



Sovereign Defaults Series

7 OCTOBER 2013

The Aftermath of Sovereign Defaults

This compendium brings together the recent research reports of the Sovereign Defaults Series, which investigates credit-related themes pertaining to the aftermath of government defaults and restructurings. The series combines empirical analysis of historical sovereign defaults and recovery rates with "bottom-up" case study approach to provide unique perspective on the features and the aftermath of sovereign debt exchanges. Our analysis scrutinizes the historical record and draws out insights for the current debt crisis.

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This report analyzes the modern history of sovereign bond defaults, focusing on the features of the debt restructurings and the losses experienced by investors. For all exchanges in our sample, the average loss, as measured by trading prices when available and the net present value of cash flows otherwise, was 47% – comparable to the average loss in global corporate defaults.

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Analyzing distressed exchanges on sovereign bonds since 1997, we find that sovereign bond restructurings provide liquidity relief but often fail to provide solvency relief as they are frequently not accompanied by a reduction in debt levels. The high rate of re-default explains why ratings often remain low, in the Caa-C rating range, following sovereign distressed debt exchanges.

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Despite the ongoing discussion in the capital markets and the extensive theoretical literature on the subject, empirical evidence on sovereign debt litigation and the effect of CACs is scarce. We survey the sovereign bond exchanges since 1997 and examine the role of holdout creditors, CACs, and exit consent clauses in them. We find that sovereign bond restructurings have generally been resolved quickly, without severe creditor coordination problems, and involving little litigation. A high level of participation in sovereign bond restructuring offers has been the norm.

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Analyzing market re-access and creditworthiness after a sovereign bond restructuring, we find that market re-access remained impaired for many years after a default: on average, sovereign governments remained out of international capital markets for 5.6 years after default. The length of market exclusion was not driven by an inability to resolve the default, but by the loss imposed on investors during the debt restructuring and by the speed with which the economy recovered, fiscal and debt outcomes improved, external vulnerabilities subsided, and political stability was restored.

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Many countries enter support programs when they are in distress and support is often a last-resort crisis measure. Assessing the extent to which participation in an IMF support program has been correlated with the presence of elevated long-term credit vulnerabilities, we find that, during the 1983-2012 period, from all sovereigns that entered IMF programs, 16.4% defaulted over a five-year horizon. This historical default rate is consistent with Moody's practice of generally maintaining non-investment ratings on countries in support programs.

Investor Losses in Modern-Era Sovereign Bond Restructurings

Originally published 7 August 2012

Summary

This report analyzes the modern history of sovereign bond defaults, focusing on the features of the debt restructurings and the losses experienced by investors. The report complements our 2010 study on the causes of sovereign defaults,¹ and is the first in a series of special comments investigating the aftermath of sovereign defaults.² We have adopted a case study approach to analyzing the modern-era sovereign bond defaults since 1997. Our findings include:

- » There have been 30 distressed exchanges on sovereign bonds since 1997, by 22 Moody's-rated and unrated sovereigns.
- » Sovereign bond defaults typically started as missed payment and involved a sequence of default events before being resolved via a distressed exchange.
- » When the initial debt exchanges were small in relation to total debt, they were followed by further exchanges of private or official debt, even when haircuts in the initial exchange were large.
- » Thirty-seven percent of the 30 sovereign distressed exchanges were followed by further default events. This is not dissimilar to the experience in the global corporate sector, where historically about 41% of distressed exchanges resulted in re-default events. These high rates of re-default explain why ratings often remain low, in the Caa-C rating range, following distressed exchanges in both the sovereign and corporate sectors.
- » For all exchanges in our sample, the average loss, as measured by trading prices where available and the net present value of cash flows otherwise, was 47% -- comparable to the average loss in global corporate defaults. The standard deviation around the average loss was large at 26%, with losses varying from 5% to 95%, but comparable to the experience in the global corporate sector.
- » Maturity extension was a much more common feature than imposing nominal haircuts on the principle: the terms of the restructuring for all but one debt exchange included maturity extension, 81% involved reduction in interest rates, while 48% involved nominal haircuts.
- » In nominal amount, the Greek bond exchange of March 2012 represented the largest sovereign bond exchange in history, with US\$273bn of debt caught in the exchange. The amount far surpassed the US\$144bn of the Argentinean debt exchanges and the US\$39bn of the Russian bond exchanges.
- » The Greek debt exchange also imposed one of the largest investor losses in history. With a trading prices-implied loss of 76%, the Greek exchange implied larger losses than the Argentinean external debt exchange of 2005.
- » Interestingly, in the overall sample, the loss in sovereign restructurings does not seem to correlate well with the size of the debt exchange, but is somewhat correlated with the level of the country's debt-to-GDP ratio.

¹ [The Causes of Sovereign Defaults: Ability to Manage Crises Not Merely Determined by Debt Levels](#), 2 November 2010.

² The Sovereign Defaults Series will investigate topics related to the aftermath of sovereign defaults, including questions such as the extent of debt relief provided by sovereign debt exchanges, the role of official sector debt, and the evidence on international market re-access after a default.

- » Losses have depended on a number of factors, including the economic conditions at the time of default, the debt maturity structure, the features of the bond contracts, the presence of official debt, the involvement of multinationals, and the concentration of debt holders.

I. Sovereign Defaults Typically Started as Missed Payments and Involved a Sequence of Default Events

There have been 24 sovereign defaults on government bonds since 1997

In this report we analyze the history of modern era sovereign bond defaults, starting after the Asian financial crisis of 1997-98. The modern era of sovereign defaults reflected a general switch in sovereign financing from predominantly foreign currency-denominated bank loan financing in the 1970s and 1980s to foreign and local currency bond financing in the 1990s and the current decade. Local currency bond financing in emerging markets rose markedly over the second half of the 1990s and was spurred by the development of domestic capital markets – in terms of both increased volume and liquidity and increased transparency – and by improved quality of economic policies. As a result, the share of defaults on local currency bonds in the period since 1997 has risen, to be roughly equal to the share of defaults on foreign currency bonds.³

Since 1997, there have been 24 sovereign defaults on government bonds, including both events rated by Moody's at the time as well as unrated defaults. Nine of the defaults were on both local and foreign currency government bonds, 8 were on local currency government bonds and 7 on foreign currency government bonds.

The majority of sovereign bond defaults started as missed payments

As Exhibit 1 shows, 67% of the defaults started as 'missed payments' – that is, the initial default event was a missed or delayed disbursement of a contractually obligated interest or principal payment, as defined in credit agreements and indentures (excluding missed payments cured within a contractually allowed grace period).

Further 29% of defaults started as 'distressed exchanges' where the issuer offered creditors a new or restructured debt, or a new package of securities, cash or assets, that amounted to a diminished financial obligation relative to the original obligation (i.e., it subjected the debt holder to an economic loss).

EXHIBIT 1

Sovereign Bond Defaults Since 1997

Initial Default Date	Country (NR=not rated at the time)	Sequence of Default Events (DE=Distressed Exchange)
1997	Mongolia (NR)	Missed payments
1998	Venezuela	Missed payments
Aug-1998	Russia	Missed payments, DE, Missed payments, DE, DE
Sep-1998	Ukraine	DE, DE, DE, Missed payment, DE, Missed payments, DE
Jul-1999	Pakistan	Grace period missed payment, Missed payment, DE
Aug-1999	Ecuador	Missed payments, DE
Nov-1999	Turkey (NR)	Imposed tax
Mar-2000	Cote d'Ivoire (NR)	Grace period missed payments, Missed payment, DE

³ See [Sovereign Defaults and Interference: Perspectives on Government Risks](#), August 2008 and [Narrowing the Gap – a Clarification of Moody's Approach to Local versus Foreign Currency Government Bond Ratings](#), Sovereign Methodology Update, February 2010.

EXHIBIT 1

Sovereign Bond Defaults Since 1997

Initial Default Date	Country (NR=not rated at the time)	Sequence of Default Events (DE=Distressed Exchange)
Nov-2001	Argentina	Debt swap, DE, Missed payment, Pesoization, DE, Re-open DE
Jun-2002	Moldova	Grace period missed payment, Missed payment, DE
Jan-2003	Paraguay (NR)	Missed payments, DE
May-2003	Uruguay	DE
Jul-2003	Nicaragua	DE, DE
Jul-2003	Dominica (NR)	Missed payments, DE
H2-2004	Cameroon (NR)	Missed payment, DE
Dec-2004	Grenada (NR)	Missed payments, DE
Apr-2005	Dominican Republic	Grace period missed payments, DE
Dec-2006	Belize	Missed payment, DE
Jul-2008	Seychelles (NR)	Missed payments, DE
Dec-2008	Ecuador	Missed payments, DE
Feb-2010	Jamaica	DE
Jan-2011	Cote d'Ivoire (NR)	Missed payment, DE, Developing
Nov-2011	St. Kitts and Nevis (NR)	Missed payment, DE, Debt-land swap
Mar-2012	Greece	Retroactive insertion of CACs, DE, Developing

Source: Moody's.

