IMF Subsidies, Cancellations, and Resumptions: New Empirical Evidence

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For a long time, the International Monetary Fund has been criticized for subsidizing its credits. According to Walter Bagehot (1873), a lender of last resort ought to "lend freely but at a penalty." Otherwise moral hazard results (see Dreher and Vaubel 2004). Bakker and Schrijvers (2000) and the Saxton Report (2002) have presented estimates of the subsidy element in IMF lending. In this article, we present an improved and updated calculation.

We also present evidence on another criticism of IMF policy: that it fails to enforce compliance with policy conditions. The IMF claims that it cancels its programs if debtor governments do not honor their policy commitments. We show that cancellations due to noncompliance tend to be followed by new programs very soon.

Measuring the Subsidy in IMF Credits

Bakker and Schrijvers (2000) tried to quantify the subsidies implicit in the IMF credits that the seven main borrowers received during the Asian financial crisis of 1997–99. They compared the IMFs adjusted rate of charge with the Emerging Market Bond Index (EMBI) published by J.P. Morgan. Bakker and Schrijvers reported yield spreads between 5.7 percentage points in 1997 and 9.5 percentage points in 1999. Multiplying those yield spreads with the amounts

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Cato Journal, Vol. 33, No. 1 (Winter 2013).

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of the loans, they obtained a subsidy of $8.5 billion. However, their methodology was suboptimal. First, instead of using the national sub-indices of the EMBI, they used the overall EMBI index that includes many other emerging economies. Second, they did not look at the actual timing of the payments of interest and principal but assumed disbursements for the beginning of each year. Third and most important, they seem to have compared dollar interest rates and SDR interest rates without allowing for expected or actual exchange rate changes.

The Saxton Report (2002), commissioned by the Joint Economic Committee of U.S. Congress under its chairman, Rep. Jim Saxton, compared the EMBI Global with the yield of comparable U.S. Treasury securities. For the period 1995–2001, it found ex ante interest subsidies ranging from 1 percentage point, as in the case of Thailand, to almost 30 percentage points for Russia. The approach of the Saxton Report is unsatisfactory in two respects. First, it does not use the national sub-indices of the EMBI even though these are available. Second, it assumes, but does not test for, covered interest parity between dollar and SDR interest rates.

Our analysis improves on the Saxton Report in two ways. First, our standard of comparison is the EMBI sub-index for the country in question. Second, we base our computations on the actual cash flow streams under the IMF programs. Thus, we do not estimate an expected or ex ante subsidy. We compute the actual or ex post subsidy.

The Cost of Borrowing from the IMF

Country-specific cash flow data are available back to May 1, 1984. We exclude the Fund's concessional lending facilities because most of the recipients do not have access to the world capital market. We confine our analysis to the Fund's Standby Arrangements (SBA) and the Extended Fund Facility (EFF), which represent the bulk of the IMF's regular nonconcessional lending activity. We include all countries whose outstanding SBA and EFF debt to the IMF has exceeded SDR 1 billion at some point in time between May 1, 1984, and February 28, 2011. Moreover, to provide complete information on current loans, we include all countries that have been indebted to the IMF under SBAs or in the EFF at the end of our period of observation. This yields a sample of 88 arrangements. The cost of funding is measured by the internal rate of return (IRR), which is also referred

to as the yield-to-maturity. For this purpose, it is necessary to identify each borrowing arrangement's stream of cash flows along with the respective dates of payments. We have calculated each arrangement's internal rate of return, taking into account payments of principal, interest, and charges.

Some countries had more than one arrangement outstanding at a time. In those cases principal repayments were assigned to the oldest arrangement requiring redemption. Nonconcessional borrowing comes along with a coupon whose rate is linked to the SDR interest rate. Moreover, by taking into account any supplementary charges related to borrowing, referred to as "all-in" costs of funding, we determine the all-in internal rate of return (IRR*) for any arrangement in the sample.

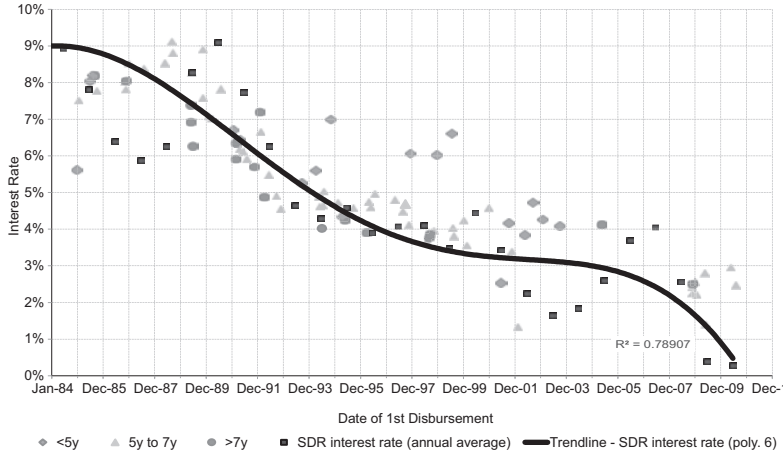
If a country has more than one arrangement outstanding at the same time, the Fund aggregates payments of interest and charges over all outstanding arrangements on certain due dates in "joint transactions." Under these circumstances, we assign payments of interest and charges to the respective arrangement on a pro rata basis according to the share of the arrangement in the country's total outstanding SBA and EFF credit volume.

