.31	0.46	0.00	1.00	Database of Political Institutions
Absence of Internal Conflict (ICRG)	9.63	1.59	3.42	12.00	ICRG
Absence of External Conflict (ICRG)	10.33	1.19	5.17	12.00	ICRG
Absence of military in politics	4.38	1.44	0.00	6.00	International Country Risk Guide
Investment (% GDP)	23.97	6.65	8.27	58.15	World Development Indicators
Systemic Banking Crisis	0.11	0.31	0.00	1.00	Laeven and Valencia (2012, updated)
Foreign bank exposure	225.04	648.28	0.03	6491.19	Bank for International Settlement
UNGA voting	0.14	0.89	-1.63	2.89	Bailey et al. (2017)
Global GDP growth	0.03	0.02	-0.02	0.04	World Development Indicators
Global total of Systemic Banking Crises	11.25	9.47	0.00	30.00	Laeven and Valencia (2012, updated)
FDI stock (% GDP)	27.90	34.92	0.00	315.53	KOF (2018)
Bond yield spread (relative to US)	260.99	531.85	-3.71	6181.50	Haver Analytics, Bloomberg

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**Notes:** Based on the sample used for specification 6 in Table 1.

## Appendix E: Rating Dynamics Around Starts of IMF Programs

Figure A1 – Rating Dynamics Around Starts of IMF Programs (short term)



**Notes:** The figure plots the unweighted mean across countries of the month-specific deviation from each country's average S&P credit rating in the 1990-2013 period on the y-axis. The number of months around the start of the country's first IMF program of this period is on the x-axis. Sample restricted to countries with at least one IMF program.

## **Appendix F: Control Variables**

As discussed in the main text, we add an extensive set of control variables to the regressions. For this control vector, we follow Fuchs and Gehring (2017) in building on and combining the sets of explanatory variables employed in Cantor and Packer (1996), Archer et al. (2007) and Hill et al. (2010) to control for the country-specific economic and political factors that should capture countries' ability and willingness to repay their debts.

We therefore add the following variables: the natural logarithm of GDP per capita, the annual GDP growth rate and its square, the inflation rate, the rents from natural resources (over GDP), the log of population, the debt to GDP ratio, the annual change in government debt (over GDP), trade (over GDP), the current account balance (over GDP), external debt (over GDP), the two variables indicating whether the country defaulted ever or within the previous five years, the quality of the rule of law, the degree of democracy (Polity IV), whether an election took place, the number of the government's years in office, the ruling party's political ideology, whether the country was affected by an internal or an external conflict, whether the military played an active role in politics, and an indicator for membership in the Eurozone (see also Fuchs and Gehring 2017).

We also include variables that the literature identified as correlates of IMF programs. Some of them are part of the above list. The variables we include in addition are the occurrence of a systemic banking crisis, the exposure of foreign banks to the country, investment (over GDP), and the similarity of voting with the United States in the United Nations General Assembly (Copelovitch 2010; Moser and Sturm 2011; Sturm, Berger, and de Haan 2005). These variables are taken from the World Bank's World Development Indicators (WDI), the IMF (Laeven and Valencia 2012), the Database of Political Institutions (Beck et al. 2001), the Polity IV Project (Marshall, Jaggers, and Gurr 2011), and the International Country Risk Guide (ICRG), the IMF Historical Public Debt Database 2013 (Abbas et al. 2010), the Bank for International Settlements (BIS), and Bailey et al. (2017).

Descriptive statistics of these control variables can be found in Appendix D.

Table A5: Coefficients on Control Variables (Full results of Table 1, Column 4)

IMF program	-0.990 [0.244]
GDP/capita (ln)	1.321 [0.914]
GDP growth	0.051 [0.018]
Inflation	-0.963 [1.438]
Natural resource rents (% GDP)	-0.013 [0.017]
Population (ln)	-4.715 [1.905]
Debt (% GDP)	-0.010 [0.005]
Change in Government Debt (% GDP)	0.001 [0.003]
Default history (indicator)	1.662 [1.939]
Default in last 5 years (indicator)	0.267 [0.276]
Trade openness	0.005 [0.002]
Current Account Balance (% GDP)	0.072 [0.017]
External Debt (% GDP)	-0.007 [0.008]
Euro area (indicator)	-1.836 [0.563]
Law and Order	-0.213 [0.198]
Democracy (Polity IV)	-0.027 [0.054]
Election	-0.034 [0.082]
Honeymoon	-0.012 [0.012]
Left government	-0.149 [0.210]
Absence of Internal Conflict (ICRG)	0.065 [0.101]
Absence of External Conflict (ICRG)	-0.044 [0.084]
Absence of military in politics	-0.244 [0.153]
Investment (% GDP)	0.042 [0.018]
Systemic Banking Crisis	-0.424 [0.263]
Foreign bank exposure	-0.000 [0.000]
UNGA voting	0.431 [0.476]
Country FE	Yes
Year FE	Yes
Observations	1343
Adjusted R-squared	0.311

**Notes:** The dependent variable is the country's long-term foreign-currency rating by Standard and Poor's. Standard errors clustered at the country level are displayed in brackets.

## Appendix G: Robustness

This appendix describes the robustness results summarized in the main text in section 4.5 in more detail.

- First, it describes the robustness tests whose results are plotted in Figure 10 in the main text.
- Second, it presents the full regression output of these robustness test.
- Third, it presents the figures and tables of additional robustness tests that were only described in the main text due to space constraints.

The first three specifications of Figure 10 re-define the **treatment variable**. Specification 1 defines countries as receiving IMF programs as soon as they spend at least one month under a program in year  $t$  (rather than five months as in the baseline, the standard in the literature on IMF program effects (Dreher 2006)). Results hold. Specification 2 excludes all IMF programs that are organized under the Poverty Reduction and Growth Facility. These programs are longer-term forms of financial assistance for poorer countries and could thus be less stigmatizing than other programs. Results hold. To further address the potential concern that atypical cases could drive the results, specification 3 excludes all countries that were members of the **Eurozone** in year  $t$ . Arguably, IMF programs that were implemented in Eurozone countries in the aftermath of the global financial crisis were atypical. First, the IMF designed them jointly with European Union (EU) institutions. Second, default risks in Eurozone countries are potentially assessed differently than in other countries because signals from EU institutions and other EU member states will be considered. As specification 3 shows, this restriction to our sample do not significantly affect our results. The coefficient on *IMFprogram* is again positive and statistically insignificant.

Then, we want to address potential concerns regarding the **two constituent terms** forming our interaction instrument. With regard to the first component of the instrumental variable, *IMFprobability*, we take as an alternative a time-invariant, country-specific measure instead of the cumulative, time-variant probability. This makes *IMFprobability* multicollinear with the country fixed effects. Taking all observations in the sample period into account considers also observations from periods  $t+1$ ,  $t+2, \dots$ , to compute the probability in  $t$ , and thus uses information from the future to explain the present (see Nunn and Qian 2014). Although we regard this as conceptually inferior, specification 4 shows that the estimates are not strongly



affected by this modification. The interaction term in the first stage is of almost the exact same size, showing that the relationship we exploit for identification does not depend on how a country's probability of participating in IMF programs is defined. The significance of the IV, the K-P F-statistic, and the second stage point estimate are also very similar, as compared to the baseline.

Regarding the second component of the instrument, some readers might, as discussed above, question the independence of the IMF's liquidity ratio from developments in individual country-years. Even though individual countries are, in general, unable to significantly influence the IMF's liquidity, a few countries in the sample received and repaid extraordinarily large tranches of extraordinarily large IMF loans in some years. While the transaction schedule of Fund resources is usually developed years in advance, we still want to exclude the possibility that such events could lead to a correlation between the liquidity and country-year specific economic fundamentals unrelated to the presence of an IMF program. While this would only threaten the exclusion restriction if this relationship depended on the country's level of *IMFprobability* we still want to be cautious and exclude the country-year observations that could significantly influence the IMF's liquidity. Specification 5 excludes the top five percent of country-year observations with the largest purchases and repurchases of IMF loans. Neither of these regressions yields substantially different results, indicating that such individual transactions do not threaten the exclusion restriction.

Table A6: Various Robustness Tests: Full Regression Output of Figure 10 (S&P)

	(1) IMF programs one month active	(2) IMF programs other than PRGF	(3) excluding Eurozone	(4) constant IMF probability	(5) excluding large repurchases
IMF program	2.536 [1.188] {0.033}	3.511 [1.870] {0.060}	2.334 [1.037] {0.024}	1.813 [0.849] {0.033}	1.916 [1.028] {0.062}
Observations	1343	1343	1170	1343	1304
KP underid. (p)	0.000	0.001	0.000	0.000	0.000
KP weak id. (F)	27.027	13.620	23.069	30.438	26.213
First Stage:					
IMFprobability	3.311 [0.492] {0.000}	2.807 [0.572] {0.000}	3.288 [0.574] {0.000}		3.402 [0.592] {0.000}
IMFprobability X IMFliquidity	-0.351 [0.068] {0.000}	-0.254 [0.069] {0.000}	-0.401 [0.083] {0.000}		-0.423 [0.083] {0.000}
IMFprobability (constant) X IMFliquidity				-0.451 [0.082] {0.000}	

**Notes:** The dependent variable is a country rating from S&P measured on a 21-point scale. Standard errors clustered at the country level are displayed in brackets, p-values in curly brackets. All regressions include country and year FE, as well as the controls in t-4, corresponding to our main specification in Table 1, column 6.

Table A7 – Excluding Outliers

	(1)	(2)	(3)	(4)	(5)
IMF program	2.334	2.761	2.609	2.627	2.327
	[1.110]	[1.119]	[1.161]	[1.096]	[0.843]
	{0.036}	{0.014}	{0.025}	{0.017}	{0.006}
N	1343	1315	1207	1315	1207
KP underid. (p)	0.000	0.000	0.000	0.000	0.000
KP weak id. (F)	22.136	29.302	46.214	19.826	21.785
Outliers excluded for values of DFBETA in the top and bottom:		1 %	5 %	1 %	5 %
Outliers in		2 <sup>nd</sup> stage	2 <sup>nd</sup> stage	1 <sup>st</sup> stage	1 <sup>st</sup> stage

**Notes:** Column 1 reports the same regression as column 6 of Table 1. The remaining columns exclude outlying observations, as specified in the two bottom rows and described in the main text.

Table A8: Alternative Coding of Credit Ratings

	(1)	(2)	(3)	(4)	(5)
IMFprogram	2.334 [1.110] {0.036}	1.198 [0.584] {0.040}	0.653 [0.332] {0.049}	0.360 [0.181] {0.047}	0.169 [0.092] {0.067}
Observations	1343	1343	1343	1343	1343
Year FE	Yes	Yes	Yes	Yes	Yes
Controls(t-4)	Yes	Yes	Yes	Yes	Yes
KP underid. p-value	0.000	0.000	0.000	0.000	0.000
KP weak id. F-stat	22.136	22.136	22.136	22.136	22.136
Coding of Credit Ratings	21 categories (baseline)	10 categories	7 categories	Binary; threshold BBB and above	Binary: threshold A and above

**Notes:** The specification is the same as in our main specification in Table 1, column 6. It is standard in the literature on credit ratings to translate those ratings to a numerical scale, usually 21 notches, as explained in Table A1. This table investigates whether the number of categories affects our results. Column one shows our baseline estimate. Column two and three use a smaller number of categories. Column four and five use a binary dependent variable, taking on the value 1 if a rating is above the specified threshold. Due to the different scaling, the point estimates differ in every column. Nonetheless, the results are all positive and maintain a similar level of statistical significance throughout. This suggests that this choice is not decisive, and the 21 categories approach that is most commonly used yields reliable estimates.

Table A9: Placebo IVs

	(1)	(2)	(3)	(4)
<b>First Stage Results:</b>				
KP underid. p-value	0.000	0.222	0.424	0.365
<b>KP weak id. F-stat</b>	<b>22.459</b>	<b>1.529</b>	<b>0.571</b>	<b>0.759</b>
<i>First-stage coefficients of excluded IV:</i>				
IMF liquidity x IMF probability	-0.370 [0.078] {0.000}			
Global growth x IMF probability		2.945 [2.382] {0.217}		
Global crises x IMF probability			0.005 [0.006] {0.450}	
FDI flows x IMF probability				0.010 [0.012] {0.384}
Observations	1343	1343	1343	1343

**Notes:** The dependent variable is a country rating from S&P measured on a 21-point scale. Standard errors clustered at the country level are displayed in brackets, p-values in curly brackets. All regressions include country and year FE, as well as the controls in t-4, corresponding to our main specification in Table 1, column 6.