Note: Blue shading denotes defaults starting as distressed exchanges.

In addition, four of the defaults, namely the cases of Pakistan in 1999, Cote d'Ivoire in 2000, Moldova in 2002 and the Dominican Republic in 2005, started as 'grace period missed payments' where the initial missed payment was cured within the contractually-allowed grace period. Subsequently, however, the sovereign either missed another bond payment or announced a distressed exchange.

Irrespective of how they start, sovereign defaults are typically resolved via a distressed exchange. It is noteworthy, however, that almost three quarters of defaults involved a sequence of default events: the countries experienced a series of missed payments and/or distressed exchanges on different types of debt instruments (and sometimes even on the same debt instruments). It was rare that defaults were resolved quickly and in one round.

Risk of re-default frequently remained high after a distressed exchange

Further, even within the time span of this study, there were two instances of serial defaults – by Ecuador and Cote d'Ivoire. Ecuador became the first country to default on Brady bonds in 1999. It then defaulted again in 2008, on the 2012 and 2030 global bonds issued as part of the previous debt exchange, following a government announcement that the debt was considered “illegal” and “illegitimate”. Similarly, Cote d'Ivoire defaulted in 2000, missing payments on its Brady bonds as a result of the civil conflict and the coup d'etat at the time. After being in default for a decade, the Brady bonds were restructured in 2010. In 2011, however, Cote d'Ivoire missed the interest payments on the same Eurobond issued as part of the 2010 debt exchange.

In addition, many of the countries included in this study previously defaulted on bank loans during the 1980s, including Argentina, Venezuela and Uruguay. Likewise, recent negotiations in Belize around

potential new restructuring of the ‘superbond’ issued as part of the 2007 debt exchange indicate the possibility of further serial defaults.⁴

It is worth pointing out the contrast in default resolution via a distressed exchange and via a bankruptcy. While the vast majority of corporate defaults are resolved via bankruptcy, this option is not available to sovereign issuers and sovereign defaults are typically resolved via a distressed exchange. In particular, many corporate bankruptcies result in creditors being given equity – creditors are therefore willing to deleverage the entity on exit from bankruptcy. In distressed exchange situations, however, creditors typically deleverage the entity to the smallest possible degree that allows current debt service to be paid. As a result, re-default risk often remains high post distressed exchange. For example, in our sample, 37% of the 30 distressed exchanged were followed by further default events. Consistent with the re-default events that we observe for sovereign issuers, historically re-default risk after a distressed exchange has been high for corporate issuers as well: over the 1983-2011 period, as much as 41% of global corporate distressed exchanges have been followed by further re-default events.⁵ These high rates of re-default explain why ratings often remain low, in the Caa-C rating range, following distressed exchanges in both the sovereign and corporate sectors.

II. Maturity Extensions Were Much More Common in Sovereign Bond Restructurings than Principal Haircuts

Sovereign debt exchanges typically involve three transformations of the debt: i) extension of the maturity of the debt instruments, ii) reduction in the coupon, and iii) nominal haircut on the principal.

Maturity extensions are a much more common feature of sovereign bond exchanges than haircuts on the nominal face value of the bonds. As Exhibit 2 shows, from the 21 sovereign bond restructurings since 1997,⁶ all but one involved maturity extension. Further, 81% involved reduction in the coupon, and 48% of exchanges involved nominal haircut on the principal.

The largest nominal haircuts were imposed as part of the Argentinean debt exchange in February 2005 (66%), the Ecuador debt buyback in May 2009 (65%) and the Greek debt exchange of March 2012 (53.5%). The debt exchange of the Seychelles in January 2010 and St. Kitts and Nevis of March 2012 also involved 50% nominal haircuts (Exhibit 3 below presents further details).

EXHIBIT 2

Summary of the Terms of Modern-Era Sovereign Bond Exchanges

Initial Default Date	Country (NR=not rated at the time)	Terms of Distressed Exchange		
		Maturity Extension	Reduction in Coupon	Principal Haircut
Aug-1998	Russia	yes	yes	yes
Sep-1998	Ukraine	yes	yes	yes
Jul-1999	Pakistan	yes	yes	no
Aug-1999	Ecuador	yes	yes	yes
Mar-2000	Cote d'Ivoire (NR)	yes	yes	yes
Nov-2001	Argentina	yes	yes	yes
Jun-2002	Moldova	yes	yes	no

4 See [Belize Prime Minister Suggests Changes to Bond Payments, a Credit Negative](#), 6 February 2012.

5 Statistic is based on corporate family level analysis. Over the 1983-2011 period, 17% of initial corporate default events were distressed exchanges, 32% bankruptcy filings and 51% payment defaults.

6 Three of the sovereign defaults, Mongolia in 1997, Venezuela in 1998 and Turkey in 1999, did not involve a restructuring.

EXHIBIT 2

Summary of the Terms of Modern-Era Sovereign Bond Exchanges

Initial Default Date	Country (NR=not rated at the time)	Terms of Distressed Exchange		
		Maturity Extension	Reduction in Coupon	Principal Haircut
Jan-2003	Paraguay (NR)	yes	yes	no
May-2003	Uruguay	yes	no	no
Jul-2003	Nicaragua	yes	yes	no
Jul-2003	Dominica (NR)	yes	yes	yes
H2-2004	Cameroon (NR)	yes	n.a.	n.a.
Dec-2004	Grenada (NR)	yes	yes	no
Apr-2005	Dominican Republic	yes	no	no
Dec-2006	Belize	yes	yes	no
Jul-2008	Seychelles (NR)	yes	yes	yes
Dec-2008	Ecuador	no	no	yes
Feb-2010	Jamaica	yes	yes	no
Jan-2011	Cote d'Ivoire (NR)	yes	yes	no
Nov-2011	St. Kitts and Nevis (NR)	yes	yes	yes
Mar-2012	Greece	yes	yes	yes

Source: Moody's.

The only example of a debt exchange that did not involve some type of maturity extension was the case of Ecuador. In November 2008 and in February 2009, Ecuador defaulted on its 2012 and 2030 global bonds, following the government's announcement that it considered the debt "illegal" and "illegitimate". The default was atypical in that it occurred in the context of relative macroeconomic strength, despite some downturn in commodity prices. The default resolution was also not a typical debt exchange, but a buyback transaction, during which the government bought back the defaulted bonds at a price of US\$0.35 per dollar of outstanding principal.

III. Investor Losses in Sovereign Restructurings Have Often Been Very Large

The average loss for sovereign bond exchanges was 47%

The losses imposed on creditors in sovereign bond restructurings have frequently been very large. Exhibit 3 shows that the average loss on sovereign bond restructurings since 1997, measure by trading prices where available and the net present value of cash flows otherwise, was 47.2%. This is comparable to the average loss observed in the global corporate sector in the 1982-2011 period: specifically, the average loss on sovereign bonds has been very similar to the average historical loss on senior unsecured corporate bonds as measured by ultimate recoveries (51.5%) and slightly lower than the historical loss on senior unsecured corporate bonds as measured by trading prices (63.2%).⁷

Further, the variation around the average sovereign loss has been extremely large – losses have varied from as low as 5% to as high as 95%. Indeed, the standard deviation of losses on sovereign bonds was 26.7%. The variation is comparable to the variation of losses for corporate defaults – the historical standard deviation of

⁷ See [Annual Default Study: Corporate Default and Recovery Rates, 1920 – 2011](#), February 2012.

global corporate family recovery rates as measured by ultimate recoveries was 28.7% - however, the size of the sample of sovereign bond defaults is much more limited compared to the global corporate sample.

Our preferred method of estimating losses at default is to use trading prices where available. We report the loss implied by the average issuer-weighted trading price on sovereign's bonds 30-days after default or, in cases of distressed exchanges, the average price one day before the closing of the distressed exchange. Moody's Sovereign Default Study provides more detail on the sovereign bond prices used to estimate the recovery and loss rates.⁸ In cases where trading prices are not available, an alternative method of estimating losses is based on the ratio of the net present value of the new securities to the face value of the old securities, obtained by discounting the promised cash flows using market yields at the time of the exchange. (Please see the notes to Exhibit 3 for more details.) As net present value loss estimation can be sensitive to the yield employed, the estimates should be taken as approximate.