For the sake of simplicity, we consolidate all payments of interest and charges on a monthly basis on the 15th. Thus, the sum of potential deviations from the considered month's original single payments' settlement dates is minimized. Figure 1 shows the yields to maturity of the 88 arrangements in SDR terms.

The Cost of Funding in Capital Markets

The second essential component to measuring the subsidy of IMF credit is the cost of equivalent borrowing in the subsidy-free, open capital market. As already mentioned, J.P. Morgan provides a large set of emerging market bond indices reflecting secondary market conditions for government debt instruments, including country-specific sub-indices of the yield to maturity. However, three data problems remain. First, not every country in the sample comes with an EMB sub-index. Second, the EMB sub-indices for some major emerging market countries do not start before 1993. As a result of these data limitations the number of IMF credit arrangements for which we can quantify the subsidy drops to 23. Third, the maturities do not usually match those of the IMF credits.

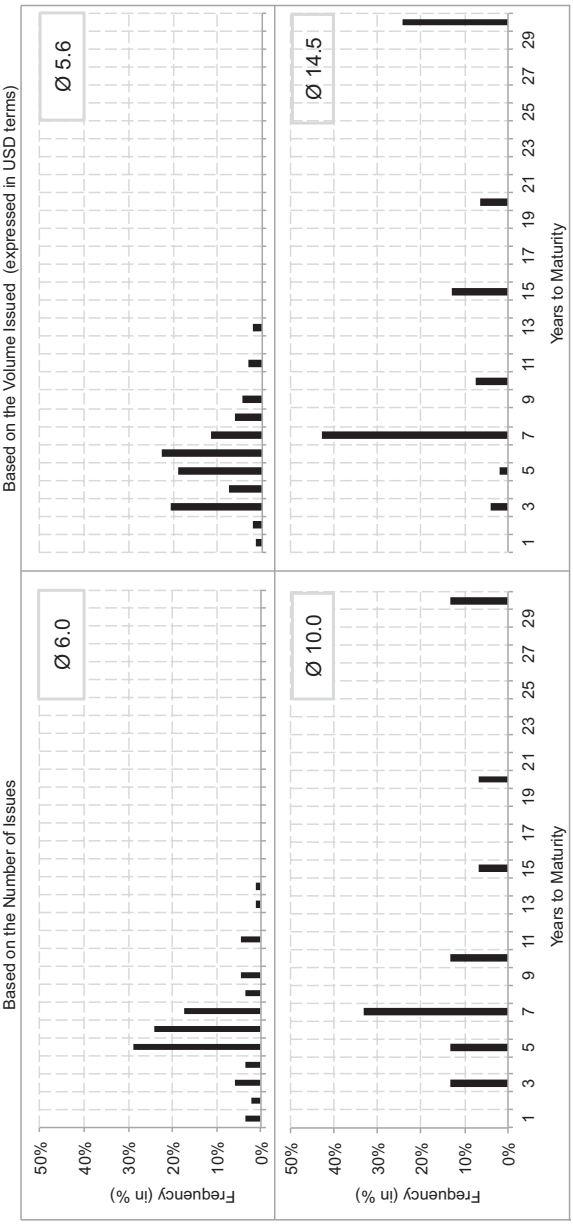
FIGURE 1
Costs Associated with IMF Credit: IRRs in SDR Terms, Dates of First Disbursement



Source: International Monetary Fund, *International Financial Statistics*.

To get a picture of the underlying mismatch of maturities, Figure 2 compares the distribution of maturities in the IMF sample and in the government bond sample. For the sake of comparison, only countries contained in the IMF sample are included in the reference sample of government bonds. The left-hand side shows that, when based on the number of issues, the average maturity in the IMF sample amounts to about six years, whereas the average government bond issue covers ten years. The IMF's lending facilities are not designed for very long-term borrowing, whereas the capital market has considerable issuance activity in the maturity segment of ten years and above. The right-hand side of Figure 2 weighs the maturities with the size of the loans. With an average of 5.6 years in the sample of IMF arrangements and a much higher average of 14.5 years in the EMBI, the mismatch rises to an average of 8.9 years. Bakker and Schrijvers (2000) reported a maturity mismatch of approximately 8.5 years. They estimated that without this maturity mismatch, the reference rate for borrowing in the capital market would have been 45 to 200 basis points lower. Thus, the calculated subsidy is overestimated to this extent. However, assuming a normal concave term structure of interest rates, the yield effect of

FIGURE 2
MATURITY DISTRIBUTION IN THE SAMPLE OF ARRANGEMENTS AND THE REFERENCE SAMPLE OF GOVERNMENT BONDS SINCE 1984



a maturity mismatch increases less than the maturity mismatch itself.