Specification 1 is the baseline specification without controlling for the three global-cycles-times-liquidity interactions. Specifications 2-4 use these global-cycles-times-liquidity interactions as placebo IVs. Analogous to the baseline specification, these specifications control for IMF liquidity x IMF probability.

Interpretation: As can be seen, the three placebo IVs produce very weak first stages with very low K-P F-statistics. This suggests that the variation in IMF liquidity, rather than in global cycles drives the first-stage effect.

Table A10: Heterogeneity analysis

	(1)	(2)	(3)	(4)
IMFprogram	2.912 [1.994] {0.144}	1.313 [1.689] {0.437}	4.368 [1.861] {0.019}	1.828 [1.652] {0.269}
Observations	496	846	629	714
KP underid. (p)	0.037	0.006	0.009	0.004
KP weak id. (F)	5.251	8.191	8.979	20.529
Sample	bond price not available	bond price available	GDP pc < sample median	GDP pc > sample median

**Notes:** The dependent variable is the country's long-term foreign-currency rating on a 21-point scale by Standard and Poor's at the end of the year. Standard errors clustered at the country level are displayed in brackets, p-values in curly brackets. Details on the bond spreads data and their availability can be found in Appendix J. GDP per capita below or above median is computed based on the same variable we also use as a control.

Figure A2: Trends in Global GDP Growth and IMF Liquidity

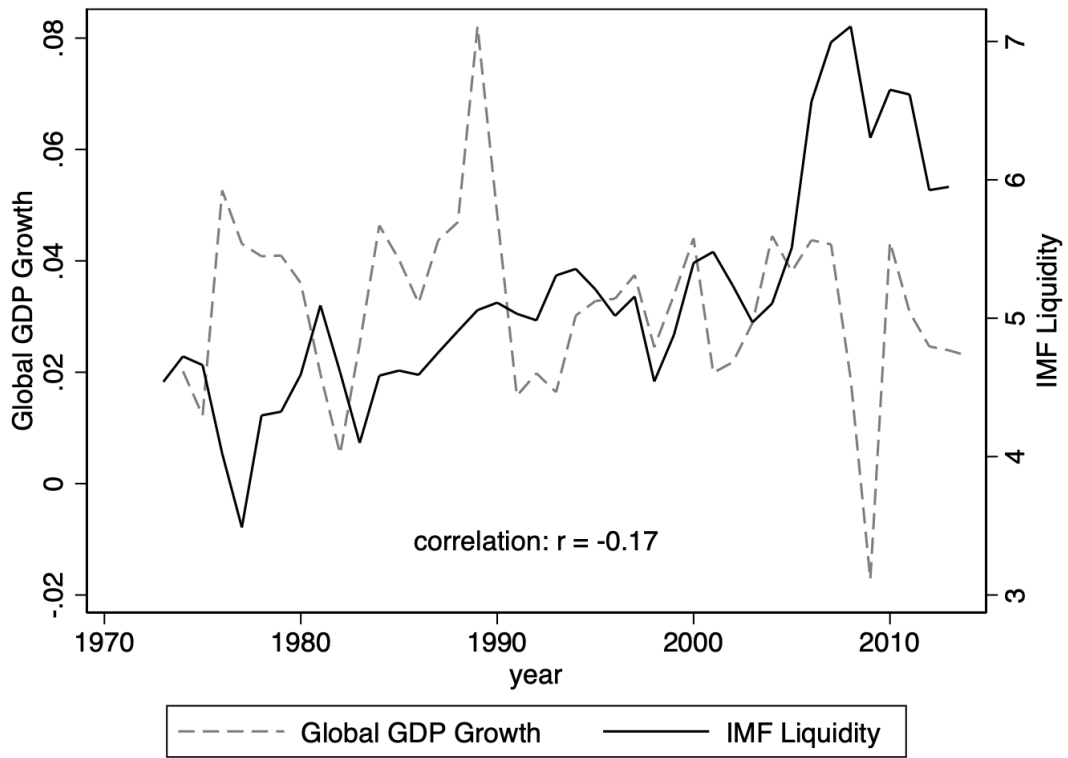


Figure A3: Trends in Global GDO Growth and IMF Liquidity (Scatter)