Losses have varied from 5% to 95%

The largest losses of 90%-95% were experienced by investors during the Russian debt exchanges in 1999-2000. These were followed by the 71-83% losses in the Argentinean debt exchanges in 2005 and 2001, the 82% loss in the Cote d'Ivoire Brady bond exchange of 2010, and the 79% loss in the Greek debt exchange of March 2012. Two other exchanges also involved losses of 70% or more: Ecuador in 2009 (72%) and the Seychelles in 2010 (70%). All these cases incorporated a nominal haircut on the principal as part of the terms of the restructuring.

Further, given the serial defaults of Cote d'Ivoire and Ecuador where the second default was on instruments issued as part of the first debt exchange, the cumulative loss suffered by the initial investors was 87% in the case of Cote d'Ivoire and 88% in the case of Ecuador.

On the other hand, the lowest losses were experienced during the 2005 debt exchange of the Dominican Republic (about 5%), Paraguay in 2004 (about 8%), and Jamaica in 2010 (10%). The terms of these three debt exchanges incorporated maturity extension and reduction in interest rate, but did not include a haircut on the principal.

We do not find a particular trend in the size of the losses over time. Separating the sample of sovereign bond exchanges into three equal time periods, we find that the average loss over 1998-2002 was 51.0%, the average loss over 2003-2007 was 32.9% and the average loss over the 2008-2012 period was 50.4%, comparable to the loss in the first time period. The lower average loss level in the intermediate period was due to the lower losses in the Caribbean restructurings, but the most recent debt exchanges have reversed this trend.

EXHIBIT 3

Debt in Exchange and Losses in Sovereign Bond Restructurings

Initial Default Date	Country (NR=not rated at the time)	Distressed Exchange Details	Distressed Exchange Date	Debt in Exchange			Loss (%)		
				In US\$ billion	In % of total Debt	In % of GDP	Nominal Haircut [1]	Loss [2]	Loss as Measured By
Aug-1998	Russia	LC debt (GKO and OFZ)	May-1999	8.3	4.5	3.1	29 [3]	46 res., 62 non-res.; with devaluation 95	NPV of cash flows
	Russia	FC debt (MIN FIN III)	Feb-2000	1.3	0.7	0.7		75	trading prices
	Russia	FC debt (PRIN and IAN)	Aug-2000	29.1	16.4	16.3	36	90	trading prices

⁸ See [Sovereign Default and Recovery Rates, 1983-2012H1](#), July 2012.

EXHIBIT 3

Debt in Exchange and Losses in Sovereign Bond Restructurings

Initial Default Date	Country (NR=not rated at the time)	Distressed Exchange Details	Distressed Exchange Date	Debt in Exchange			Loss (%)		
				In US\$ billion	In % of total Debt	In % of GDP	Nominal Haircut [1]	Loss [2]	Loss as Measured By
Sep-1998	Ukraine	LC T-bills held domestically	Sep-1998	4.5	30.0	9.0	34	18	NPV of cash flows
	Ukraine	LC T-bills held by non-residents	Sep-1998	0.4	2.8	0.8		59	NPV of cash flows
	Ukraine	FC Chase-Manhattan loan	Oct-1998	0.1	0.7	0.2		31	NPV of cash flows
	Ukraine	FC ING bond and Merrill Lynch bond	Aug-1999	0.4	2.0	1.0	45	38	NPV of cash flows
	Ukraine	FC Eurobonds	Mar-2000	1.6	8.3	5.1	5	31	trading prices
Jul-1999	Pakistan	Eurobonds	Dec-1999	0.6	1.2	0.9		48	trading prices
Aug-1999	Ecuador	External private debt (Eurobonds and Brady bonds) and FC domestic bonds	Aug-2000	7.0	49.5	41.5	40	56 external, 9 domestic	trading price external, NPV domestic
Mar-2000	Cote d'Ivoire (NR)	Brady bonds	Apr-2010	2.8	18.7	12.4	20	82	trading prices
Nov-2001	Argentina	Domestic debt	Nov-2001	64.4	49.6	22.6		83	trading prices
	Argentina	External debt	Feb-2005	79.7	41.7	52.0	66	71	trading prices
Jun-2002	Moldova	Eurobond	Oct-2002	0.04	3.2	2.7		40	trading prices
Jan-2003	Paraguay (NR)	Domestic debt due in 2003-06	Jul-2004	0.1	6.5	2.6		8	NPV of cash flows
May-2003	Uruguay	All tradable FC securities with maturity over 12 months (external and domestic)	May-2003	5.4	56.8	39.6		34	trading prices
Jul-2003	Nicaragua	CENI bonds FC-denominated payable in LC	Jul-2008	0.3	12.5	5.4		51	NPV of cash flows
Jul-2003	Dominica (NR)	LC bonds (domestic and external)	Jun-2004	0.1	44.5	42.4	30	53	NPV of cash flows
H2-2004	Cameroon (NR)	Domestic debt	H1-2005	1.0	10.5	6.5		n.a.	n.a.
Dec-2004	Grenada (NR)	Global bond and domestic debt	Nov-2005	0.3	65.1	48.9		35	trading prices
Apr-2005	Dominican Rep.	International bonds	May-2005	1.1	16.7	5.1		5	trading prices
Dec-2006	Belize	Private external debt	Feb-2007	0.5	51.6	45.8		24	trading prices
Jul-2008	Seychelles (NR)	External debt	Jan-2010	0.3	34.2	37.2	50	70	trading prices
Dec-2008	Ecuador	Global bonds	May-2009	3.2	25.3	5.9	65	72	trading prices
Feb-2010	Jamaica	Domestic debt	Feb-2010	7.9	56.5	63.7		10	trading prices
Jan-2011	Cote d'Ivoire (NR)	Treasury bills (short-term)	Dec-2011	1.3	8.5	5.4		5	NPV of cash flows
	Cote d'Ivoire (NR)	Eurobond coupon	in progress	0.1	0.6	0.4		25	trading prices
Nov-2011	St. Kitts and Nevis (NR)	Domestic bonds and external debt	Mar-2012	0.1	12.8	19.7	50	62	NPV of cash flows
	St. Kitts and Nevis (NR)	Domestic loans (debt-land swap)	Apr-2012	0.3	30.3	46.6		n.a.	n.a.
Mar-2012	Greece	Greek and foreign law bonds	Mar-2012	273.4	59.4	98.2	54	76	trading prices
Exchange Average				17	24	21		47	
Country Average				24	34	31			

Source: Moody's, IMF country reports, and Sturzenegger and Zettelmeyer, *Haircuts: Estimating Investor Losses in Sovereign Debt Restructurings, 1998-2005*, IMF Working Paper 05/137, July 2005. See notes below for sources on loss estimates.

Notes:

[1] Largest nominal haircut shown if new instruments had different haircuts.

[2] Loss measured by trading prices where available and the net present value of promised cash flows otherwise: NPV loss = 1 - (NPV of cash flows of the new instrument) / (Face value of old instrument), discounted by the market-implied interest rate. Source for trading prices-implied loss: Moody's, [Sovereign Default and Recovery Rates, 1983-2012H1](#), July 2012. Source for NPV loss: Moody's and Sturzenegger and Zettelmeyer (2005) (for Russia, Ukraine, Pakistan, Ecuador, Argentina and Uruguay).

[3] Holders of GKO or OFZs had their scheduled payments discounted to 19 August 1998 at the rate of 50% per annum. Based on the resulting adjusted nominal claims, they then received a package of cash and new securities.

The debt in exchange on average represented 31% of GDP

The amount of debt participating in the bond exchange on average represented 34% of the country's total debt and 31% of GDP. In a few cases, the bond restructurings were small, for example representing 1.2% of total debt in the case of Pakistan in 1999 and 3.2% of total debt in the case of Moldova in 2002. In many of these cases, however, a large portion of the country's debt was official sector debt which was restructured separately.

In a number of the more recent restructurings in the Caribbean region, the bond exchanges represented over 50% of total debt: for example, in Jamaica in 2010, Belize in 2007 and Grenada in 2005.

The recent debt exchange by Greece dwarfed any previous sovereign bond exchange both by the nominal amount of the debt involved and as a share of total debt and GDP. In nominal amount, the March 2012 Greek bond exchange represented the largest sovereign bond exchange in history, with US\$273bn of debt caught in the exchange. The amount far surpassed the US\$144bn of the Argentinean debt exchanges and the US\$39bn of the Russian bond exchanges. Further, Greece exchanged as much as 59% of total debt, representing 98% of its GDP.

As Exhibit 3 illustrates, when the initial debt exchange was small in terms of the amount of debt included, it was followed by further debt exchanges. This was the case even when the haircuts in the initial exchange were relatively large. A particular example represents the case of Ukraine. During 1998 and 1999, Ukraine experienced four consecutive restructurings, focusing on specific types of domestic and international bonds and loans. The domestic exchange was relatively larger, but the international debt exchanges proved insufficient in providing debt relief and were eventually followed by a comprehensive restructuring in 2000 of the entire stock of international bonds. What has been important, was the amount of debt relief provided by the exchange.