As we also include recent IMF credits to Greece and, since Greece is not an emerging economy, we use an appropriate euro reference interest rate from Bloomberg in this case.[1]

Cross-Currency Comparison of Interest Rates

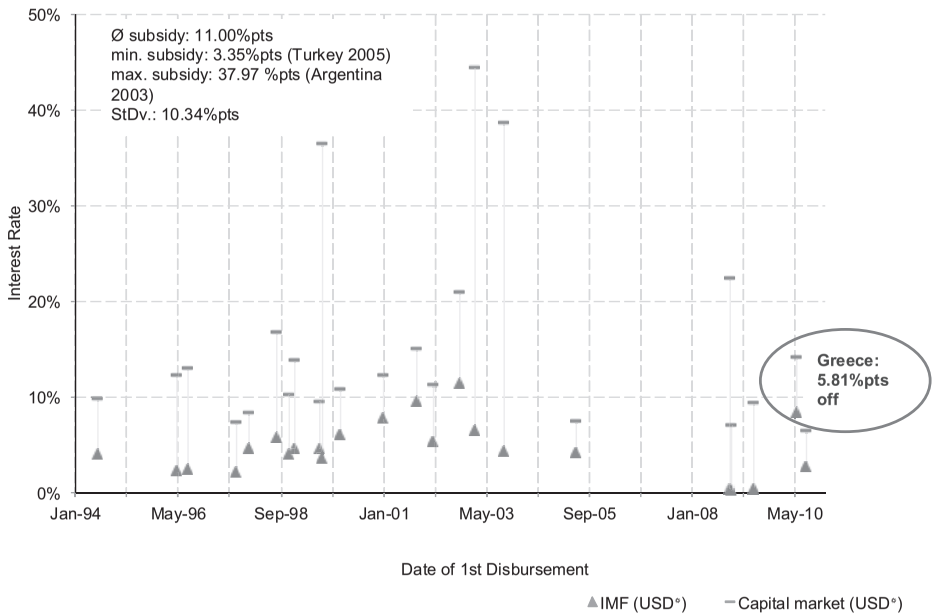
To quantify the subsidy in IMF arrangements, we convert the SDR-denominated cash flow stream of each arrangement, and thus the all-in internal rate of return, into dollars and that of Greece into euros.[2] We find substantial levels of ex post subsidization in all 23 IMF arrangements. Figure 3 shows all resulting yield spreads, and Table 1 contains the detailed results.

The subsidies range from 3.35 percentage points (44.79 percent of the corresponding capital market reference rate) to 37.97 percentage points (85.35 percent of the corresponding capital market reference rate). The unweighted average of the subsidies amounts to 11 percentage points, constituting 70.59 percent of the average capital market reference rate. The standard deviation is 10.34 percentage points. Variability is high because the governments that borrow from the IMF face volatile interest rates in the world capital market, whereas short-term interest rates in the currencies constituting the SDR basket tend to be relatively stable. If we follow Bakker and Schrijvers and deduct a maximum of 2 percentage

[1]The Greek arrangement was approved on May 9, 2010, and the first disbursement was made on May 12, 2010. The curve chosen for determining its reference rate is that of the approval date, instead of the date of the first disbursement. Not considering the date of first disbursement may appear as not proceeding in accordance with the principle of cash-effectiveness. However, the yields underlying the curve of the approval date were fixed just prior to the approval and are therefore least biased by the presence of the IMF. Greece's capital market reference yield-to-maturity in euro terms amounted to 14.2 percentage points

[2]Arrangements that had not been fully redeemed by February 2011 required special treatment when determining their IRRs in dollar terms. Had there been a market for futures contracts on the SDR as a currency or a market for forward SDR interest rates, it would have been possible to derive SDR/USD exchange rates expected for certain future points in time from the interest rate parity. But this was not feasible. We have solved the problem by constructing synthetic, maturity-adequate SDR interest rates as the weighted average of the basket countries' government bond yields prevailing for the maturities of interest.

FIGURE 3
THE EX POST SUBSIDY IN IMF CREDIT,
DATE OF FIRST DISBURSEMENT



*EUR in the case of Greece.