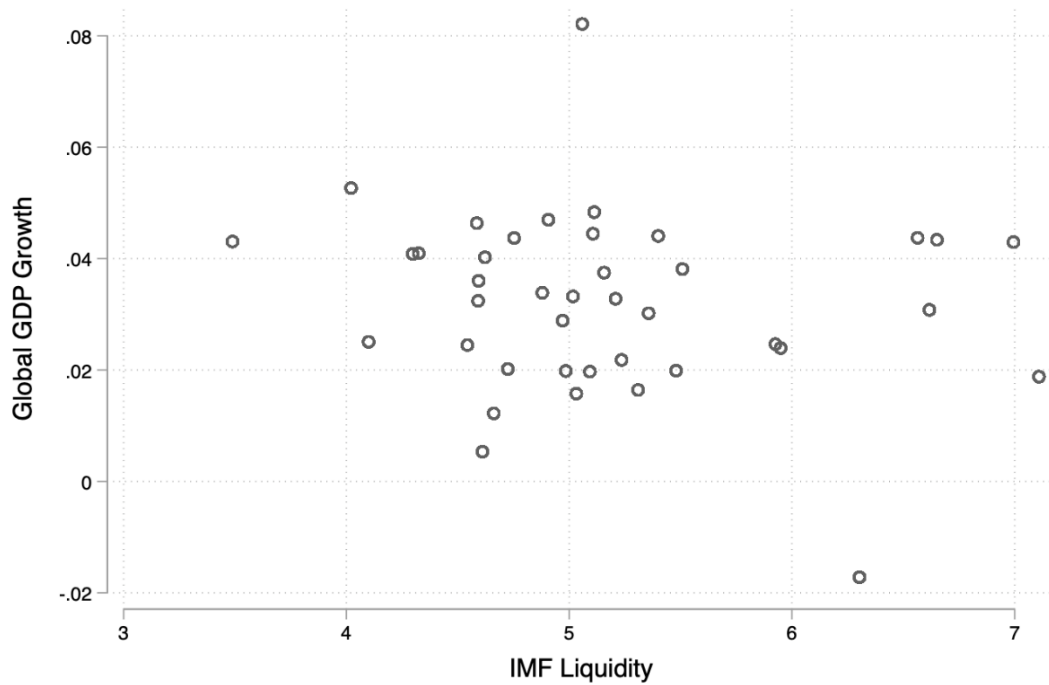


Figure A4: Systemic Banking Crises and IMF Liquidity, trends

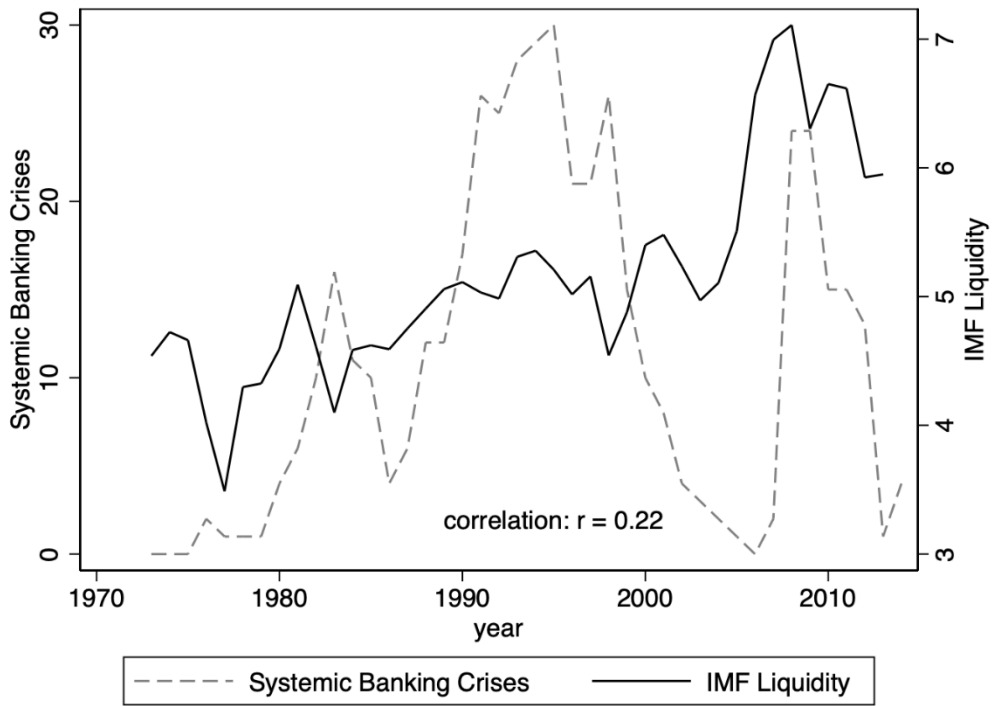


Figure A5: Systemic Banking Crises and IMF Liquidity, scatter

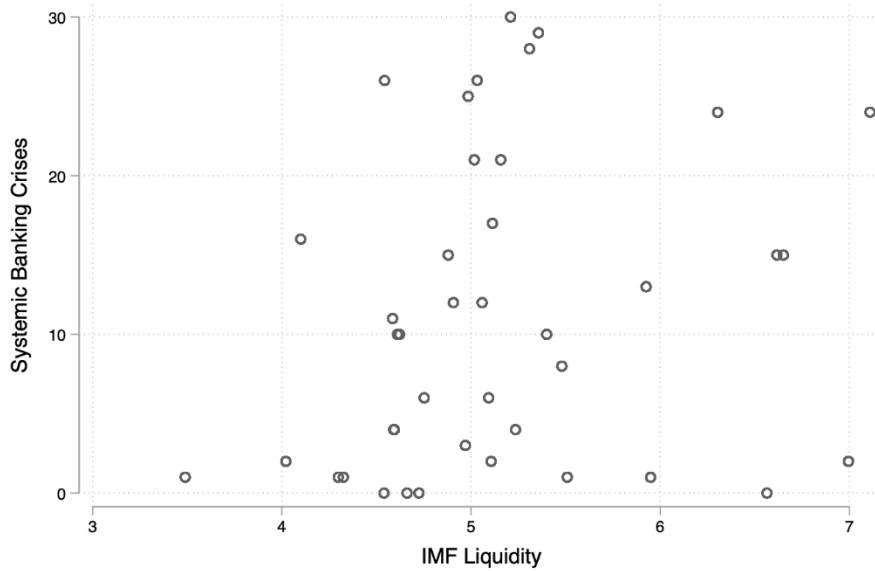




Figure A6: FDI Flows and IMF Liquidity, trends

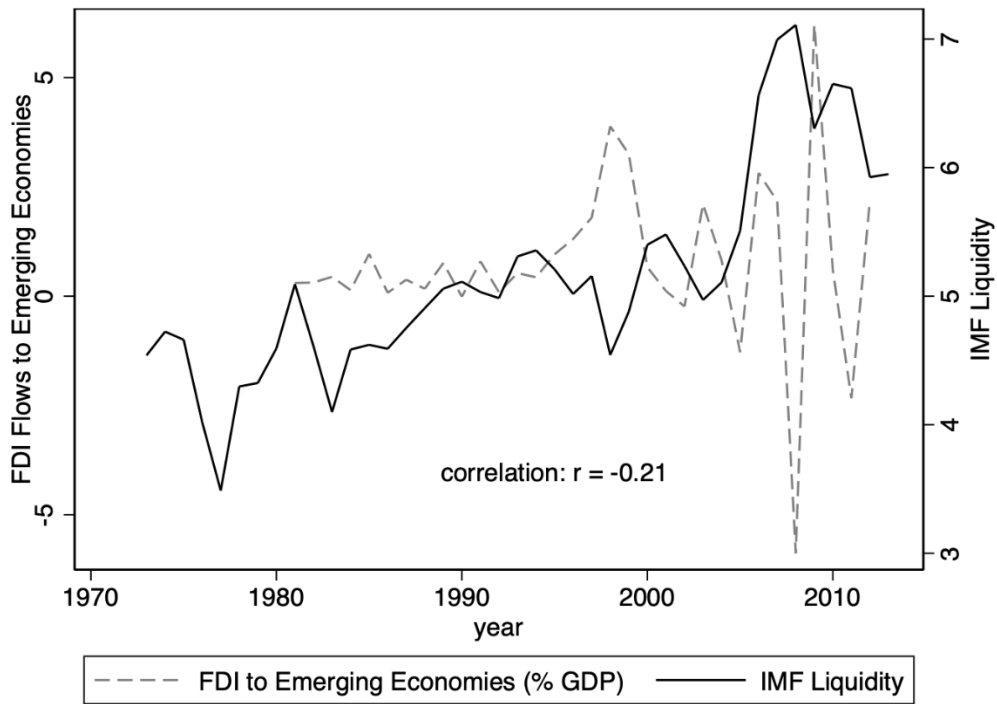


Figure A7: FDI Flows and IMF Liquidity, scatter

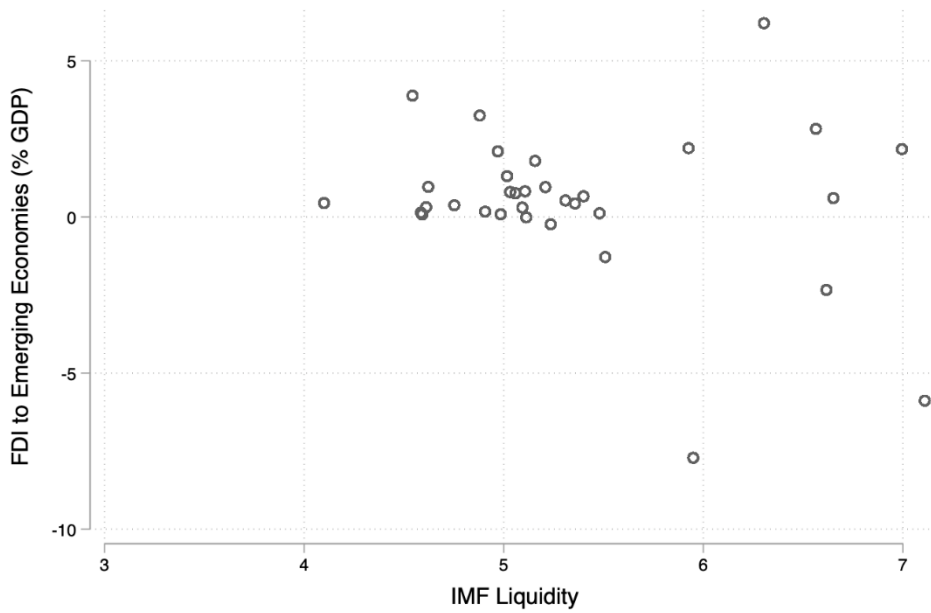


Figure A8: Randomizing Liquidity

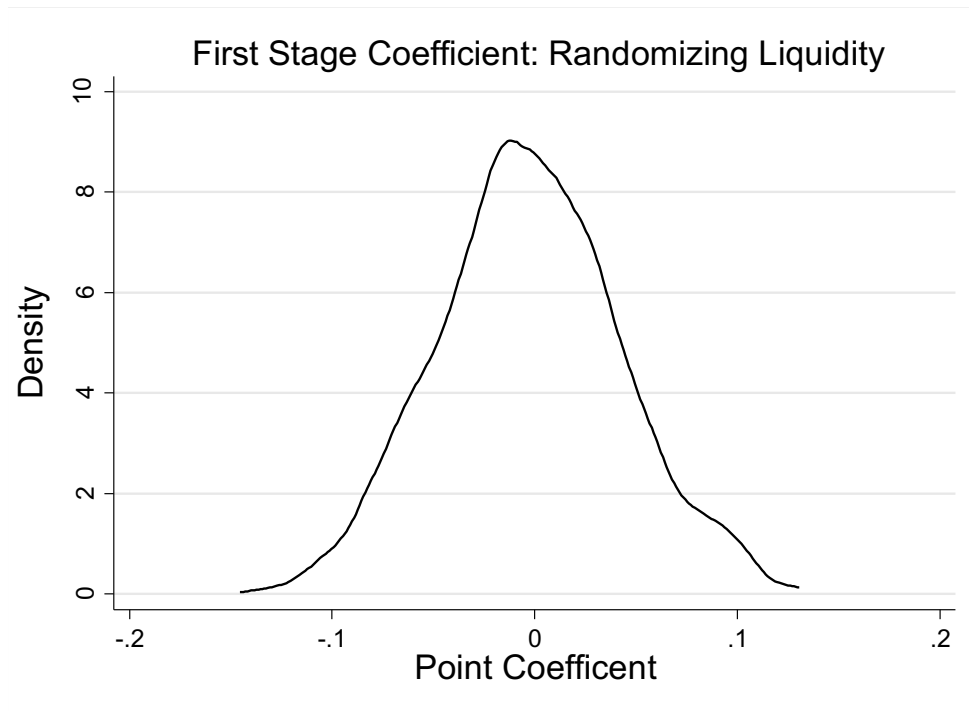
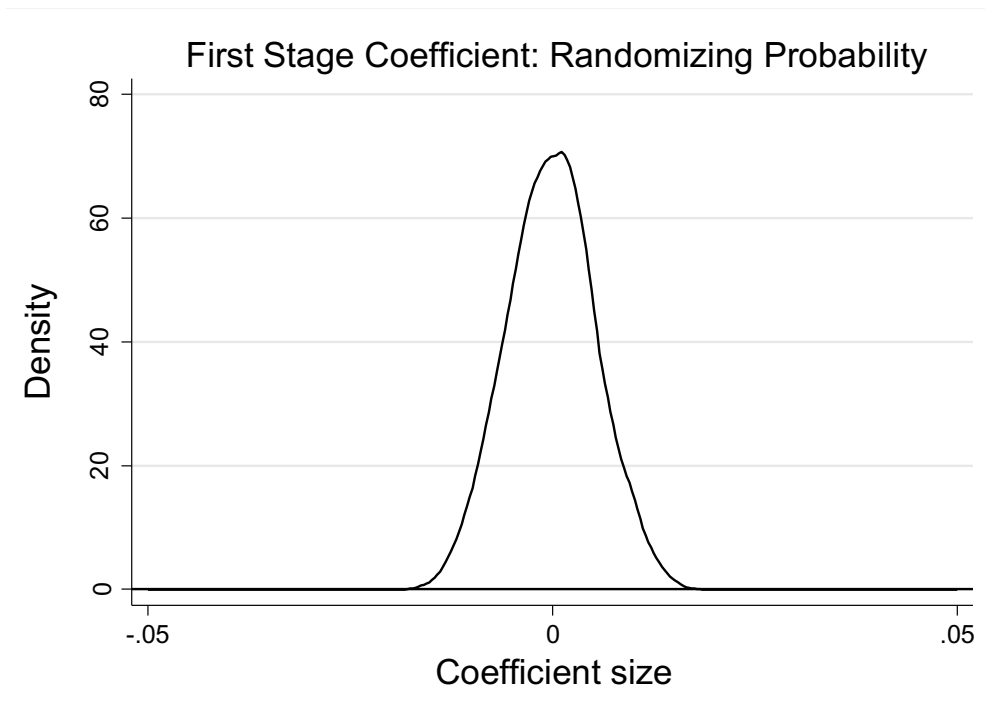


Figure A9: Randomizing Probability

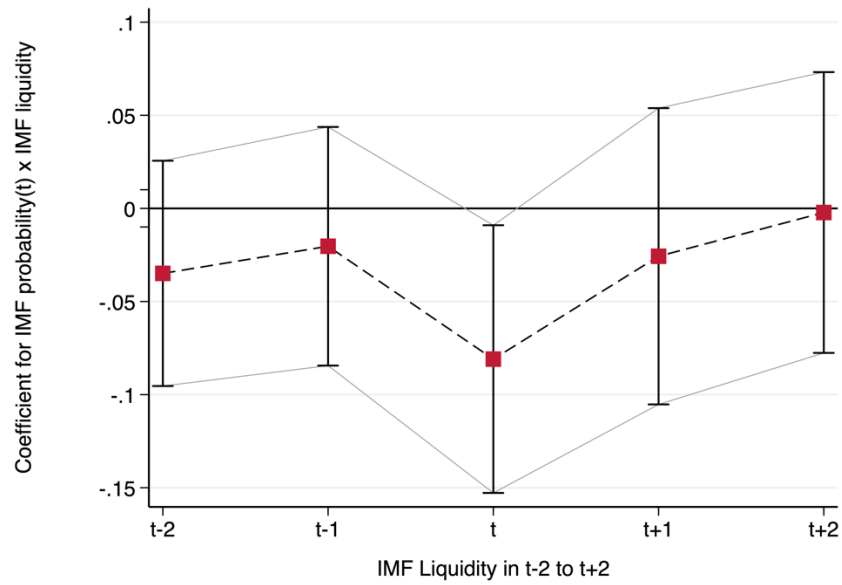


**Notes:** These graphs plot the distribution of 1000 coefficients that result from 1000 first-stage placebo regressions. In these regressions we randomize the two constituent terms of the IV by

- a) attributing values of *IMFliquidity* to random years and
- b) values of *IMFprobability* to random countries.

As can be seen, these coefficients are approximately normally distributed around zero and are far from the value that the actual first-stage regression yields.

Figure A10 – Effect of Probability ( $t$ ) with Leads and Lags of IMF Liquidity on IMF program



**Notes:** The dependent variable is whether country  $i$  had an IMF program in  $t$ . The figure plots first-stage coefficients (along with 95% confidence intervals) of the interaction of  $IMFprobability$  in  $t$  with  $IMFliquidity$  in  $t-2$ ,  $t-1$ ,  $t$ ,  $t+1$ ,  $t+2$ . We would not expect a significant effect if the first stage is driven by the long-term trend in  $IMFliquidity$  instead of by year-on-year variation.

## Appendix H: Monthly Analysis: Regression Results

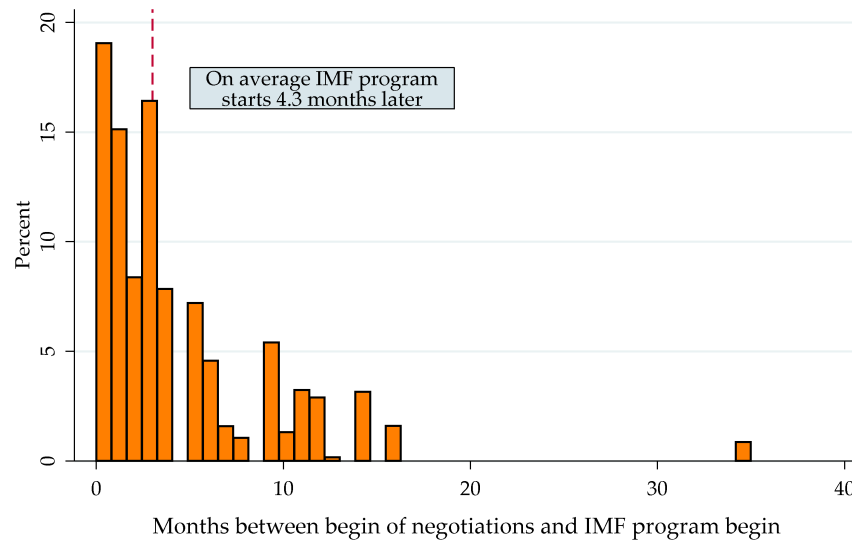
Table A11 – Regression Results for Figure 6

	(1)
IMF start (t+11)	0.019
IMF start (t+10)	-0.014
IMF start (t+9)	0.010
IMF start (t+8)	-0.006
IMF start (t+7)	-0.047
IMF start (t+6)	-0.079
IMF start (t+5)	-0.078
IMF start (t+4)	-0.001
IMF start (t+3)	-0.166*
IMF start (t+2)	-0.216**
IMF start (t+1)	-0.369***
IMF start	-0.447***
IMF start (t-1)	-0.395***
IMF start (t-2)	-0.268***
IMF start (t-3)	-0.311***
IMF start (t-4)	-0.322***
IMF start (t-5)	-0.255***
IMF start (t-6)	-0.264***
IMF start (t-7)	-0.163**
IMF start (t-8)	-0.099
IMF start (t-9)	0.008
IMF start (t-10)	-0.014
IMF start (t-11)	-0.004
Constant	
Country FE	Yes
Year FE	Yes
Country x Year FE	Yes
Month FE	Yes
Observations	25574
Adjusted R-squared	0.995

**Notes:** OLS-FE regressions. The dependent variable is the S&P rating at the end of month  $t$ ; standard errors not shown. Figure 7 is based on the regression in column 4. Significance levels \*  $p < .10$ , \*\*  $p < .05$ , \*\*\*  $p < 0.01$ .

## Appendix I: Negotiations

Figure A11 – Duration of countries' negotiations with the IMF



### *Coding of Negotiations*

We searched for and coded negotiation year and month in the following way.