IV. Factors Explaining the Size of Haircuts

Level of country's debt-to-GDP ratio

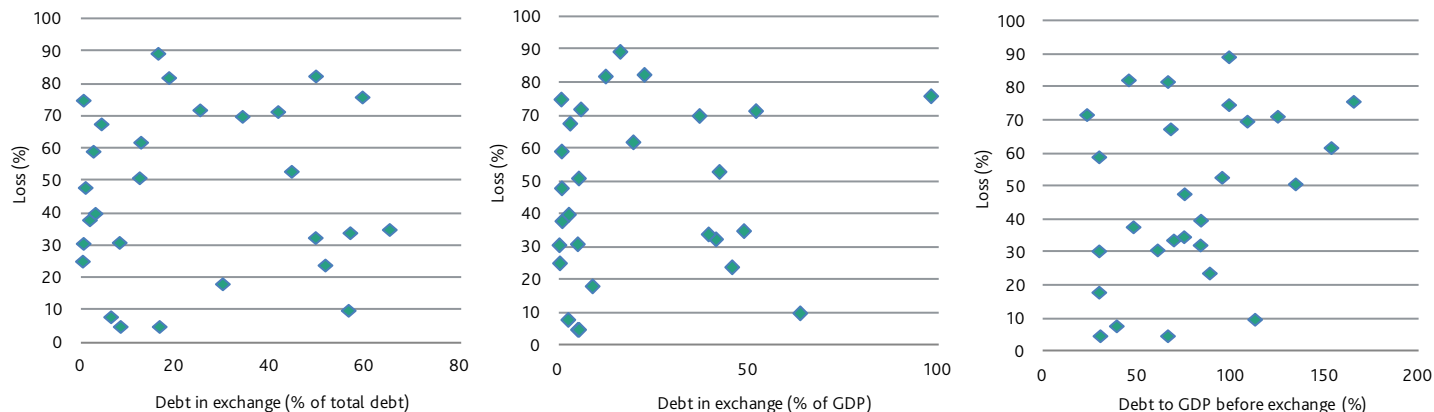
Interestingly, in the overall sample, the loss in sovereign restructurings does not seem to correlate with the size of the debt exchange. However, there is some correlation between the loss and the level of country's debt-to-GDP ratio before the exchange.

Exhibit 4 plots the losses experienced in the debt exchanges against i) the debt participating in the exchange as percentage of total debt, ii) the debt participating in the exchange as percentage of GDP, and iii) the debt-to-GDP ratio in the year-end before the exchange. The first two charts show no systematic relationship. The third chart shows that there is some correlation (34%) between losses and the debt-to-GDP ratio before the exchange.⁹

⁹ Multivariate regression analysis also implies that a 10% higher debt-to-GDP ratio before the exchange is associated with about 3% higher loss, however regression analysis is limited by the small sample size.

EXHIBIT 4

Losses in Sovereign Bond Exchanges Did Not Correlate Strongly with the Amount of Debt Participating In the Exchange But Correlated Somewhat with Debt-to-GDP before the Exchange



Source: Moody's.

Note: Exhibits include all bond exchanges as per Exhibit 3. Losses as measured by trading prices where available and by the net present value of cash flows otherwise.

Losses have depended on the particular conditions in each country at the time of default and the dynamics of the debt restructuring negotiations – including factors such as the involvement of multinationals, whether there has been official debt to reschedule along with the private commercial debt, attempts to discriminate between types of creditors, the particular debt maturity structure of the country, the concentration of debt holders, the complexity of the bond instruments involved and the features included in the bond contracts.

Macroeconomic conditions at the time of default

Debt exchange negotiations typically need to achieve a balance between the country's ability and willingness to service forthcoming debt and the creditors' ability and willingness to take losses. Thus the macroeconomic conditions at the time, the extent of capital outflows and the run on the currency a country is facing influence the size of haircuts. The largest losses were experienced during the debt exchanges of Russia, Argentina and Greece as these three countries experienced some of the worst economic crises at the time, including several years of deep recessions preceding the defaults. In addition, Russia and Argentina experienced massive capital outflows which caused banking crises and made servicing foreign currency debt exceedingly difficult for the sovereign.

Debt negotiations process

Defaults that were due to political factors such as unwillingness to pay in the case of Ecuador or civil conflicts as in the case of Cote d'Ivoire also involved larger losses as the sovereign took a non-negotiable stance vis-à-vis creditors.

On the other hand, in a number of the recent debt exchanges in the Caribbean region where the sovereign undertook several-months-long negotiations with creditors leading up to the debt exchange, the stance of the sovereign was intended to be more cooperative and creditor-friendly. As a result, these restructurings involved smaller losses and generally did not involve haircuts on the principal.

Involvement of multinational institutions

Further, the involvement of multinational institutions and in particular an accompanying restructuring of official debt can also have an impact on the loss experienced in the private debt restructuring. Restructurings of official debt, especially under the umbrella of the Paris Club, frequently include the so-called comparability of treatment clause, which requires that commercial private sector creditors are subject to the same haircut that is offered by the restructuring of the official sector debt. The first time the

comparability of treatment clause was formally invoked was in the case of Pakistan in 1999, causing Pakistan to become the first country to restructure Eurobonds even though the amount of Eurobonds outstanding at the time was relatively small. More recently, the comparability of treatment clause was also invoked as part of the Dominican Republic restructuring in 2005.

Attempts to discriminate between different groups of creditors

Further, sovereigns have sometimes attempted to discriminate between different groups of creditors: for example, offering a smaller haircut on domestic debt largely held by the domestic banking system, while offering a larger haircut on externally-held debt. Indeed, in the case of Ukraine in 1998-2000 and Ecuador in 2000, domestic creditors experienced smaller losses than external creditors. On the other hand, in the case of Uruguay in 2003, domestic creditors experienced a larger loss than external ones. However, attempts to discriminate between creditors have often proved unsuccessful – Argentina and Russia being examples – and more recent debt restructurings have proceeded under the principle of inter-creditor equality where all investors were offered the same terms.

Creditors' ability and willingness to take losses

Additionally, the creditors ability and willingness to take losses has played a major role in the restructurings as well. In both the cases of Russia and Argentina the initial exchange offer of the sovereign was rejected by creditors. The first restructuring offer on local currency debt by the government of Russia in August 1998 was rejected by debt holders (a debt swap launched in July 1998 had proven unsuccessful as well). Following a lengthy negotiation process with a steering committee composed of Western creditor banks, a second offer was finalized in March 1999 and was successful. Similarly, Argentina's first exchange offer for external debt launched in September 2003, which entailed a net present value loss of close to 90% was rejected by creditors (it offered 75% nominal haircut with no recognition of past-due interest). After a series of meetings with bondholders, the terms of the exchange were softened and past-due interest was partially recognized; the second and successful offer launched in January 2005 and ultimately entailed around 70% loss.

Similarly, the type and concentration of debt holders have influenced debt negotiations and resulting losses as well. For example, in the case of Jamaica's restructuring in 2010, the majority of the debt was held by a few large domestic banks. Thus the relatively low loss of the restructuring and the absence of a nominal haircut on the principle balanced off the need to provide liquidity relief for the sovereign with the need to limit the negative impact on the banking system.

Specific features of the bond contracts

Finally, the existence of specific features in the bond contracts, in particular the presence of collective action clauses (CACs), could help a sovereign implement a less attractive exchange offer by forcing participation in the exchange and avoiding holdouts. CACs allow a supermajority of creditors to amend the instrument's payment terms and other essential provisions and have been invoked more often in recent debt exchanges: CACs were invoked in the restructurings of Ukraine, Moldova, Uruguay, Belize, the Seychelles, St. Kitts and Nevis, and Greece.

Moldova used the CACs to amend the terms of payment according to the restructuring offer after an agreement was reached with its major bondholder – who held 78% of the outstanding bonds, while the CACs required 75% majority vote. Uruguay used the CACs contained in its Samurai bonds, the first use of CACs in Japan. Ukraine applied a hybrid approach: first, it invited the investors – mainly investment banks and hedge funds – to tender their bonds by granting an irrevocable proxy vote for the restructuring offer; second, it called a bondholder meeting where the proxy votes were automatically cast in favor of modifying the terms of the old bonds. Belize's government used the CAC embodied in one of its bonds to force 1.3% of non-complying or non-responding creditors to accept the terms of the exchange, increasing the acceptance rate to 98%. Finally, Greece took an unconventional approach to using CACs. Before the launching of the exchange offer, CACs were retroactively inserted in Greek law bonds by an Act of Parliament. Subsequently, after the participation threshold was reached, the activation of CACs drew in the

vast majority of remaining bondholders, raising the participation rate to 97%. Greece's use of the CACs was certainly unconventional. It followed a trend in recent sovereign bond restructurings where CACs have been invoked more and more often in order to bind non-participating creditors and minimize hold-outs. It does, however, raise a new possibility for use of CACs in domestic law bond restructurings.