TABLE 1
Overview of the Results

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
Arrangements		Timing						
Country	Facility	Approval	Expiry	1st disburs.	Last disburs.	1st repay.	Fully repaid	Grace period (years)
Algeria	SBA I	5/31/89	5/30/90	6/5/89	6/5/89	9/3/92	6/4/94	3.2
Algeria	SBA II	6/3/91	3/31/92	6/6/91	12/31/91	9/2/94	12/30/96	2.7
Algeria	SBA III	5/27/94	5/22/95	6/2/94	3/15/95	9/1/97	3/14/00	2.5
Algeria	EFF I	5/22/95	5/21/98	5/25/95	5/26/98	11/24/99	11/23/05	1.5
Argentina	SBA I	12/28/84	6/30/86	1/15/85	6/27/86	1/13/89	12/6/91	2.6
Argentina	SBA II	7/23/87	9/30/88	7/31/87	3/24/88	12/6/91	2/15/94	3.7
Argentina	SBA III	11/10/89	3/31/91	11/16/89	12/3/90	2/15/94	10/30/95	3.2
Argentina	SBA IV	7/29/91	3/30/92	7/31/91	4/3/92	10/30/95	12/2/97	3.6
Argentina	EFF I	3/31/92	3/30/96	4/3/92	3/29/96	9/29/96	1/3/06	0.5
Argentina	SBA V	4/12/96	1/11/98	4/17/96	9/22/97	7/16/99	9/20/02	1.8
Argentina	SBA+SRF	3/10/00	1/23/03	12/21/00	9/10/01	1/17/03	1/3/06	1.4
Argentina	SBA VI	1/24/03	8/31/03	1/24/03	8/29/03	1/3/06	1/3/06	2.4
Argentina	SBA VII	9/20/03	1/5/06	9/22/03	3/24/04	1/3/06	1/4/06	1.8
Belarus	SBA I	9/12/95	9/11/96	9/15/95	9/15/95	12/14/98	9/14/00	3.2
Belarus	SBA II	1/12/09	3/30/10	1/14/09	3/30/10	4/13/12	3/31/15	2.0
Brazil	SBA I	8/23/88	2/28/90	8/26/88	8/26/88	11/25/91	8/25/93	3.2
Brazil	SBA II	1/29/92	8/31/93	2/3/92	2/3/92	5/2/95	2/10/99	3.2
Brazil	SBA+SRF I	12/2/98	9/14/01	12/15/98	12/9/99	12/14/99	4/29/02	0.0
Brazil	SBA+SRF II	9/14/01	9/5/02	9/28/01	9/28/01	4/29/02	9/8/04	0.6
Brazil	SBA+SRF III	9/6/02	3/31/05	9/11/02	9/9/03	9/8/04	12/27/05	1.0
Chile	EFF I	8/15/85	8/14/89	8/30/85	6/2/89	6/6/90	11/10/94	1.0
Chile	SBA I	11/8/89	11/7/90	11/13/89	11/13/89	2/12/93	9/13/95	3.3
China	SBA I	11/12/86	11/11/87	11/17/86	11/17/86	2/16/90	11/16/91	3.3
Greece	SBA I	5/9/10	5/8/13	5/12/10	12/21/10	8/12/13	12/21/15	2.6
Hungary	SBA I	5/16/88	6/30/89	5/23/88	2/17/89	3/1/90	5/21/93	1.0
Hungary	SBA II	3/14/90	2/19/91	3/19/90	11/30/90	6/18/93	11/10/95	2.6
Hungary	EFF I	2/20/91	9/15/93	2/25/91	3/26/92	8/24/95	2/23/98	3.4
Hungary	SBA III	9/15/93	12/14/94	9/20/93	9/20/93	11/15/93	11/13/95	0.2
Hungary	SBA IV	11/6/08	10/5/10	11/12/08	9/29/09	2/10/12	9/29/14	2.4
Iceland	SBA I	11/19/08	8/31/11	11/21/08	12/1/10	2/21/12	12/1/15	1.2
India	SBA I	1/18/91	4/17/91	1/23/91	1/23/91	4/22/94	10/22/95	3.2
India	SBA II	10/31/91	6/30/93	11/15/91	6/21/93	11/14/95	6/20/00	2.4
Indonesia	SBA I	11/5/97	8/25/98	11/10/97	7/20/98	2/9/01	7/18/03	2.6
Indonesia	EFF I	8/25/98	2/4/00	8/28/98	8/6/99	2/27/03	6/30/06	3.6
Indonesia	EFF II	2/4/00	12/31/03	2/9/00	12/23/03	6/30/06	10/12/06	2.5
Latvia	SBA I	9/14/92	9/13/93	9/17/92	9/2/93	12/16/95	6/1/98	2.3
Latvia	SBA II	12/15/93	3/14/95	7/20/94	7/20/94	6/1/98	7/19/99	3.9
Latvia	SBA III	12/23/08	12/22/11	12/29/08	8/12/10	3/29/12	8/12/15	1.6
Mexico	SBA I	11/19/86	4/1/88	11/26/86	3/15/88	2/25/90	3/14/95	2.0
Mexico	EFF I	5/26/89	5/25/93	6/1/89	5/27/92	11/8/93	8/30/00	1.5
Mexico	SBA II	2/1/95	2/15/97	2/6/95	12/21/95	8/1/96	8/30/00	0.6