1. Export the date of all IMF agreements that we use in our monthly regressions.
2. Two student research assistants independently of each other begin searching for the corresponding negotiation date. They use the following approach.
  - a. Begin research using the following three sources: Lexis Nexis, the International Monetary Fund (IMF) websites, and if that does not yield any information use Google advanced and google translate to search for information in a country's official language. Lexis Nexis is used as the main source since it contains comprehensive news worldwide as the world's largest electronic database for legal and public-records related information.
  - b. Define negotiation date the following way: Take the earliest date a possible negotiation of a specific program of a country with the IMF is mentioned. In case Lexis Nexis and the IMF website do not yield useful information, use google advanced. If additional research does not yield a date after 45 minutes of research, stop and code as missing.

Detailed instruction what counts as information about negotiations.

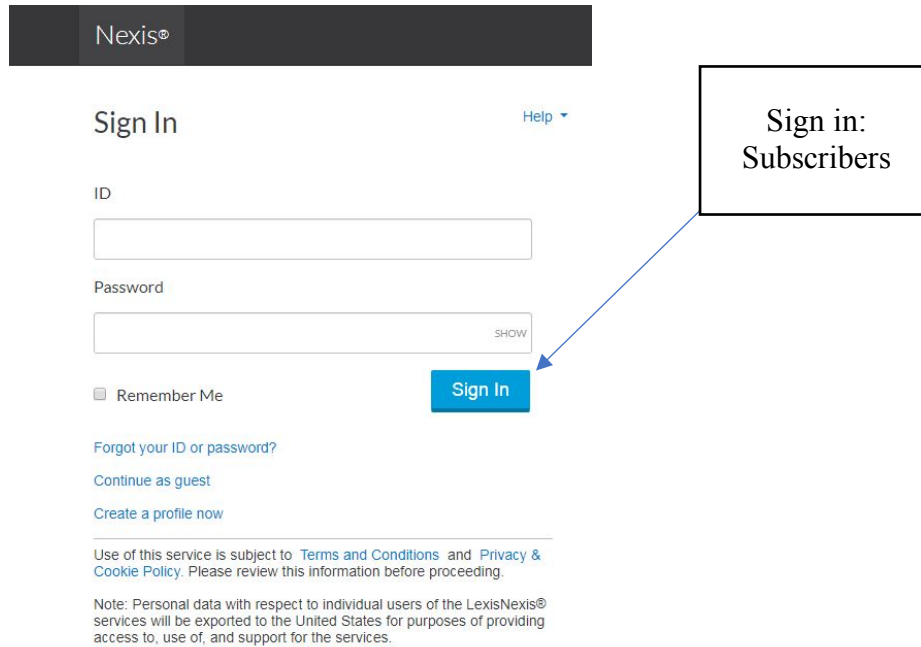
- 1.) Specific mentioning about talks or negotiations about a program, mentioning country and IMF name. Take the date that is mentioned in article, if that is not available, take the date the article or statement was published.
- 2.) If there is no clear information about a specific program, but an IMF meeting which involves discussions about potential programs for the country, take the time of the meeting as a negotiation date if there is a specific press release or discussion about it mentioning both the country and the IMF.
- 3.) Otherwise, code cases as missing.

Details about coding process for a potential replication.

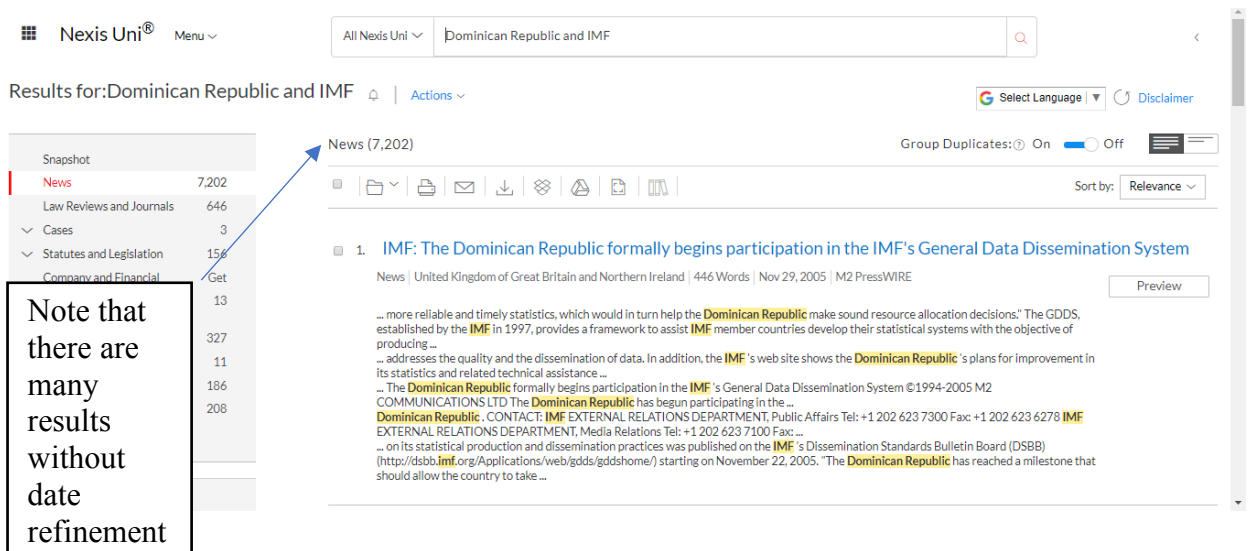
Lexis Nexis:

Go to website: <https://www.lexis.com/>

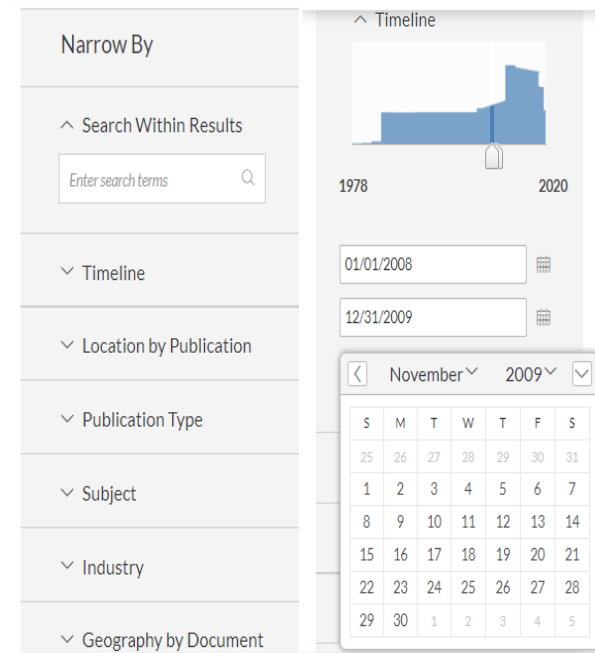
I. Open the site, sign in as subscriber (or try guest account with less features)



II. Login and search keywords: “Name of respective country” AND “IMF”, i.e. “Dominican Republic” and “International Monetary Fund” / ”IMF”.



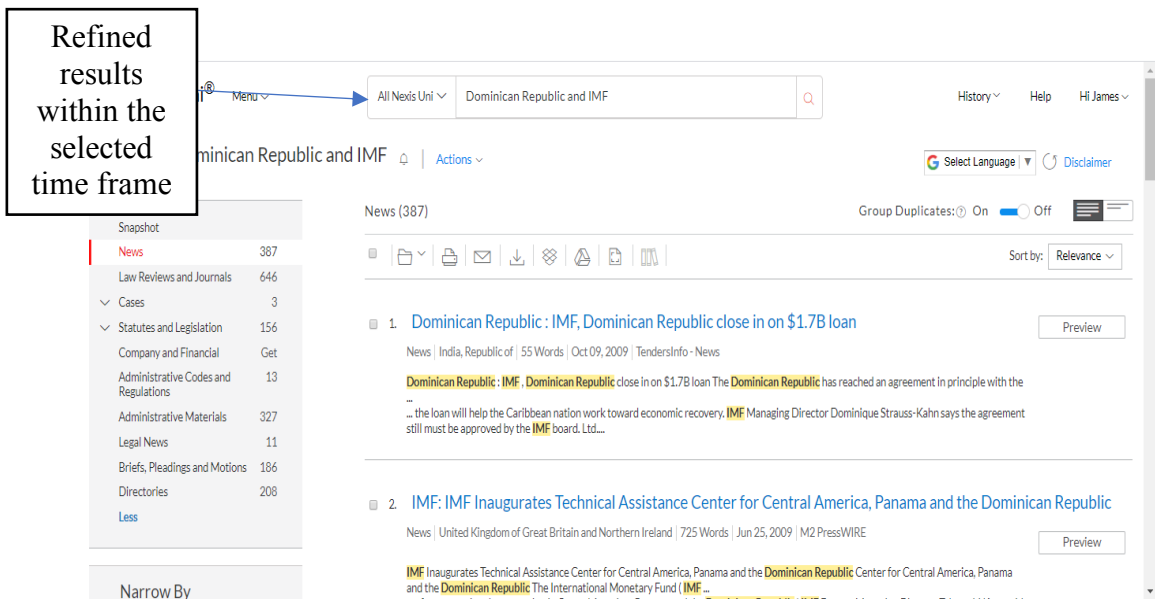
### III. Screen and narrow the timeline:



Set according to the approved time of a country's economic program with the IMF: i.e. Dominican Republic has an approved economic program with the IMF in November 2009. Then the setting of timeline will be as follows,

Notice: Most of the economic programs with IMF are negotiated within one year, hence we first customize the search date within the range of one year. If there is no information or news about the program within the one-year-set, extend the searching date to more one year.

### IV. Skim over news result and select the news that matches our criteria.





- V. Apply the criteria and coding scheme. The example below does not state a specific negotiation date in the text. Hence, we take the date, that the information was published and code the begin of negotiations as of August 2009.

This is the date selected as negotiation date

Export Citation

TendersInfo

August 31, 2009 Monday

Clear statement that negotiations are started, mentioning

Length: 232 words

Byline: Mamta03

Body

The **Dominican Republic** will open formal talks with the International Monetary Fund this week aimed at securing \$1.5 billion in new assistance from the multinational lender.

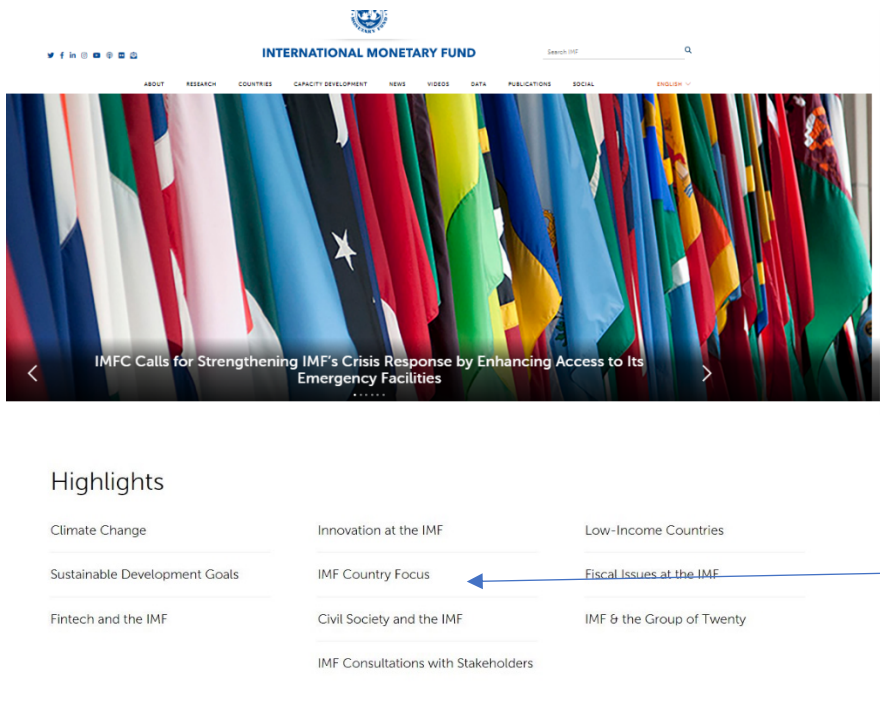
A possible standby agreement with the **IMF**, the Caribbean nation's first in more than 2-1/2 years, was announced by the central bank over the weekend after Finance Minister Vicente Bengoa kicked off preliminary talks with **IMF** officials in Washington on Friday. Like other Caribbean island states, the **Dominican Republic** has been hard hit by the global financial crisis, weak export earnings and remittances and recent declines in tourism. After signing a letter of intent with the **IMF**, the terms of which could be agreed upon as early as this week, the government would receive an initial **IMF** credit totaling about \$300 million to help cover a deficit in its budget for this year, the central bank said in a statement. It said the government was also seeking about \$200 million in new lending from the [Inter-American Development Bank](#) to help cover budget shortfalls. To meet additional financing needs, the central bank said the government was considering a new sovereign debt issue totaling \$1 billion. It was not immediately clear how soon or on what exact terms the government would seek to tap international capital markets for support, however. (Reporting by Manuel Jimenez; Editing by Tom Brown and Maureen Bavdek) Ltd.