Haircuts, therefore, have depended on the interaction of economic and political considerations at the time of default and on the particular circumstances of both debtor countries and their bondholders during the debt negotiations process.

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Sovereign Debt Restructurings Provide Liquidity Relief But Often Do Not Reduce Debt Levels

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Summary

The restructuring of Greek debt in March 2012, the largest sovereign bond exchange in history, was a reminder that sovereign debt restructurings may not always succeed in restoring sovereign creditworthiness. This report analyzes the modern history of sovereign bond defaults, focusing on the extent of debt relief provided by sovereign bond exchanges. The report complements our previous studies on the causes of sovereign defaults and the losses experienced by investors during sovereign bond restructurings.¹⁰ Our findings include:

- » Analyzing 31 distressed exchanges on sovereign bonds since 1997, by 19 Moody's-rated and unrated sovereigns, we find that sovereign bond restructurings provide liquidity relief but often fail to provide solvency relief as they are frequently not accompanied by a reduction in debt levels.
- » Over the 1997-2012 period, for half of the sovereign bond exchanges nominal debt levels actually rose in the aftermath of the exchange. Further, the average country exited default with a debt-to-GDP ratio only 5 percentage points lower than before the debt restructuring.
- » The terms of the exchange were one contributing factor to this outcome: the majority of sovereign bond exchanges included maturity extension and a reduction in interest, but no nominal haircut on the principal. As a result, liquidity pressure was alleviated and debt servicing costs were reduced in the long term, but the stock of debt remained unchanged.
- » Further, even in the presence of a nominal haircut, three other factors often counteracted the beneficial impact of a sovereign debt exchange: i) economic deterioration, contributing to budget deficits in the absence of fiscal adjustment, ii) currency depreciation, leading to an increase in the value of foreign currency debt relative to domestic GDP, and iii) banking sector recapitalization costs and other measures to support the economy. New borrowing as a result of these developments during the crisis often undermined the debt reduction achieved via the exchange. The case of Greece illustrates some of these dynamics.

Our findings underscore the fact that defaults are rarely a quick cure for sovereign debt crises and explain why the risk of re-default frequently remains high after a sovereign debt exchange. The debt restructuring typically needs to balance off the ability and willingness of creditors to take losses against the country's ability and willingness to service its debt. While in the counterfactual scenario of no default debt burden is likely even higher, the debt restructurings themselves often provide relief only up to the point which allows the country to resume debt service. As a result, many restructurings only extend maturities, and in a number of those that involve haircuts on the principal, the haircuts are insufficiently deep to offset the rise in debt that occurs due to budget deficits, impaired growth, and currency devaluation.

Resolving sovereign debt crises is a prolonged and difficult process. Debt restructurings could provide more time for government policy to work, but they do not obviate the need for fiscal adjustment. Significant fiscal adjustment is typically necessary over many years to reduce debt levels, especially in an environment of

¹⁰ See [The Causes of Sovereign Defaults: Ability to Manage Crises Nor Merely Determined by Debt Levels](#), November 2010 and [Sovereign Defaults Series: Investor Losses in Modern-Era Sovereign Bond Restructurings](#), August 2012.

sluggish economic growth. The European debt crisis is especially challenging to debt dynamics as periphery countries face difficult growth environment and increased risk premium, and as the starting point for fiscal adjustment is very large budget deficits. In addition, interim financing is typically needed for several years while fiscal adjustment and growth policies start to take effect. In the case of the European debt crisis, the financing requirements are unusually large compared to historical experience, challenging the capacity of international support mechanisms.

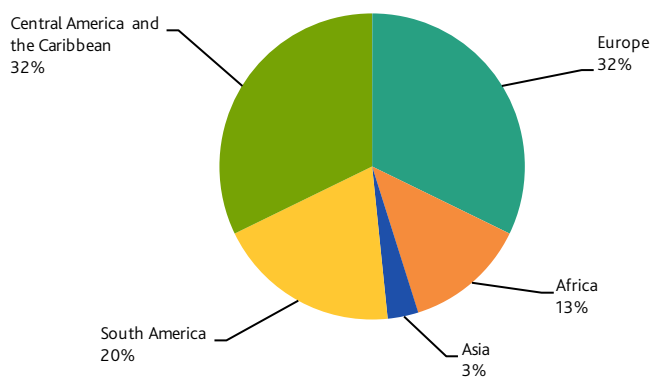
In this study, we analyze the history of modern era sovereign bond defaults, starting in 1997. Section I of the report provides an overview of sovereign bond restructurings in the 1997-2012 period and summarizes their characteristics. Section II analyzes the extent of debt relief provided by the modern-era sovereign bond exchanges. Lastly, Section III provides insight on the main factors that explain why debt levels might not fall after a sovereign restructuring and illustrates the dynamics through the example of Greece.

I. Overview of the Thirty-One Sovereign Bond Restructurings Since 1997

As Exhibits 1 and 2 show, there have been 31 sovereign bond restructurings since 1997, by 19 Moody's-rated and unrated sovereign issuers.

EXHIBIT 1

Modern Era Sovereign Bond Exchanges by Region



Source: Moody's.

Notes: Figures exclude the ongoing debt exchange in Belize.

EXHIBIT 2

Sovereign Bond Exchanges Since 1997

Initial Default Date	Country (NR = not rated at the time)	Distressed Exchange Details	Distressed Exchange Date	Debt in Exchange			Loss (%)		
				In US\$bn	In % of total debt	In % of GDP	Nominal haircut ^[1]	Loss as measured by trading prices or NPV of cash flows (*)	Loss as measured by
Aug-1998	Russia	LC debt (GKO and OFZ)	May-1999	8.3	4.5	3.1	29	46 res., 62 non-res.; deval. 95*	NPV of cash flows
	Russia	FC debt (MIN FIN III)	Feb-2000	1.3	0.7	0.7		75	trading prices
	Russia	FC debt (PRIN and IAN)	Aug-2000	29.1	16.4	16.3	36	90	trading prices
Sep-1998	Ukraine	LC T-bills held domestically	Sep-1998	4.5	30.0	9.0	34	18*	NPV of cash flows
	Ukraine	LC T-bills held by non-residents	Sep-1998	0.4	2.8	0.8		59*	NPV of cash flows
	Ukraine	FC Chase-Manhattan loan	Oct-1998	0.1	0.7	0.2		31*	NPV of cash flows
	Ukraine	FC ING bond and Merrill Lynch bond	Aug-1999	0.4	2.0	1.0	45	38*	NPV of cash flows
	Ukraine	FC Eurobonds	Mar-2000	1.6	8.3	5.1	5	31	trading prices
Jul-1999	Pakistan	Eurobonds	Dec-1999	0.6	1.2	0.9		48	trading prices
Aug-1999	Ecuador	External debt and FC domestic bonds	Aug-2000	7.0	49.5	41.5	40	56 external, 9* domestic	trading price external, NPV domestic
Mar-2000	Cote d'Ivoire (NR)	Brady bonds	Apr-2010	2.8	18.7	12.4	20	82	trading prices
Nov-2001	Argentina	Domestic debt	Nov-2001	64.4	49.6	22.6		83	trading prices
	Argentina	External debt	Feb-2005	79.7	41.7	52.0	66	71	trading prices
Jun-2002	Moldova	Eurobond	Oct-2002	0.04	3.2	2.7		40	trading prices
Jan-2003	Paraguay (NR)	Domestic debt due in 2003-06	Jul-2004	0.1	6.5	2.6		8*	NPV of cash flows
May-2003	Uruguay	LT FC bonds (external and domestic)	May-2003	5.4	56.8	39.6		34	trading prices
Jul-2003	Nicaragua	CENI bonds FC-denom. payable in LC	Jul-2003	0.3	6.1	8.2		n.a.	n.a.
	Nicaragua	CENI bonds FC-denom. payable in LC	Jul-2008	0.3	12.5	5.4		51*	NPV of cash flows
Jul-2003	Dominica (NR)	LC bonds (domestic and external)	Jun-2004	0.1	44.5	42.4	30	53*	NPV of cash flows
H2-2004	Cameroon (NR)	Domestic debt	H1-2005	1.0	10.5	6.5		n.a.	n.a.
Dec-2004	Grenada (NR)	Global bond and domestic debt	Nov-2005	0.3	65.1	48.9		35	trading prices
Apr-2005	Dominican Rep.	International bonds	May-2005	1.1	16.7	5.1		5	trading prices
Dec-2006	Belize	Private external debt	Feb-2007	0.5	51.6	45.8		24	trading prices
Jul-2008	Seychelles (NR)	External debt	Jan-2010	0.3	29.6	36.8	50	70	trading prices
Dec-2008	Ecuador	Global bonds	May-2009	3.2	25.3	5.9	65	72	trading prices
Feb-2010	Jamaica	Domestic debt	Feb-2010	7.9	56.5	63.7		10	trading prices
Jan-2011	Cote d'Ivoire (NR)	Treasury bills (short-term)	Dec-2011	1.3	8.5	5.4		5*	NPV of cash flows
	Cote d'Ivoire (NR)	Eurobond coupon	in progress	0.1	0.6	0.4		25	trading prices
Nov-2011	St. Kitts and Nevis (NR)	Domestic bonds and external debt	Mar-2012	0.1	12.8	19.7	50	62*	NPV of cash flows
	St. Kitts and Nevis (NR)	Domestic loans (debt-land swap)	Apr-2012	0.3	30.3	46.6		n.a.	n.a.
Mar-2012	Greece	Greek and foreign law bonds	Mar-2012	273.4	55.2	94.2	54	76	trading prices
Sep-2012	Belize	2029 Superbond	in progress	0.5	48.0	37.3	in progress	in progress	trading prices
Exchange Average				16	24	21		47	
Country Average				22	33	30			