TABLE 1 (*cont.*)
Overview of the Results

(10)	(11)	(12)	(13)	(14)	(15)	(16)	(17)	(18)
	Credit volume (in SDR mln)			Funding costs (IRR*)				
Maturity (years)	Approved	Drawn	Outst.	IMF (SDR)	IMF (USD)	Capital market (USD)	Reference (e.g. EMBI)	Subsidy (USD*)
5.0	156	156	0	8.26%	9.17%			
5.6	300	225	0	6.11%	6.70%			
5.8	457	385	0	4.62%	4.61%			
10.5	1,169	1,169	0	4.25%	3.93%			
6.9	1,183	1,183	0	7.51%	14.78%			
6.6	948	617	0	8.39%	10.81%			
6.0	736	506	0	7.58%	9.26%			
6.3	780	439	0	5.91%	6.55%			
13.8	4,020	4,020	0	4.88%	4.33%			
6.4	720	613	0	4.74%	2.28%	12.24%	Argentina	9.96%
5.0	16,937	9,756	0	4.57%	7.87%	12.26%	Argentina	4.39%
2.9	2,175	2,175	0	4.27%	6.52%	44.49%	Argentina	37.97%
2.3	8,981	4,171	0	4.09%	4.31%	38.66%	Argentina	34.35%
5.0	196	50	0	4.58%	3.29%			
6.2	2,270	2,270	2,270	2.21%	1.17%			
5.0	1,096	365	0	9.12%	8.64%			
7.0	1,500	128	0	7.20%	7.40%			
3.4	13,025	9,471	0	6.03%	4.55%	13.91%	Brazil	9.36%
2.9	12,144	11,385	0	4.17%	9.49%	15.03%	Brazil	5.54%
3.3	27,375	17,200	0	4.73%	11.47%	20.94%	Brazil	9.47%
9.2	825	806	0	8.20%	11.85%			
5.8	64	64	0	8.90%	9.62%			
5.0	598	598	0	7.81%	14.30%			
5.6	26,433	9,131	9,131	2.96%	8.39%	14.20%	Own curve	5.81%
5.0	265	215	0	8.53%	6.13%			
5.6	159	127	0	7.02%	8.97%			
7.0	1,114	557	0	6.35%	6.59%			
2.1	340	57	0	5.26%	11.24%			
5.9	10,538	7,637	7,637	2.41%	0.26%	7.12%	Hungary	6.86%
7.0	1,400	875	875	2.50%	0.71%			
4.7	552	552	0	6.71%	6.51%			
8.6	1,656	1,656	0	5.70%	5.97%			
5.7	8,338	3,669	0	4.11%	1.99%			
7.8	5,383	3,798	0	3.76%	4.69%			
6.7	3,638	3,638	0	3.55%	5.45%			
5.7	55	55	0	4.91%	5.66%			
5.0	23	9	0	5.03%	5.21%			
6.6	1,522	982	982	2.55%	0.76%			
8.3	1,400	1,400	0	8.05%	11.27%			
11.3	3,730	3,263	0	6.93%	8.11%			
5.6	12,070	8,758	0	4.73%	3.67%			

(continued)