Classification

a) International Monetary Fund (IMF):

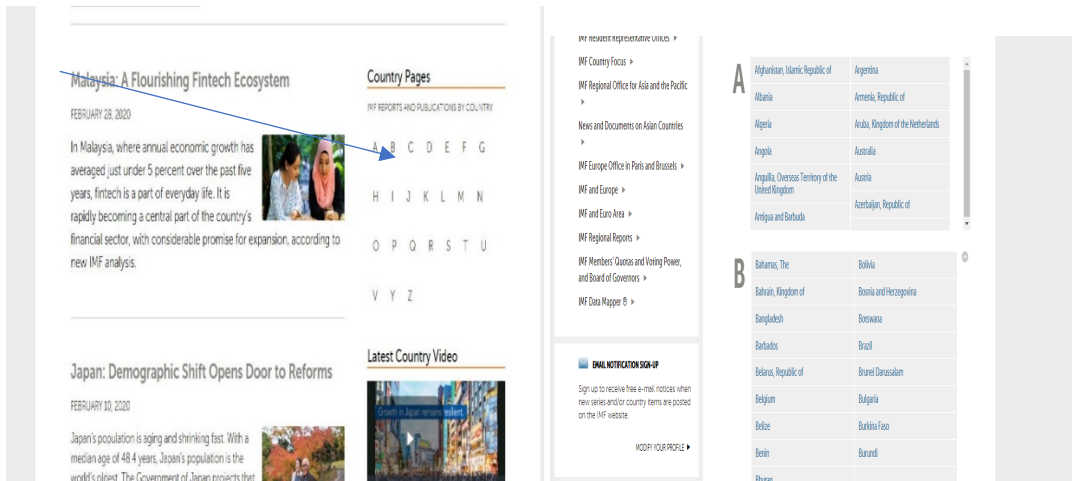
The IMF website can be accessed via the link <https://www.imf.org/external/index.htm>.

I. IMF page:



Select data on countries

II. Select the specific country we are looking for , i.e. Benin



This page contains data specifically on Benin.

INTERNATIONAL MONETARY FUND

ABOUT RESEARCH COUNTRIES CAPACITY DEVELOPMENT NEWS VIDEOS DATA PUBLICATIONS SOCIAL

**BENIN**

Executive Board Calendar

### III. Search the relevant information

Filters

Page: 1 of 27 2 3 4 5 6 7 8 9 10

Search for information about the specific program we are looking

Benin : Technical Assistance Report-Public Investment Management Assessment  
January 27, 2020 [PUBLICATIONS](#)

Benin : Fifth Review under the Extended Credit Facility Arrangement, Request for Extension, and Request for Modification of Performance Criteria-Press Release; and Staff Report  
December 26, 2019 [PUBLICATIONS](#)

Statement by the IMF Managing Director on the Reform of West Africa's CFA franc  
December 21, 2019 [PRESS RELEASES](#)

IMF Executive Board Concludes Third Review under the Extended Credit Facility Arrangement for Burkina Faso and Approves US\$24.9 Million Disbursement  
December 20, 2019 [PRESS RELEASES](#)

IMF Executive Board Completes Fifth Review Under the Extended Credit Facility Arrangement and

This is the approved economic program for Benin on June 14

27 11 12 13 14 15 16 17 18 19 20 ▶

IMF Survey: IMF Approves \$109 Million Loan to Back Benin Policy Agenda

June 14, 2010 [NEWS ARTICLES](#)

Press Release: IMF Executive Board Approves US\$109 Million ECF for Benin

June 14, 2010 [PRESS RELEASES](#)

Benin -- Letter of Intent, Memorandum of Economic and Financial Policies, and Technical Memorandum of Understanding, May 27, 2010

May 27, 2010 [LETTERS OF INTENT](#)

Short-Versus Long-Term Credit and Economic Performance : Evidence from th

May 1, 2010 [PUBLICATIONS](#)

Benin - Assessment Letter for the World Bank

April 20, 2010 [PUBLICATIONS](#)

Press Release: Statement at the Conclusion of an IMF Mission to Benin

March 26, 2010 [PRESS RELEASES](#)

Browse results before the agreement on the

IV. Selection of the negotiation date: we skim throughout the texts and select the relevant statement of the economic program.

Benin - Assessment Letter for the World Bank  
April 20, 2010 [PUBLICATIONS](#)

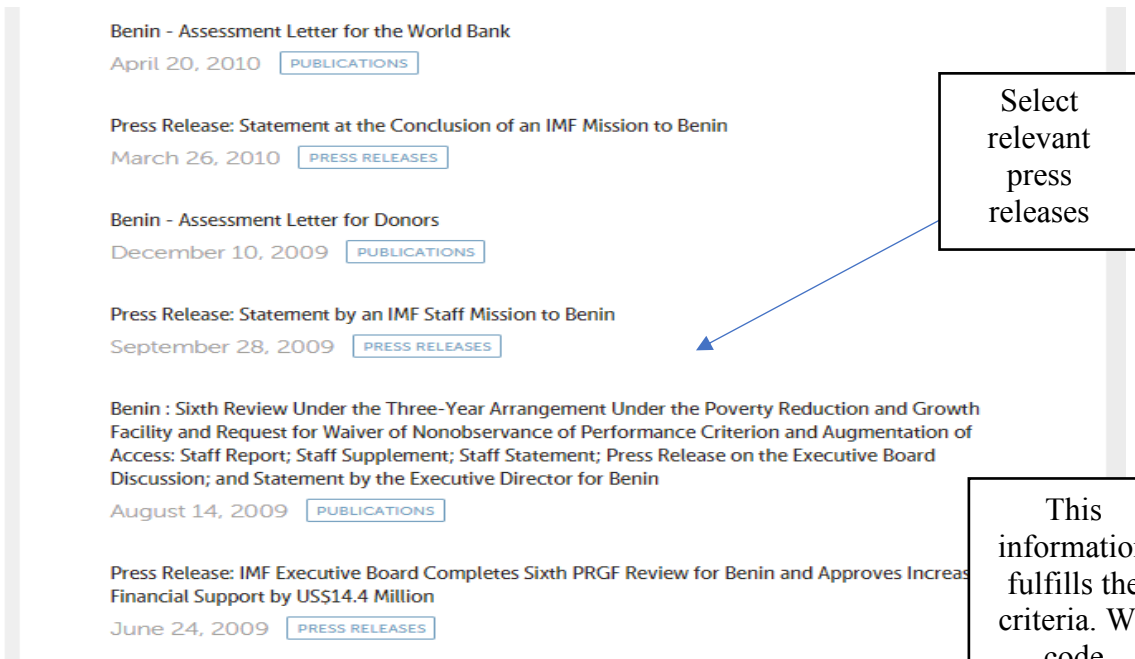
Press Release: Statement at the Conclusion of an IMF Mission to Benin  
March 26, 2010 [PRESS RELEASES](#)

Benin - Assessment Letter for Donors  
December 10, 2009 [PUBLICATIONS](#)

Press Release: Statement by an IMF Staff Mission to Benin  
September 28, 2009 [PRESS RELEASES](#)

Benin : Sixth Review Under the Three-Year Arrangement Under the Poverty Reduction and Growth Facility and Request for Waiver of Nonobservance of Performance Criterion and Augmentation of Access: Staff Report; Staff Supplement; Staff Statement; Press Release on the Executive Board Discussion; and Statement by the Executive Director for Benin  
August 14, 2009 [PUBLICATIONS](#)

Press Release: IMF Executive Board Completes Sixth PRGF Review for Benin and Approves Increased Financial Support by US\$14.4 Million  
June 24, 2009 [PRESS RELEASES](#)



## Press Release: Statement by an IMF Staff Mission to Benin

September 28, 2009

Press Release No. 09/335  
September 28, 2009

An International Monetary Fund (IMF) mission visited Cotonou during September 14-28, 2009 to conduct discussions on a program that could be supported by the IMF. The mission met the President of the Republic, H.E. Dr. Thomas Boni Yayi, the Senior Minister for Prospective Development, Evaluation of Public Policy and the Coordination of Government Action, Mr. Pascal I. Koupaki, Minister of Economy and Finance, Mr. Idriss L. Daouda, and other senior officials. It also held fruitful discussions with representatives of parliament, labor union leaders, donors, and the private sector.

The following statement was issued in Cotonou by Mr. Joannes Mongardini, IMF mission chief for Benin, at the end of the mission:

"The global economic crisis has adversely affected the near term prospects of the Beninese economy. Real GDP growth is projected to slow to 2.5 percent in 2009, a decline from 5.0 percent in 2008 due to the weak prospects for cotton and trade with neighboring countries. Inflation has declined because of lower agricultural prices, thanks to a good cereal harvest, and lower international food and fuel prices. On the other hand, the external current account deficit, excluding grants, is expected to widen to about 13 percent of GDP, reflecting the decline in cotton exports, which more than offset the improvement in the terms of trade

Select relevant press releases

This information fulfills the criteria. We code September 2009 as the big and of negotiations.

### 3.3. Google Advanced Search:

#### I. Open Google page.

The image shows a Google search for "top newspaper in Turkey". The search results page displays a grid of newspaper names under the heading "Newspapers > Turkey". The newspapers listed include Hürriyet Daily News, Milliyet, Star, Daily Sabah, Hürriyet, Yeni Şafak, Vatan, Yeni Akit, Cumhuriyet, Sözcü, Habertürk, Radikal, Sabah, Akşam, Posta, and Güneş. A callout box labeled "1" points to the grid with the text "These are the newspapers". Another callout box labeled "2" points to the "Radikal" newspaper with the text "Select one newspaper or website among the options given. We suggest selecting the economic oriented newspaper: i.e. 'Radikal'". A third callout box labeled "3" points to the "Settings" link in the top navigation bar with the text "Scroll up to Advanced search." Below the "Settings" link, a dropdown menu is visible with options: Search settings, Languages, Turn on SafeSearch, Advanced search, Search activity, Your data in Search, and Search help.

Search for top newspaper of a country in question: i.e. Turkey

1 These are the newspapers

2 Select one newspaper or website among the options given. We suggest selecting the economic oriented newspaper: i.e. "Radikal"

3 Scroll up to Advanced search.

## Advanced Search

Find pages with...

all these words:

this exact word or phrase:

any of these words:

none of these words:

numbers ranging from:  to

Use the search queries:  
type "IMF" in the  
official language as  
shown in the given  
example: 'IMF'  
'Uluslararası Para

Change the  
language to  
the  
country's  
official  
language: e.  
g Turkish.

last update:

site or domain:

terms appearing:

Insert the  
website of  
the  
newspaper  
sondakika  
(Radikal) we  
had selected  
in step 2.

results

Find pages in the language that you select.

Find pages published in a particular region.

Find pages updated within the time that you specify.

Search one site (like wikipedia.org) or limit your results to a domain like .edu, .org or .gov

Search for terms in the whole page, page title or web address, or links to the page you're looking for.

Tell SafeSearch whether to filter sexually explicit content.

Find pages in the format that you specify.

Find pages that you are free to reuse.