Source: Moody's, IMF country reports, and Sturzenegger and Zettelmeyer, *Haircuts: Estimating Investor Losses in Sovereign Debt Restructurings, 1998-2005*, IMF Working Paper 05/137, July 2005.

Notes: [1] Largest nominal haircut shown if new instruments had different haircuts.

The exchanges involved both foreign currency as well as local currency government bonds. The average sovereign bond exchange involved 24% of the country's total debt, representing 21% of its GDP. At the time of writing, a further debt exchange is under negotiation in Belize and is expected to conclude by the end of 2012.¹¹

Sovereign debt exchanges typically involved three transformations of the debt: i) an extension of the maturity of the debt instruments, ii) reduction in the coupon, and iii) nominal haircut on the principal. All but one of the bond exchanges included maturity extension and the vast majority of exchanges also included a reduction in coupon payments. As Exhibit 2 shows, imposing a nominal haircut on the principal has been used less frequently: slightly less than half of exchanges also included a nominal haircut on the principal.¹²

The average investor loss in sovereign bond exchanges, as measured by trading prices where available and the net present value of cash flows otherwise, was 47%. The standard deviation around the average was large at 26%, with losses varying from 5% to 95%. Both the average loss and the standard deviation are comparable to the experience in the global corporate sector.

The Greek bond exchange of March 2012 represented the first advanced-economy sovereign default since World War II and the largest sovereign bond exchange in history, with US\$273 billion of debt caught in the exchange. The amount far surpassed the US\$144 billion of the Argentinean debt exchanges of 2001-2005 and the US\$39 billion of the Russian bond exchanges during the 1999-2000 period.

The Greek bond exchange also imposed one of the largest losses on investors, implying a loss of 76% as measured by trading prices. Despite the large investor losses, however, Greek debt in 2012 is projected at 179% of GDP, higher than the 171% of GDP in 2011.

The experience of Greece, therefore, brings forward questions about the effectiveness of debt restructurings in restoring sovereign creditworthiness. In this report, we examine the extent of debt relief provided by sovereign bond exchanges during the 1997-2012 period. Analyzing our case archive, we also provide insight on the main factors that explain why debt levels might not fall after a sovereign restructuring and what developments might counteract a debt reduction achieved during a sovereign bond exchange.

II. Sovereign Restructurings Provided Liquidity Relief but Often No Solvency Debt Relief

In Exhibit 3, we compare the nominal level of debt for a country before and after its sovereign bond exchange. We find that in the year after the restructuring, nominal debt measured in US\$ terms was on average only 3% lower than it had been before the restructuring. Moreover, in 50% of cases, debt levels were *higher* in the year after the exchange than they had been in the year before. Therefore, in half of the cases, the country exited default with *higher* indebtedness than before the debt restructuring. (Of course, in the counterfactual scenario of no debt restructuring, debt levels would have been even higher.)

¹¹ See [Belize debt restructuring: 2007 vs 2012](#), October 2012.

¹² For analysis of the terms of the exchanges, see [Sovereign Defaults Series: Investor Losses in Modern-Era Sovereign Bond Restructurings](#), August 2012.

EXHIBIT 3

Half of Sovereign Bond Restructurings We Not Accompanied by A Reduction In Nominal Debt

(Debt in US\$ and debt-to-GDP ratio in the year before and after sovereign bond restructuring, year-end data)

Initial Default Date	Country (NR = not rated at the time)	Distressed Exchange Date (DE)	Debt Relief (Debt in US\$bn)				Debt Relief (Debt/GDP Ratio)		
			Before DE	After DE	Change in debt	Change in debt in %	Before DE	After DE	Change in debt/GDP
Aug-1998	Russia	May-1999	184.2	176.8	-7.4	-4.0	68.0	99.0	31.0
	Russia	Feb-2000	176.8	155.3	-21.5	-12.2	99.0	59.9	-39.1
	Russia	Aug-2000	incl. above	incl. above	incl. above	incl. above	incl. above	incl. above	incl. above
Sep-1998	Ukraine	Sep-1998	14.9	20.2	5.3	35.3	29.9	48.1	18.2
	Ukraine	Sep-1998	incl. above	incl. above	incl. above	incl. above	incl. above	incl. above	incl. above
	Ukraine	Oct-1998	incl. above	incl. above	incl. above	incl. above	incl. above	incl. above	incl. above
	Ukraine	Jul-1999	20.2	19.3	-0.9	-4.5	48.1	61.0	12.9
	Ukraine	Feb-2000	19.3	14.2	-5.1	-26.5	61.0	45.3	-15.7
Jul-1999	Pakistan	Dec-1999	52.9	57.0	4.1	7.7	75.3	82.6	7.3
Aug-1999	Ecuador	Aug-2000	14.2	11.7	-2.5	-17.5	83.8	71.7	-12.1
Mar-2000	Cote d'Ivoire (NR)	Apr-2010	15.0	15.3	0.3	2.0	66.5	66.4	-0.05
Nov-2001	Argentina	Nov-2001	129.8	144.2	14.5	11.2	45.6	53.6	8.0
	Argentina	Feb-2005	191.3	129.2	-62.1	-32.4	124.9	70.5	-54.4
Jun-2002	Moldova	Oct-2002	1.2	1.1	-0.1	-10.4	84.0	67.2	-16.9
Jan-2003	Paraguay (NR)	Jul-2004	2.1	2.2	0.1	4.2	39.2	31.8	-7.4
May-2003	Uruguay	May-2003	9.5	10.2	0.7	7.5	69.6	84.3	14.7
Jul-2003	Nicaragua	Jul-2003	5.3	5.5	0.2	4.6	134.4	137.7	3.3
	Nicaragua	Jul-2008	2.4	2.4	0.02	0.8	42.7	38.2	-4.5
Jul-2003	Dominica (NR)	Jun-2004	0.3	0.3	-0.01	-2.0	95.3	86.5	-8.8
H2-2004	Cameroon (NR)	H1-2005	9.7	8.6	-1.2	-12.1	61.6	51.6	-10.1
Dec-2004	Grenada (NR)	Nov-2005	0.5	0.5	0.09	20.0	75.1	77.4	2.3
Apr-2005	Dominican Rep.	Apr-2005	6.6	6.8	0.2	3.6	30.5	20.3	-10.2
Dec-2006	Belize	Feb-2007	1.1	1.1	0.01	0.9	88.7	84.1	-4.6
Jul-2008	Seychelles (NR)	Jan-2010	1.1	0.8	-0.3	-23.8	124.4	82.5	-41.9
Dec-2008	Ecuador	May-2009	12.7	9.3	-3.4	-26.5	23.4	18.0	-5.4
Feb-2010	Jamaica	Feb-2010	14.0	15.7	1.7	12.4	112.8	112.7	-0.1
Jan-2011	Cote d'Ivoire (NR)	Dec-2011	15.3	16.4	1.1	7.2	66.4	67.9	1.5
	Cote d'Ivoire (NR)	in progress	16.4	in progress	in progress	in progress	67.9	in progress	in progress
Nov-2011	St. Kitts and Nevis (NR)	Mar-2012	1.1	1.1	-0.03	-2.7	154.3	144.9	-9.4
	St. Kitts and Nevis (NR)	Apr-2012	incl. above	incl. above	incl. above	incl. above	incl. above	incl. above	incl. above
Mar-2012	Greece	Mar-2012	494.9	450.1	-44.8	-9.1	170.5	179.0	8.5
Sep-2012	Belize	in progress	1.1	in progress	in progress	in progress	77.7	in progress	in progress
Exchange Average			50.5	49.0	-4.6	-2.5	79.3	74.7	-5.1
Country Average					-3.7	-4.7			-7.5

Source: Moody's and IMF.