TABLE 1 (*cont.*)
Overview of the Results

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
Arrangements		Timing						
Country	Facility	Approval	Expiry	1st disburs.	Last disburs.	1st repay.	Fully repaid	Grace period (years)
Mexico	SBA III	7/7/99	11/30/00	7/13/99	3/22/00	8/30/00	8/30/00	0.4
Morocco	SBA I	9/12/85	12/15/86	9/30/85	9/30/85	3/22/91	4/15/91	5.5
Morocco	SBA II	12/16/86	4/30/88	12/22/86	4/29/88	4/15/91	6/18/93	3.0
Morocco	SBA III	8/30/88	12/31/89	9/15/88	11/30/89	6/18/93	6/22/95	3.6
Morocco	SBA IV	7/20/90	3/31/91	7/25/90	10/23/90	6/22/95	7/2/96	4.7
Morocco	SBA V	1/31/92	3/31/93	2/5/92	2/5/92	7/2/96	2/4/97	4.4
Philippines	SBA I	12/14/84	6/13/86	12/28/84	7/31/85	12/9/85	6/26/89	0.4
Philippines	SBA II	10/24/86	8/23/88	10/31/86	8/31/88	6/26/89	8/30/93	0.8
Philippines	EFF I	5/23/89	2/19/91	5/30/89	12/27/89	11/29/93	12/23/99	3.9
Philippines	SBA III	2/20/91	3/31/93	2/25/91	3/31/93	5/24/94	3/30/98	1.1
Philippines	EFF II	6/24/94	3/31/98	6/29/94	4/1/98	12/23/99	12/29/06	1.7
Philippines	SBA IV	4/1/98	12/31/00	11/4/98	8/3/00	2/4/02	8/2/05	1.5
Poland	SBA I	2/5/90	3/4/91	2/9/90	9/14/90	5/7/93	2/28/95	2.6
Poland	EFF I	4/18/91	3/8/93	4/23/91	4/23/91	2/28/95	2/28/95	3.9
Poland	SBA II	3/8/93	4/8/94	3/30/94	3/30/94	7/17/95	7/17/95	1.3
Poland	SBA III	8/5/94	3/4/96	10/31/94	10/31/94	7/17/95	7/17/95	0.7
Romania	SBA I	4/11/91	4/10/92	4/16/91	11/18/91	7/15/94	5/17/96	2.7
Romania	SBA II	5/29/92	3/28/93	6/3/92	11/19/92	5/17/96	12/2/98	3.5
Romania	SBA III	5/11/94	4/22/97	5/16/94	12/27/95	12/2/98	9/26/00	2.9
Romania	SBA IV	4/22/97	5/21/98	4/25/97	9/17/97	9/26/00	9/16/02	3.0
Romania	SBA V	8/5/99	2/28/01	8/12/99	6/12/00	11/11/02	12/2/04	2.4
Romania	SBA VI	10/31/01	10/15/03	11/5/01	10/17/03	12/2/04	10/17/07	1.1
Romania	SBA VII	5/4/09	5/3/11	5/6/09	1/11/11	8/6/12	12/15/15	1.6
Russia	SBA I	7/28/99	12/27/00	11/23/92	12/18/92	2/22/96	12/17/97	3.2
Russia	SBA II	3/26/96	3/26/99	4/14/95	2/12/96	7/13/98	2/9/01	2.4
Russia	EFF I	3/26/96	3/26/99	3/29/96	6/30/98	9/28/00	1/31/05	2.2
Russia	EFF+SRF	4/11/95	3/26/96	7/22/98	7/23/98	7/21/99	1/31/05	1.0
Russia	SBA III	8/5/92	1/4/93	7/30/99	7/30/99	10/29/02	7/29/04	3.3
Serbia	SBA I	6/11/01	5/31/02	6/14/01	5/16/02	3/12/04	5/15/06	1.8
Serbia	EFF I	5/14/02	2/28/06	5/17/02	2/8/06	6/30/06	3/15/07	0.4
Serbia	SBA II	1/16/09	4/15/11	5/19/09	12/27/10	8/17/12	12/25/15	1.6
South Korea	SBA I	7/12/85	3/10/87	8/1/85	6/27/86	10/25/88	12/15/88	2.3
South Korea	SBA+SRF	12/4/97	12/3/00	12/5/97	12/17/98	12/18/98	8/23/01	0.0
Thailand	SBA I	6/14/85	12/31/86	6/28/85	12/13/85	3/14/86	2/28/90	0.2
Thailand	SBA II	8/20/97	6/19/00	8/25/97	6/21/99	11/22/00	7/31/03	1.4
Turkey	SBA I	7/8/94	3/7/96	7/13/94	9/26/95	10/10/97	9/25/00	2.0
Turkey	SBA+SRF	12/22/99	2/4/02	12/29/99	12/3/01	12/27/01	5/17/05	0.1
Turkey	SBA II	2/4/02	2/3/05	2/7/02	8/3/04	5/17/05	2/13/08	0.8
Turkey	SBA III	5/11/05	5/10/08	5/13/05	5/22/07	2/13/08	5/14/13	0.7
Ukraine	SBA I	4/7/95	4/6/96	4/12/95	10/4/95	7/11/98	3/18/00	2.8
Ukraine	SBA II	5/10/96	2/23/97	5/15/96	2/19/97	3/18/00	6/18/01	3.1

TABLE 1 (*cont.*)
Overview of the Results

(10)	(11)	(12)	(13)	(14)	(15)	(16)	(17)	(18)
	Credit volume (in SDR mln)			Funding costs (IRR*)				
Maturity (years)	Approved	Drawn	Outst.	IMF (SDR)	IMF (USD)	Capital market (USD)	Reference (e.g. EMBI)	Subsidy (USD*)
1.1	3,103	1,940	0	6.61%	4.68%	9.52%	Mexico	4.84%
5.5	200	10	0	7.77%	15.98%			
6.5	230	230	0	8.52%	12.04%			
6.8	210	210	0	8.81%	9.07%			
5.9	100	48	0	7.82%	10.33%			
5.0	92	18	0	6.65%	7.26%			
4.5	615	403	0	5.62%	18.67%			
6.8	198	198	0	8.02%	10.15%			
10.6	661	236	0	7.39%	8.29%			
7.1	334	334	0	5.92%	6.67%			
12.5	791	791	0	4.02%	4.01%	9.87%	Asia	5.86%
6.7	1,021	783	0	3.95%	3.98%	10.23%	Philippinies	6.25%
5.1	545	358	0	7.08%	8.85%			
3.9	1,224	77	0	6.44%	7.00%			
1.3	476	357	0	5.60%	10.67%			
0.7	333	283	0	6.99%	16.74%			
5.1	381	318	0	6.19%	6.58%			
6.5	314	262	0	5.48%	5.52%			
6.4	320	94	0	4.88%	4.82%			
5.4	302	121	0	4.80%	2.32%			
5.3	400	140	0	3.81%	4.42%			
6.0	300	300	0	3.39%	7.56%			
6.6	11,443	10,569	10,569	2.80%	1.93%			
5.1	719	719	0	4.55%	5.03%			
5.8	4,313	4,313	0	4.43%	3.04%			
8.8	6,901	4,336	0	3.91%	3.65%			
6.5	6,306	1,443	0	3.65%	5.72%	16.80%	Russia	11.08%
5.0	3,300	471	0	4.03%	3.55%	36.44%	Russia	32.89%
4.9	200	200	0	2.54%	7.87%			
4.8	650	650	0	3.84%	4.85%			
6.6	2,619	1,321	1,321	1.39%	0.46%	9.34%	Serbia	8.89%
3.4	280	160	0	8.19%	20.25%			
3.7	15,500	14,413	0	6.06%	4.59%	8.34%	Asia	3.76%
4.7	400	260	0	8.04%	18.50%			
5.9	2,900	2,500	0	4.48%	2.18%	7.41%	Asia	5.23%
6.2	611	461	0	4.65%	4.18%			
5.4	15,038	11,739	0	4.24%	6.05%	10.81%	Turkey	4.76%
6.0	12,821	11,914	0	1.33%	5.35%	11.28%	Turkey	5.93%
8.0	6,662	6,662	3,404	4.12%	4.13%	7.47%	Turkey	3.35%
4.9	997	539	0	4.35%	3.11%			
5.1	598	598	0	4.59%	2.26%			