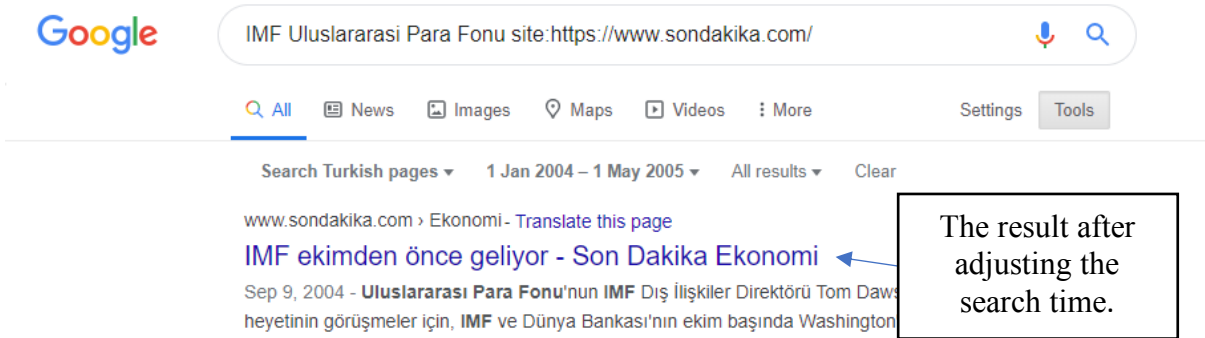
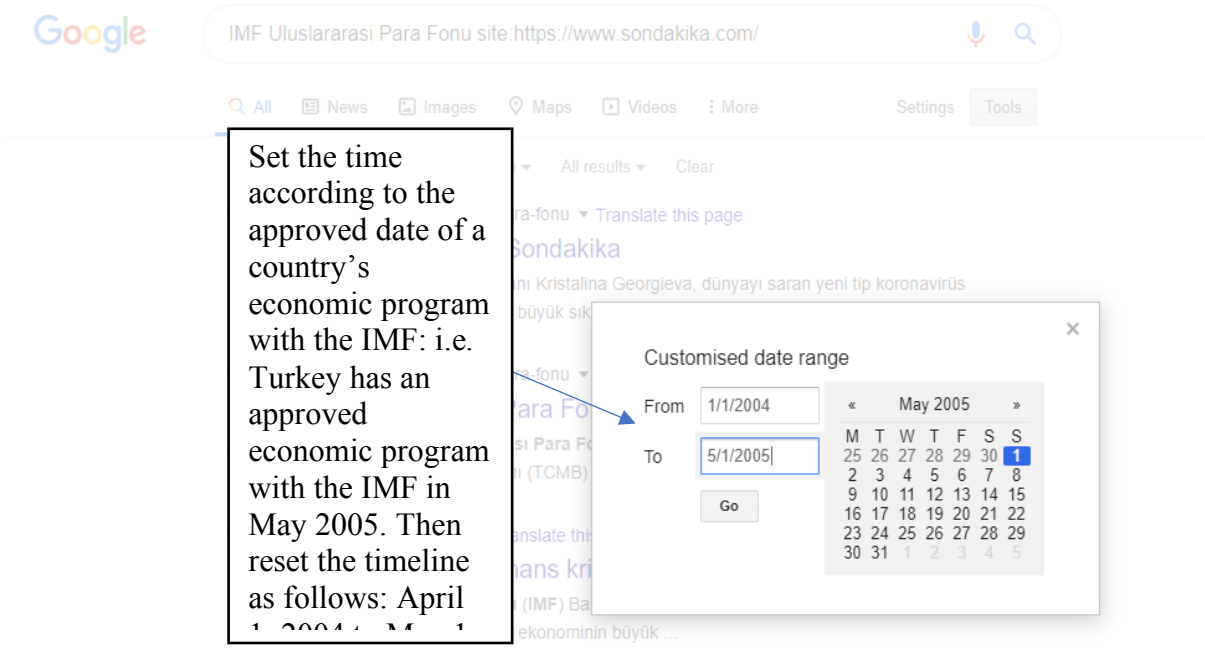
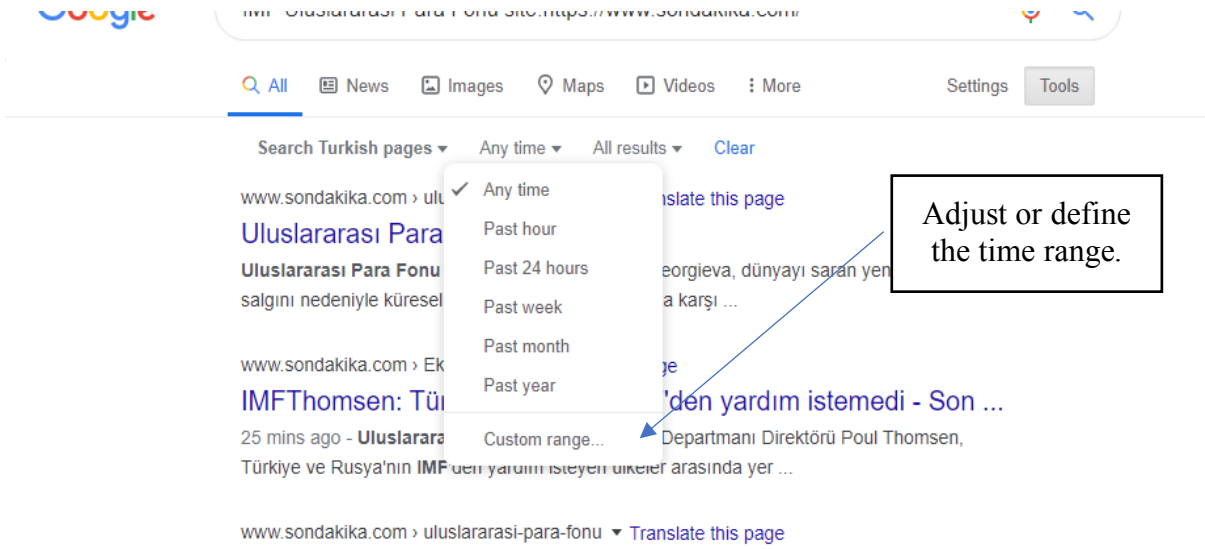
Click the  
advanced  
search.

The  
result of  
our  
search  
without  
adjusting

IMF Uluslararası Para Fonu site:https://www.sondakika.com/

Search Turkish pages ▾ Any time ▾ All results ▾ Clear

- [www.sondakika.com > uluslararasi-para-fonu](https://www.sondakika.com/uluslararasi-para-fonu) ▾ [Translate this page](#)  
**Uluslararası Para Fonu - Sondakika**  
**Uluslararası Para Fonu (IMF)** Başkanı Kristalina Georgieva, dünyayı saran yeni tip koronavirüs salgını nedeniyle küresel ekonominin büyük sıkıntıyla karşı ...
- [www.sondakika.com > Ekonomi](https://www.sondakika.com/ekonomi) ▾ [Translate this page](#)  
**IMF Thomsen: Türkiye ve Rusya IMF'den yardım istemedi - Son ...**  
25 mins ago - **Uluslararası Para Fonu IMF** Avrupa Departmanı Direktörü Poul Thomsen, Türkiye ve Rusya'nın IMF'den yardım isteyen ülkeler arasında yer ...
- [www.sondakika.com > uluslararasi-para-fonu](https://www.sondakika.com/uluslararasi-para-fonu) ▾ [Translate this page](#)  
**Son Dakika Uluslararası Para Fonu Haberleri - Uluslararası ...**  
ABD'de gerçekleştirilecek **Uluslararası Para Fonu (IMF)** - Dünya Bankası Yıllık Toplantıları'na, Türkiye Cumhuriyet Merkez Bankasını (TCMB) temsilen TCMB ...
- [www.sondakika.com > Ekonomi](https://www.sondakika.com/ekonomi) ▾ [Translate this page](#)  
**IMF Başkanı: 2009'daki finans krizinden daha kötüsü ...**



Notice: Most of the economic programs with IMF are negotiated within one year, for this, it is suggested to first customize the searching date within the range of one year. If there is no information or news about the started date of program within the one-year-set, extend the searching date to more one year.



Open the news and use Google translation to



z.B: Kredit von 10'000 CHF kosten ab 262 CHF/ Jahr. Online 2 Min Antrag

**Kredit 3000 - 350'000 CHF**  
Mutuo AG



Son Dakika > Ekonomi > IMF ekimden önce geliyor - Son Dakika Ekonomi

## IMF ekimden önce geliyor

16 yıl önce

Uluslararası Para Fonu'nun (IMF) Dış İlişkiler Direktörü Tom Dawson, IMF heyetinin görüşmeler için, IMF ve Dünya Bankası'nın ekim başında Washington'da yapılacak yıllık güz toplantılarından önce Türkiye'ye gelmesinin beklendiğini söyledi.



**Kredit 3000  
- 350'000  
CHF**

Mutuo AG

z.B: Kredit von 10'000 CHF kosten ab 262 CHF/ Jahr



z.B: Kredit von 10'000 CHF kosten ab 262 CHF/ Jahr. Online 2 Min Antrag

**Kredit 3000 - 350'000 CHF**  
Mutuo AG



Last Minute > Economy > IMF comes before planting - Last Minute Economy

## IMF comes before planting

16 years ago

International Monetary Fund (IMF) External Relations Director Tom Dawson, the IMF delegation for the negotiations, before the annual fall meeting of IMF and World Bank held in Washington earlier said he expected to arrive in Turkey in October.



**Kredit 3000  
- 350'000  
CHF**

Mutuo AG

z.B: Kredit von

Google translation version. Although Google translation does not translate accurately, it generally conveys the main idea of a

We skim the text and understand the main idea of it. This article indicates that the first information about the beginning of negotiations became public in September 2009 when this article was published, even though the official negotiations were only supposed to start in October. We code the begin of negotiations thus as

Son Dakika

Haber Yayın Tarihi: 10.9.2004 8:28:00 Kaynak: Radikal



Paylaş



Tweetle



Gönder

14:36



## Appendix J: Bond spreads

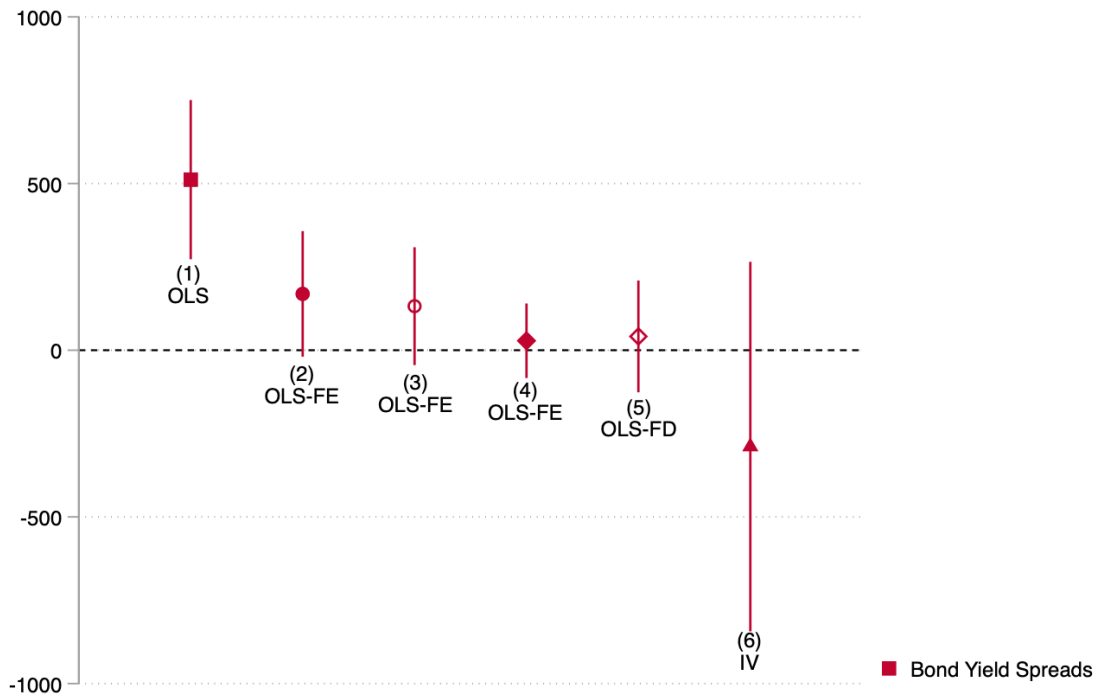
Table A12 – Baseline Results, Bond Spreads

Estimation Method	OLS (1)	OLS-FE (2)	OLS-FE (3)	OLS-FE (4)	OLS-FD (5)	IV (6)
IMF program	511.543 [143.144] {0.001}	168.916 [112.842] {0.139}	132.090 [106.001] {0.217}	28.398 [68.004] {0.676}	41.358 [100.461] {0.682}	-289.120 [337.027] {0.391}
Observations	857	857	857	855	807	855
Adjusted R-squared	0.104	0.015	0.114	0.227	0.207	0.269
Country FE	No	Yes	Yes	Yes	Yes	Yes
Year FE	No	No	Yes	Yes	Yes	Yes
Controls (t-4)	No	No	No	Yes	Yes	Yes
<b>First Stage Results</b>						
IMFprobability X IMFliquidity						-0.327 [0.094] {0.001}
IMFprobability						2.986 [0.722] {0.000}
KP underid. p						0.002
KP weak id. (F)						12.061

**Notes:** The dependent variable is the spread of a country's government bonds over those of the United States, with 100 points equivalent to 1% in interest rates. Standard errors clustered at the country level are displayed in brackets, p-values in curly brackets. Appendix D provides a comprehensive list of all economic and political controls added in column 4.