Notes: 2012 data represent current forecasts for St. Kitts and Nevis and for Greece; lower growth or slower fiscal adjustment path could result in higher end-2012 debt levels. Debt data for Russia in 1999, Pakistan in 1999, Ecuador in 2000 and the Dominican Republic in 2005 also reflect the respective Paris Club restructurings of official sector debt.

A similar finding emerges from the analysis of the path of debt-to-GDP ratios, also shown in Exhibit 2. When we compare debt-to-GDP in the year before and after a sovereign bond restructuring, we find that on average the debt-to-GDP ratio fell by only 5 percentage points. Unlike nominal debt, the debt-to-GDP ratio actually fell after most exchanges: in 62% of cases, the debt-to-GDP ratio was lower in the year after the exchange. In the other 38% of cases, however, the debt-to-GDP ratio was *higher* after the restructuring.

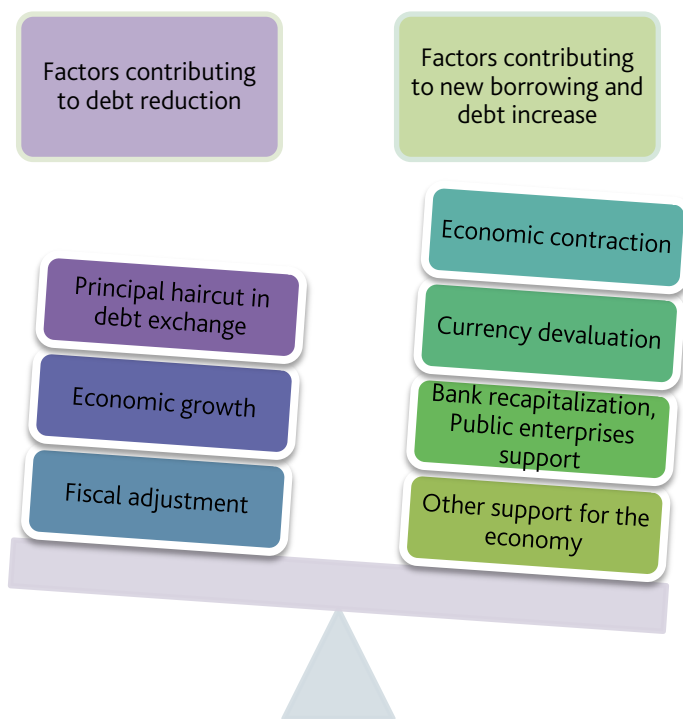
These results remain largely unchanged even if we widen the one-year window of analysis after the restructuring event. There are differences in the experiences between countries and a few bond exchanges did lead to larger debt reductions: for example, the final exchanges in the Ukraine, Argentina, Ecuador and the Seychelles resulted in 24%-32% reductions in the nominal level of debt. However, there are also many examples where default resolution was not associated with decreased country indebtedness.

Our in-depth case analysis sheds some light on the factors that explain these developments and we turn to them next.

III. Why Sovereign Bond Exchanges Did Not Always Lead to Debt Relief

As Exhibit 4 shows, several factors explain why debt levels can end up higher after a sovereign debt exchange. These factors generally fall into two categories. The first category relates to the debt exchange itself and in particular to the terms of the debt restructuring. The second category relates to factors that cause the sovereign to borrow additional funds during the debt crisis, with new borrowing counteracting the debt reduction benefits of an exchange. We discuss these factors in turn below.

EXHIBIT 4
Factor Affecting the Extent of Debt Relief



Source: Moody's.

Terms of the debt exchange

As we discussed briefly above and in greater details previously,¹³ sovereign bond exchanges have typically involved maturity extensions and reduction in coupons. Less than half of bond exchanges since 1997 have included a nominal haircut on the principal. Maturity extensions and reduction in coupon interest rates

¹³ See [Sovereign Defaults Series: Investor Losses in Modern-Era Sovereign Bond Restructurings](#), August 2012.

provide liquidity support to the sovereign, allowing it to stretch debt repayments over a longer time horizon. The reduction in coupon payments also alleviates debt servicing costs over time. In the short term, however, both these measures leave the stock of debt unchanged. Only a nominal haircut on the principal directly reduces nominal debt levels.

We see in Exhibits 2 and 3 that debt exchanges that included larger nominal haircut on the principal tended to provide larger solvency debt relief: examples include the more recent exchanges of Ecuador in May 2009 and the Seychelles in January 2010, as well as the earlier exchanges of Argentina in February 2005 and Ecuador in August 2000, which featured 40%-66% nominal haircuts. The simultaneous restructuring of official sector debt would also help debt relief, for example as in the case of Ecuador in 2000.¹⁴

On the other hand, debt exchanges which featured extension of maturities, without nominal haircut on the principal, provided liquidity relief by smoothing out the profile of maturing debt repayments but did not reduce the stock of debt. Examples include the more market-friendly restructurings of Jamaica in February 2010, Belize in February 2007, and Uruguay in May 2003.

Further, the examples of Russia and Argentina, and in particular the experience in the case of Ukraine, showed that if the first debt exchange in a country did not lead to a significant improvement in the country's indebtedness, it was followed by further debt exchanges. This was the case even when the investor losses in the initial exchange were relatively large. The experience of Ukraine represented a particular example as the country went through five consecutive debt exchanges over the 1998-2000 period. The initial strategy of several, smaller, international debt exchanges, focusing on specific types of bond and loan instruments, proved insufficient in providing debt relief. Thus, in 2000, the smaller exchanges were followed by a comprehensive restructuring of the entire stock of international bonds, which helped to lower both the nominal debt level and the country's debt-to-GDP ratio.

Another example is the case of Belize, which restructured private sector external debt in 2007. Even though the 2007 debt exchange involved 52% of total debt and 46% of GDP, it included only maturity extension and reduction in coupon payments but no nominal haircut on the principal. As a result, the exchange smoothed the repayment profile of debt and relieved liquidity pressures at the time, but did not decrease the overall amount of debt owed: between end-2006 and end-2007, the decrease in total debt was less than 1% and the fall in the debt-to-GDP ratio less than 5 percentage points. Long-term debt sustainability remained a concern and indeed earlier this year the government of Belize announced its intention to restructure the very same "Superbond" that was issued as part of the 2007 debt exchange.¹⁵

Economic distress

A second factor that explains why a reduction in debt levels might not accompany a sovereign restructuring relates to the economic environment during a sovereign crisis. Sovereign defaults typically occurred during periods of economic distress and often were accompanied by several years of economic contraction. In turn, debt exchanges typically occurred either during the year of the initial default or during the year after. Overall, annual real GDP growth was negative during about a quarter of the debt exchanges in the 1997-2012 period and was materially slower than in the preceding years in another quarter of exchanges.

¹⁴ Only four commercial debt exchanges in our sample were accompanied by a Paris Club restructuring of official debt in the same year: Russia in 1999, Pakistan in 1999, Ecuador in 2000 and the Dominican Republic in 2005. Further Paris Club restructurings, however, have occurred in the years preceding or following the commercial debt exchanges.

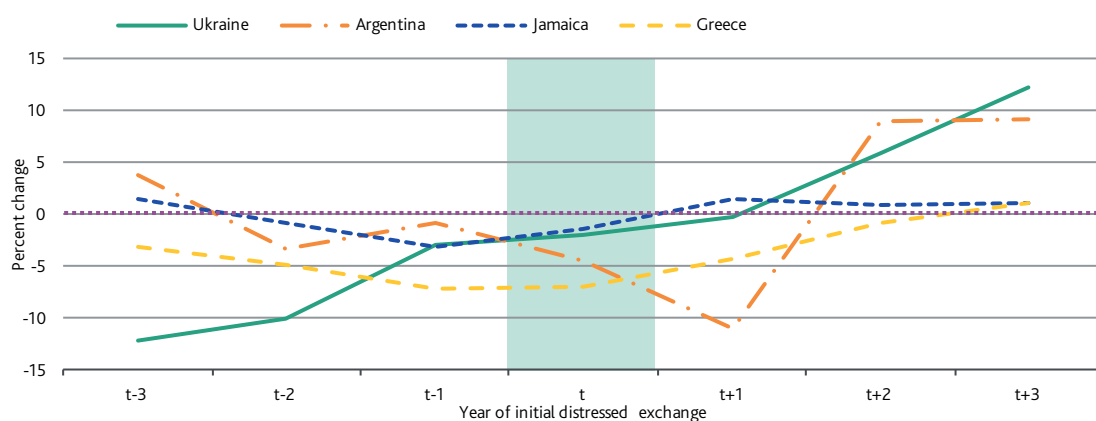
¹⁵ See [Belize's Sovereign Bond Restructuring Will Impose Severe Losses on Investors](#), August 2012 and [Belize debt restructuring: 2007 vs 2012](#), October 2012.