(continued)

TABLE 1 (*cont.*)
Overview of the Results

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
Arrangements		Timing						
Country	Facility	Approval	Expiry	1st disburs.	Last disburs.	1st repay.	Fully repaid	Grace period (years)
Ukraine	SBA III	8/25/97	8/24/98	9/25/97	2/2/98	6/18/01	11/29/02	3.4
Ukraine	EFF I	9/4/98	9/3/02	9/10/98	9/25/01	3/7/03	9/9/09	1.4
Ukraine	SBA IV	11/5/08	7/27/10	11/7/08	7/30/09	2/7/12	4/30/14	2.5
Ukraine	SBA V	7/28/10	12/27/12	7/30/10	12/27/10	4/30/14	12/25/15	3.3
Venezuela	EFF I	6/23/89	3/22/93	6/28/89	12/18/90	10/30/91	12/12/98	0.9
Venezuela	SBA I	7/12/96	7/11/97	7/17/96	7/17/96	10/16/99	7/16/01	3.2

*EUR in the case of Greece's SBA. Column (9) reports the grace period, which is the time between the last disbursement, column (6) and the first repayment, column (7). Column (14) reports the yield-to-maturity in SDR terms and column (15) in USD and EUR terms, respectively. Column (16) reports the capital market reference yield-to-maturity and column (17) indicates which reference base was used (e.g., country-specific EMB Sub-index or the own secondary market curve).

Source: Own calculations based on data underlying the present work's analysis.

points for maturity mismatch, the average net subsidy is at least 9 percentage points.

The subsidies arise for essentially two reasons. First, the borrowing governments are charged an interest rate for highly creditworthy borrowers. Second, they are charged a three-month interest rate for loans of three to seven years.

The Cancellation and Resumption of IMF Loans

The IMF imposes policy conditions on its borrowers. Conditionality is the main price of entering an arrangement (Vaubel 1991: 233–35), but it does not eliminate the subsidy. The announcement of policy commitments does not enable the borrowing governments to borrow at IMF interest rates in the world capital market (as our calculations show). The IMF monitors compliance. If a government does not honor its commitment, the Fund ought to terminate the arrangement. Otherwise the commitment will not be credible, and moral hazard will increase.

As Table 2 shows, the IMF has cancelled 41 arrangements between 1992 and 2012. Of these, only five were not followed by a

TABLE 1 (*cont.*)
Overview of the Results

(10)	(11)	(12)	(13)	(14)	(15)	(16)	(17)	(18)
	Credit volume (in SDR mln)			Funding costs (IRR*)				
Maturity (years)	Approved	Drawn	Outst.	IMF (SDR)	IMF (USD)	Capital market (USD)	Reference (e.g. EMBI)	Subsidy (USD*)
5.2	399	181	0	4.68%	2.20%			
11.0	1,920	1,193	0	3.86%	5.14%			
5.5	11,000	7,000	7,000	2.24%	0.37%	22.48%	Ukraine	22.11%
5.4	10,000	2,250	2,250	2.47%	2.69%	6.52%	Ukraine	3.83%
9.5	3,857	2,006	0	6.27%	7.46%			
5.0	976	350	0	4.96%	2.50%	13.00%	Venezuela	10.49%

new arrangement. Thirty governments received a new IMF loan within one year, 21 within one day.

Conclusion

Why does the IMF subsidize its credits and why does it so rarely sustain its sanctions against noncompliers?