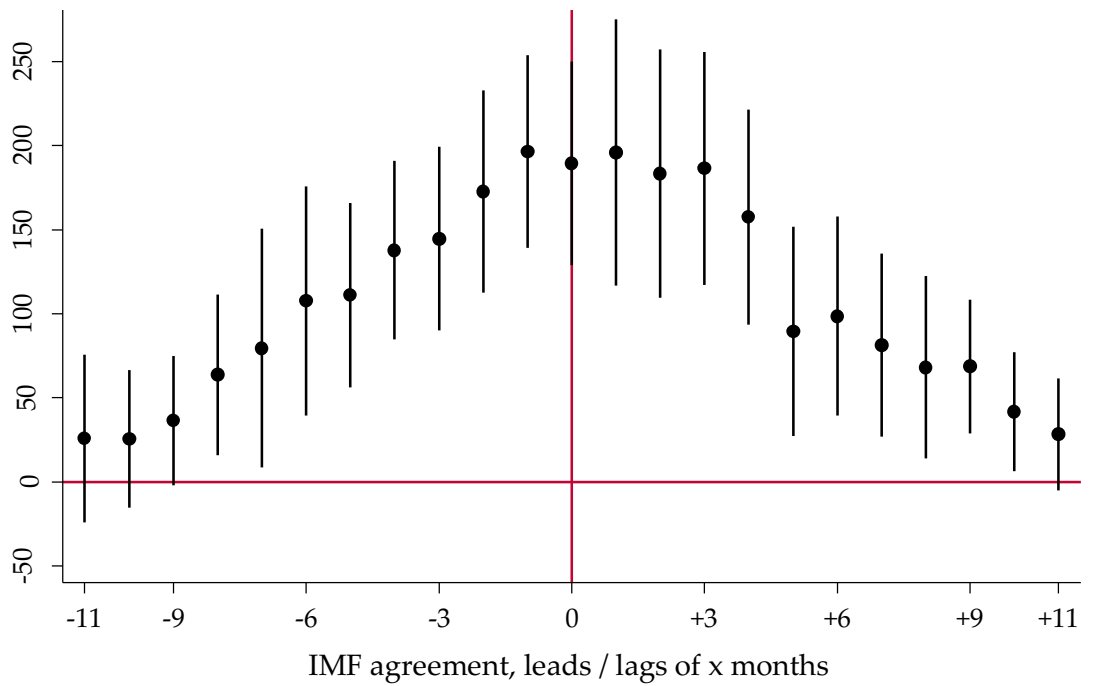
Interpretation: The pattern of point estimates closely resembles those using credit ratings. However, the estimates are less precisely estimated due to the lower availability of bond spread data. Note the lower number of observations.

Figure A12 – Baseline Results, Bond Spreads



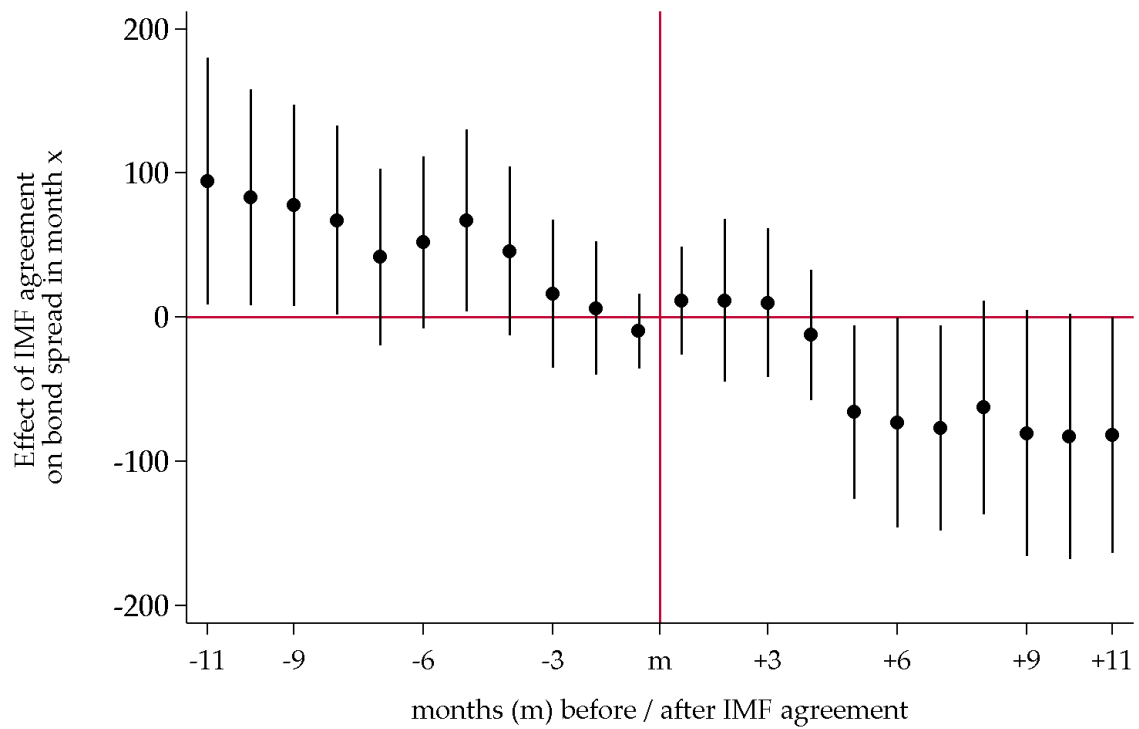
**Notes:** The dependent variable is the spread of a country's government bonds over those of the United States, with 100 base points equivalent to 1% in interest rates. Coefficient estimates are shown with 90%-confidence intervals, based on standard errors are clustered at the country level.

Figure A13– Event-based Identification: Bond Spreads around Program Start within Country-Year



**Notes:** The figure plots the coefficients and 90 percent confidence intervals of different lags and leads from a regression of bond spreads at the end of a month on *IMF agreement*. Estimated using regression equation 6.

Figure A14 – Event-based Identification: Bond Spread Changes around Program Start within Country-Year



**Notes:** The figure plots the coefficients from individual regressions of changes in bond spreads at the end of a month on *IMF agreement*. Each spread change is computed as  $\text{spread}(m+x) - \text{spread}(m)$ . Estimated using equation 7.

## **Appendix K: Exploratory Analysis of Statements by Rating Agencies**

In a first step, we conduct an exploratory analysis about the availability of statements on *Factiva*, a commercial database for press articles as well as corporate and business information owned by Dow Jones & Company, and the LexisNexis search engine. We searched for articles containing statements of rating agencies concerning the up- or downgrading of sovereigns based on the (potential) interference of the IMF, using the following search terms independently or in combination with each other: *IMF*, *Sovereign*, *Rating Agency*, *Rating*, *Development*. The statements listed below contain decisions of the three major rating agencies *Standard & Poor's*, *Moody's*, and *Fitch*. Overall, the exploratory search process yielded statements for 14 different countries (in Africa, Asia and Eastern Europe) in the years between 1999 and 2016. In the following, we list statements starting with decisions from *Standard & Poor's*, the agency of primary interest, followed by the ones from *Moody's* and those from *Fitch*. Countries are ordered alphabetically and ascending in years.

Based on this exploratory analysis, which makes no claim of being exhaustive, we designed our systematic text analysis described in more detail after the following statements.

**Standard and Poor's:**

**Albania, 2014**

"We revised the outlook to stable because we think that the recently concluded *International Monetary Fund programme* will serve as a *policy anchor for fiscal consolidation* and support the sustainability of Albania's high government debt," S&P's said."

Source: Balkan Insights, <http://www.balkaninsight.com/en/article/standard-and-poor-s-upgrade-albania-s-rating>

**Angola, 2011**

"Standard & Poor's (S&P) has raised Angola's sovereign risk rating to BB-, citing [...] the *IMF-recommended fiscal and monetary reforms*, which are expected to help mitigate the downside risks to over-dependence on the hydrocarbon sector."

Source: IHS Global Insight Daily Analysis, accessed via Factiva, 08.06.2017

**Bosnia and Herzegovina, 2016**

"The *IMF arrangement* will also provide the *fiscal space for needed reforms and infrastructure investments*. [...] it will *anchor fiscal discipline* for the authorities and aim to improve revenue collection and the efficiency of government spending."

Source: S&P, [http://www.standardandpoors.com/en\\_US/web/guest/article/-/view/type/HTML/id/1707896](http://www.standardandpoors.com/en_US/web/guest/article/-/view/type/HTML/id/1707896)

**Ghana, 2015**

"We think the new *International Monetary Fund (IMF) program* [...] will help in addressing *fiscal and external imbalances* [...]"

Source: S&P according to African Markets, <https://www.african-markets.com/en/news/west-africa/ghana/s-p-ghana-b-b-ratings-affirmed-on-new-imf-program-outlook-remains-stable>

### **Sri Lanka, 2009**

“[...] (S&P) revised the outlook on its "B" long-term foreign currency rating for Sri Lanka to positive yesterday. The move reflects the country's improved external liquidity position owing to the new International Monetary Fund (IMF) standby loan agreement of US\$2.6 billion. [...]. The *stringent macro-economic consolidation conditions attached to the programme should force the government to reduce its fiscal deficit [...]. The central bank's commitment under the programme to a strict monetary policy including a reduction of advances to the government and a flexible exchange rate should also have a positive effect on Sri Lanka's medium-term sovereign risk.*”

Source: IHS Global Insight Daily Analysis, accessed via Factiva, 08.06.2017

### **Ukraine, 2015**

“We view the risk of another default in the next two to three years as diminished due to the *Ukrainian authorities' commitment to the reforms set out in the International Monetary Fund (IMF) program,*” S&P analysts including Frank Gill said in the report.”

Source: Bloomberg, <https://www.bloomberg.com/news/articles/2015-10-19/ukraine-rating-raised-to-b-by-s-p-on-debt-exchange-reform-plan>

### **Moody's:**

Indonesia, 2002

“Moody's Investors Service changed the outlook [...] to positive from stable. The rating agency cited Indonesia's recent Paris Club memorandum of understanding and the country's *improved relationships with other foreign creditors, including the IMF, as bettering the country's liquidity position* in the coming two years. [...] Going forward, upward movement in the ratings will depend on, among other things, continued political stability, progress in disposing of IBRA assets, fiscal performance, and *the ability of the government to continue to meet the targets under its IMF program* and maintain good relations with foreign creditors generally. Moody's said that the positive outlook reflects progress made so far, but that *continued reforms were necessary to lift Indonesia's economic performance and improve investor confidence.*”

Source: Moody's Investor Service Press Release, accessed via Factiva, 08.06.2017



### **Pakistan, 2015**

“Credit rating agency Moody’s has changed the outlook on Pakistan's sovereign rating to Positive from Stable, affirming the rating itself at Caa1 [...]. The decision to change the outlook was prompted by Pakistan's improving liquidity position, the *government’s continued efforts towards fiscal consolidation, and the steady progress with structural reforms under the International Monetary Fund (IMF)’s programme*. Pakistan's external liquidity position has improved substantially in the past 12 months [...], supported by the narrowing current-account deficit, ongoing disbursements from the IMF, [...]. Meanwhile, fiscal discipline has also improved, as budget deficit and the government domestic borrowing have been gradually reduced. *On the structural reforms front, the agency pointed to the country’s successful completion of a number of IMF structural benchmarks, including those on the fiscal and debt management front and energy sector reforms.*”

Source: IHS Global Insight Daily Analysis, accessed via Factiva, 08.06.2017

### **Egypt, 2016**

“Importantly, the rating agency views the staff-level agreement with the IMF which was announced on 11 August 2016 as credit-positive, because it will help alleviate some of Egypt's external liquidity pressures. Under the Extended Fund Facility (EFF) Egypt would gain access to about \$12 billion of external funding through the IMF. The agreement is subject to approval by the IMF's Executive Board, which Moody's expects within 6-8 weeks. In Moody's view, the agreement reached with the IMF is also important because it will unlock external funding from other multilateral and bilateral sources, and support the implementation of fiscal and economic reforms. These include the long-delayed introduction of a value-added tax and moves to a more flexible exchange rate regime.”

Source: Moody’s, [https://www.moody.com/research/Moodys-affirms-Egypt-B3-rating-outlook-stable--PR\\_352656](https://www.moody.com/research/Moodys-affirms-Egypt-B3-rating-outlook-stable--PR_352656)

### **Rwanda, 2016**

“Moody's assigned Rwanda first-time local and foreign-currency issuer ratings of B2 last week, and gave the country a Stable outlook. [...] In Moody's view, a Stable outlook for Rwanda's sovereign credit is justified given access to USD204 million from the *International Monetary Fund (IMF) under the country's 18-month Standard Credit Facility (SCF) arrangement*. Additionally, it sees the government's policy implementation track record as strong, and *expects improvements in both its fiscal and external positions to materialise over the medium term.*”

Source: IHS Global Insight Daily Analysis, accessed via Factiva, 08.06.2017

### **Sri Lanka, 2016**

“Therefore, in Moody's view, while the *IMF program* will alleviate Sri Lanka's external liquidity pressures, a more durable improvement in the macro-economic and balance of payments pressures will depend on the extent to which authorities can durably reverse the ongoing fiscal deterioration while improving Sri Lanka's international competitiveness and attractiveness to foreign investors. The study underpins *Moody's view that effective policy implementation determines the extent to which a country reaps the benefits of an IMF program.*”

Source: Moody's, [https://www.moodys.com/research/Moodys-Sri-Lankas-benefits-from-its-IMF-program-depend-on--PR\\_350166](https://www.moodys.com/research/Moodys-Sri-Lankas-benefits-from-its-IMF-program-depend-on--PR_350166)

### **Ukraine, 2015**

“The decision to upgrade the sovereign rating of Ukraine's government to Caa3 is based on the following key drivers: [...] 2. *Progress in political and economic reform under the auspices of the IMF-led programme, supporting a rebalancing of the economy and a meaningful reduction in public and external financial deficits.*”

Source: Moody's, [https://www.moodys.com/research/Moodys-upgrades-Ukraines-sovereign-rating-to-Caa3-outlook-stable--PR\\_336283](https://www.moodys.com/research/Moodys-upgrades-Ukraines-sovereign-rating-to-Caa3-outlook-stable--PR_336283)

**Fitch:**

**Benin, 2004**

*“Fitch stated that successive IMF reform programmes have led to macro-economic stabilisation, including a reduction in the budget deficit and a stabilisation of the government’s debt burden through tight fiscal policies.”*

Source: World Markets Research Centre Daily Analysis, accessed via Factiva, 08.06.2017

**Ghana, 2005**

*“Fitch Ratings has upgraded Ghana's long-term foreign and local currency rating [...] The International Monetary Fund (IMF)/World Bank supported Poverty Reduction Strategy will be supported with higher aid funding, which should improve public investment, counteract a projected current-account deterioration and improve international reserves.”*

Source: World Markets Research Centre Daily Analysis, accessed via Factiva, 08.06.2017

## Appendix L: Systematic Analysis of Statements by Rating Agencies

Based on the exploratory analysis, we selected FACTIVA as the more suitable database for a systematic analysis. In particular the feature to select an industry class improved the matching rate between search terms and statements significantly. Our final systematic approach was to

- 1.) Open the database and login (library access or account is required).
- 2.) Issue search queries:
  - “program” within three words distance to “IMF or International Monetary Fund”, Industry: Rating Agency, Language: English or German
  - “liquidity” within three words distance to “IMF or International Monetary Fund”, Industry: Rating Agency, Language: English or German
  - “reform” within three words distance to “IMF or International Monetary Fund”, Industry: Rating Agency, Language: English or German
  - “program,” “IMF or International Monetary Fund” and “rating” within a ten word corridor, Industry: All, Language: English or German
- 3.) Manually skim over all statements and delete obviously false matches.
- 4.) Pool all remaining text in one text file.
- 5.) Relevant text is often embedded in larger bodies of text irrelevant to our purpose. Thus, we run a python script (see below) that searches the text for “IMF” or “International Monetary Fund” and extracts ten lines of text buffer prior and subsequent to a hit. Moreover, we used regularities in text structure to extract the according publisher and date. Selecting the size of the buffer one faces a trade-off between reducing the volume of text and cutting potentially relevant information. A ten line buffer is a conservative choice towards minimizing the loss of information.
- 6.) Because these are still relatively large chunks of texts, we **manually read the remaining texts and delete irrelevant relevant parts**, and then copy the rest of the text and additional information (name of rating agency and country) to excel. If duplicates appear they are deleted. This left us with 126 statements.

We then developed the following codebook. Two student assistants were equipped with this codebook and went through all statements. In case of deviations in opinion, we always choose the choice biasing against our priors, i.e. the effects we hypothesize. Accordingly, in case of deviating opinions statements are grouped as “liquidity and reforms” instead of “reforms only” and are grouped as “mixed/neutral/negative” based on the more negative of two assessments.

## Positive-Negative Dimension:

*Positive* = 1 iff the statement in question includes remarks which **indicate** that the IMF is seen in a positive light by the rating agency. Assumes background knowledge about basic economic processes and implications of measures for economy.

- Indicators for IMF being seen in positive light by rating agency:
  - Citing **actual** or **possible** implementation or continuation of an IMF program or measure or **actual** or **possible** positive developments due to an IMF program or measure as a reason for an **actual** or **possible** positive rating. Conversely, citing **actual** or **possible** lack of implementation or discontinuation of an IMF program or measure as a reason for an **actual** or **possible** negative rating.
    - ➔ **Example for actual continuation of program as reason for actual positive rating:** ID5: "The ratings firm cited the country's improved performance under the European Union-International Monetary Fund program, falling near-term liquidity risk and a better fiscal track record for its upgrade"
    - ➔ **Example for possible discontinuation of/ compliance problems with program as reason for possible negative rating:** ID10: "Greece's ratings could also be lowered for reasons unrelated to the proposed ESM, if the Greek government's ability to comply with the program is undermined by domestic political opposition or materially weakens for other reasons, increasing the likelihood of failure to fully comply with the IMF/EU program."
    - ➔ **Example for possible discontinuation of program as reason for actual negative rating:** ID69: "The outlook is negative, reflecting what we view as ongoing social and political risks associated with deleveraging efforts by Portugal's highly indebted private and public sectors, as well as financing uncertainties related to Portugal's exit from the EU/IMF program, expected in May 2014. We believe this is symptomatic of diminishing political backing for further fiscal and structural reforms. The Constitutional Court's deliberations over further fiscal measures could coincide with Portugal's planned EU/IMF program exit in the second quarter of 2014."
    - ➔ **Example for actual implementation of program as reason for possible positive rating:** ID20: "Turkey's economy has been improving and a continuation of the current positive trend could lead to higher credit ratings for the country, according to the general manager of Moody's Interbank Credit Service's regional Middle East office. [...] "We see lower inflation, the fiscal deficit relatively under control and the International Monetary Fund (IMF) targets seem to be achievable," he said. The IMF is helping Turkey through a stabilization package that sets macroeconomic targets and provides aid in return. [...] In Turkey, programs have been suggested by the IMF that are aimed at lifting its economy out of the debt trap and making it into a debt paying machine. "The IMF provides financing to Turkey through a macro-economic stabilization program. The program calls for the government to take certain actions to correct the macro-economic imbalances. These imbalances include various fiscal and economic reforms that would lead to improvement in the macro-economic conditions."
  - Citing **actual** or **possible** implementation or continuation of an IMF program or measure as a factor for **actual** or **possible** positive economic developments in the country. Conversely, citing **actual** or **possible** lack of implementation or discontinuation of an IMF program or measure as a factor for **actual** or **possible** negative economic developments the country.
    - ➔ **Example for actual implementation/ compliance with program as factor for actual positive developments:** ID121: "As a result of the Chuan's cabinet's decisive policy to comply with the IMF program together with the disbursement of US\$10.282 billion as of March 30, 1998 out of the IMF rescue package for US\$17.2 billion, the present market situation is relatively stable and the market confidence seems to be recovered to some extent. (...)"
  - Use of terms such as "successful completion" when talking about an IMF-program or measure.
    - ➔ **Example:** ID79: "Such political developments allowed to strengthen the fiscal management stability. The Latvian government also in late 2011 successfully completed the international assistance program with the European Commission and the International Monetary Fund (IMF), said the agency."

*Negative* = 1 iff the statement in question includes remarks which **indicate** that the IMF is seen in a negative light by the rating agency. Assumes background knowledge about basic economic processes and implications of measures for economy

- Indicators for IMF being seen in negative light by rating agency:
  - Citing application for or implementation of IMF program or measures as a reason for an actual or possible downgrading
    - ➔ No examples
  - Citing application or implementation of IMF program or measures as a reason to keep outlook at negative
    - ➔ **Example:** ID74 “Moody’s Investors Service has today confirmed Egypt’s B2 government bond ratings and maintained the rating outlook at negative. [...] The key drivers of today’s confirmation of Egypt’s B2 sovereign rating and negative outlook are: [...]4) The formal request by the new Egyptian government for IMF support”

*Positive* =0 and *Negative* =0 iff the statement in question neither includes remarks which indicate that the IMF is seen in a positive nor remarks which indicate that the IMF is seen in a negative light by the rating agency, or status of remark (positive/negative) is unclear.

- Purely descriptive statements about IMF without evaluative content
  - ➔ **Example:** ID59 “Pakistan is also moving forward on structural reforms under its program with the International Monetary Fund (IMF). These reforms focus primarily on fiscal consolidation, debt management, and addressing structural constraints in the energy sector.”
- Statements with not enough context to conclude status (e.g. because it is unclear if rating has changed in any way)
  - ➔ **Example** ID93: ““However, policy adjustments and financial support under an 18-month IMF program agreed in April 2009 support a stable rating outlook,” says Byrne.”

## Liquidity-Reform Dimension:

*Liquidity Only* = 1 iff the only feature addressed by the rating agency in their remarks in connection with the IMF is the liquidity of the country that is being rated (regardless of whether IMF is seen as donor or whether there might be consequences for liquidity resulting from e.g. implementation of IMF-program).<sup>1</sup>

- Verbal indicators taken to address liquidity in statements about IMF:
  - “financial assistance”
  - “program to relieve the financial burden”
  - “(future) disbursements”
  - “financial support from the IMF”, etc.
    - ➔ **Example:** ID8 “(...) In our view, such improvements could be brought about by a positive conclusion to the negotiations with Gazprom on Ukraine's gas contract and/or a resumption of disbursements under Ukraine's IMF program,” the press release reads.”

*Reform Only* = 1 iff the only feature addressed by the rating agency in their remarks in connection with the IMF are reforms for the country that is being rated (regardless of whether IMF is seen as the one demanding reforms or the source of further IMF-unrelated reforms)<sup>2</sup>.

- Verbal indicators taken to address reform in statements about IMF:
  - “technical assistance”
  - “(...) bolstering its institutional framework”
  - “policy measures”
  - “IMF assisted economic reform program”, etc.
    - ➔ **Example:** ID3 “(...) Moody's report explains that the Solomon Islands successfully graduated from an IMF program in 2016, with progress in bolstering its institutional framework.”

*Reform and Liquidity* = 1 iff the rating agency addresses both reforms and liquidity in their remarks in connection with the IMF (regardless of whether IMF is seen as the one demanding the reforms or the source of further IMF-unrelated reforms and regardless of whether IMF is seen as donor or whether there might be consequences for liquidity resulting from e.g. implementation of IMF-program).

- ➔ **Example:** ID2 “(...) The new IMF credit facilities (an Extended Credit Facility and an Extended Fund Facility (ECF/EFF)) approved in November unleashed official lending that had been withheld for more than a year. The second driver for stabilizing the outlook relates to the adoption of key structural reforms both in connection with the IMF program and in technical consultation with the IMF and other multilateral lenders and donors. (...)”

*Liquidity Only* = 0, *Reform Only* = 0 and *Reform and Liquidity* = 0 iff either the rating agency neither addresses liquidity, nor reform nor both in their remarks about the IMF, or status of statement is unclear.

- Use of the expressions “IMF program” or “IMF agreements” (or synonymous expressions) with no further specification with regard to what the program or agreement is about
  - ➔ **Example:** ID13 “(...) Under this scenario, the government can get the International Monetary Fund's program “back on track” and there is a strong prospect of positive ratings action, said Edward Parker, a senior Fitch analyst.”

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<sup>1</sup> If there are consequences resulting from IMF-related liquidity, then statement is coded as 1. However, if statement only addresses circumstances or conditions which led to IMF-measures with regard to liquidity, statement is coded as 0.

<sup>2</sup> If there are consequences resulting from IMF-related reforms, then statement is coded as 1. However, if statement only addresses circumstances or conditions which led to IMF-measures with regard to reform, statement is coded as 0.

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