The International Monetary Fund is a bureaucracy. Bureaucrats want a large budget (Niskanen 1971). The IMF finances its operations from the margin which it earns on its lending. The more it lends, the larger its income. If there is not enough demand for its credits, it cannot finance its staff and is pressed to reduce it. This is what happened in 2007. The interest subsidies raise the demand for IMF credits. They are not borne by the bureaucracy but by the net lending countries, which have to supply their currencies.

The demand for IMF credit also depends on the strictness of its policy conditions. If they are harsh and if noncompliance is sanctioned, fewer governments will apply for IMF credits. The Fund would have less income and might even have to dismiss staff. The borrowing governments know that the Fund, like most bureaucracies, aims to maximize income and that its incentives are biased toward leniency. That is why they are prepared to enter into far-reaching policy commitments, knowing that apart from the "prior conditions" few of them will have to be taken seriously.

TABLE 2
International Monetary Fund, Cancellations and Follow-Up Programs, 1991–2010

Year of Approval	Country	Approval Date	Envisaged End Date	Actual End Date (Cancelled)	Approval Date of New Arrangement	Waiting Period (Days)
1991	Argentina	29.07.1991	28.07.1992	30.03.1992	31.03.1992	1
1993	Vietnam	10.06.1993	31.12.1994	11.11.1994	11.11.1994	0
1993	Pakistan	16.09.1993	15.09.1994	22.02.1994	22.02.1994	0
1994	Senegal	03.02.1994	03.01.1995	29.08.1994	29.08.1994	0
1994	Ecuador	11.05.1994	11.04.1996	11.12.1995	19.04.2000	1591
1994	Jordan	25.05.1994	02.09.1996	09.02.1996	09.02.1996	0
1994	Algeria	27.05.1994	26.05.1995	22.05.1995	22.05.1995	0
1995	Haiti	08.03.1995	07.03.1996	07.03.1996	18.10.1996	225
1995	Georgia	28.06.1995	31.05.1996	28.02.1996	28.02.1996	0
1996	Russian Fed.	26.03.1996	25.03.1999	26.03.1999	28.07.1999	124
1996	Russian Fed.	26.03.1996	25.03.2000	26.03.1999	28.07.1999	124
1996	Moldava	20.05.1996	19.05.1999	19.05.2000	21.12.2000	216
1996	Benin	28.08.1996	27.08.1999	10.07.2000	17.07.2000	7
1997	Croatia	12.03.1997	03.11.2000	10.10.1997	19.03.2001	1256
1997	Indonesia	05.11.1997	25.08.1998	25.08.1998	25.08.1998	0
1997	Panama	12.12.1997	09.12.2000	20.06.2000	30.06.2000	10
1998	Indonesia	25.08.1998	05.11.2000	04.02.2000	04.02.2000	0
1999	Turkey	22.12.1999	21.12.2002	04.02.2002	04.02.2002	0

2000	Argentina	10.03.2000	09.03.2003	23.01.2003	24.01.2003	1
2000	Ecuador	19.04.2000	18.04.2001	31.12.2001	21.03.2003	445
2000	Macedonia (FYR)	29.11.2000	28.11.2003	22.11.2001	30.04.2003	524
2000	Macedonia (FYR)	18.12.2000	28.11.2003	22.11.2001	30.04.2003	524
2000	Malawi	21.12.2000	20.12.2003	15.04.2004	05.08.2005	477
2002	Dominica	28.08.2002	27.08.2003	19.12.2003	19.12.2003	0
2003	Colombia	15.01.2003	14.01.2005	02.05.2005	02.05.2005	0
2003	Mauritania	18.07.2003	17.07.2006	07.11.2004	18.12.2006	771
2003	Dominican Rep.	29.08.2003	28.08.2005	31.01.2005	31.01.2005	0
2005	Iraq	23.12.2005	22.03.2007	18.12.2007	19.12.2007	1
2006	Mauritania	18.12.2006	17.12.2009	01.11.2009	15.03.2010	134
2008	Ukraine	05.11.2008	04.11.2010	27.07.2010	28.07.2010	1
2008	Armenia	17.11.2008	16.11.2011	06.03.2009	06.03.2009	0
2009	El Salvador	16.01.2009	31.03.2010	16.03.2010	17.03.2010	1
2009	Armenia	06.03.2009	05.07.2011	27.06.2010	28.06.2010	1
2009	Cote d'Ivoire	27.03.2009	26.03.2012	23.06.2011	04.11.2011	134
2010	Greece	09.05.2010	08.05.2013	14.03.2012	15.03.2012	1
2010	Yemen Rep.	30.07.2010	29.07.2013	04.04.2012	04.04.2012	0
1999	Russian Fed.	28.07.1999	27.12.2000	27.12.2000	—	NA
2001	Azerbaijan	06.07.2001	05.07.2004	04.07.2005	—	NA
2003	Ecuador	21.03.2003	20.04.2004	20.04.2004	—	NA
2003	Argentina	20.09.2003	19.09.2006	05.01.2006	—	NA
2005	Uruguay	08.06.2005	07.06.2008	27.12.2006	—	NA

SOURCES: IMF MONA database and country reports.

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