A falling GDP would mechanically lead to a rise in the debt-to-GDP ratio. Further, falling tax revenues would translate into budget deficits. Without sufficient fiscal adjustment, new borrowing became necessary to close the financing gap, which in turn translated into new increases in the debt level.

As Exhibit 5 shows, several crises are striking examples of these developments. The most severe economic contraction was observed in the case of Ukraine, whose economy contracted 25.2% in the three years prior to default, only to contract an additional 1.9% during 1998 - the year of the initial three debt exchanges - and another 0.2% during 1999. Further, the Greek economy contracted 15.1% in the three years prior to the debt exchange and we expect it to contract another 6.9% during 2012 and further 4.2% in 2013. Argentina's real GDP contracted 4.2% in the two years prior to default, another 4.4% during 2001, and additional 10.9% during 2002. More recently, Jamaica's economy contracted 3.9% in the two years prior to the distressed exchange and another 1.4% in the year of restructuring.

EXHIBIT 5

Real GDP Growth in the Three-Year Period Surrounding the Sovereign Debt Exchange



Source: Moody's.

Notes: The year of initial debt exchange, denoted by "t", is 1998 for Ukraine, 2001 for Argentina, 2010 for Jamaica and 2012 for Greece. For Greece, 2012 and beyond data represent current projections.

Currency devaluation

A third factor that influences the value of debt, in particular foreign currency debt, relative to the size of the economy is currency devaluation. Capital outflows typically occur in the run-up to a sovereign default. When severe enough, capital outflows culminate into a foreign exchange crisis and large currency devaluation.

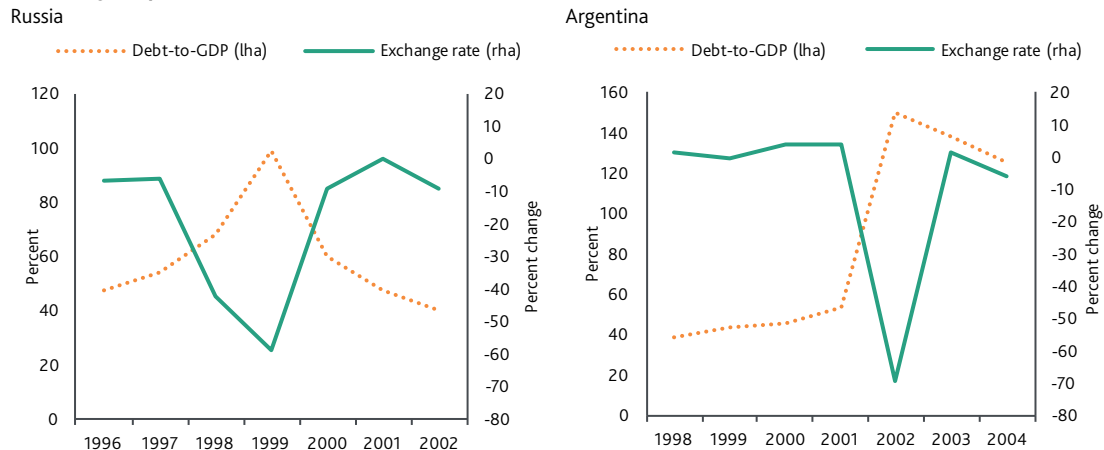
More than half of sovereign defaults have been accompanied by a currency crisis (defined as a nominal depreciation of the local currency against the US dollar of at least 30% within a year, that is also a 10% increase in the rate of depreciation compared to the previous year).¹⁶ In emerging market economies, foreign currency debt typically represented a large share of total debt -- on average, over 75% among past defaulters. Thus, a large currency devaluation can significantly increase the value of country's debt relative to its domestic GDP.

Extreme examples of such dynamics are the cases of Russia and Argentina. The August 1998 Russian sovereign default was accompanied by a sharp depreciation of the ruble despite the exchange controls put

¹⁶ For more details, see [The Causes of Sovereign Defaults: Ability to Manage Crises Not Merely Determined by Debt Levels](#), November 2010.

into place, and in September 1998, the currency was officially floated. As Exhibit 6 shows, the large depreciation that followed in 1998 and 1999 led to a doubling of the debt-to-GDP ratio from 54.0% before the default at end-1997 to 99.0% at end-1999. Similarly, when Argentina was forced to abandon the peg to the US dollar in 2002, its debt-to-GDP ratio tripled from 53.6% at end-2001 to 149.9% at end-2002.

EXHIBIT 6
Currency Depreciation and Debt-to-GDP Ratio



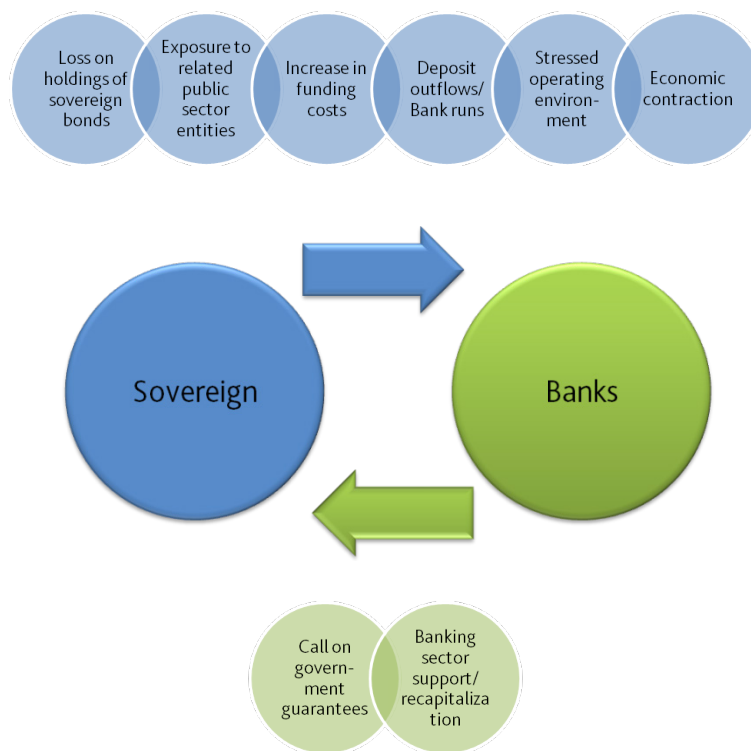
Source: Moody's and IMF.
Notes: Official exchange rate (RUR per SDR and ARA per SDR), annual average.

Bank recapitalization costs and measures to support the economy

A fourth, often very important factor that counteracted the benefit of a debt restructuring was the need for banking sector recapitalization after a debt exchange. Unlike the sovereign defaults of the 1980s and early 1990s that affected primarily foreign banks and investors, recent debt crises have also affected *domestic* financial sectors. Sovereign restructurings directly affected the holders of government bonds, in particular banks, pension funds, and insurance companies. In addition, capital outflows and funding pressure also weakened domestic banking systems, frequently triggering deposit runs, interruption of interbank credit lines, and bank failures. Exhibit 7 illustrates the channels of spillover between the sovereign and the banking system.

EXHIBIT 7

Sovereign-Bank Spillover Channels



Source: Moody's.

Therefore, in order to preserve financial sector stability, governments needed to provide banking sector support. Sometimes public enterprises also required support. We note that the restructuring of government bonds held by domestic banks, even though it necessitated subsequent recapitalization of the banking system, provide liquidity relief to the government as it typically entailed the replacement of shorter-term maturities with longer-term government bonds.

Sometimes, the creation of a banking sector support fund by itself was enough to preserve confidence. For example, during the 2010 domestic debt restructuring in Jamaica, the government established a Financial Sector Support Fund (FSSF), backed by US\$1 billion in funds from multilateral disbursements. It created the FSSF to provide temporary liquidity support, if needed, to banks and funds that expected to face difficulties as a result of the debt exchange. The size of the FSSF represented about 7.4% of GDP and 12.7% of the amount of debt caught in the exchange. The presence of the support fund, as well as the fact that the debt exchange did not include a nominal write-down of principal but only maturity extension and lowering of coupons, helped preserve stability in Jamaica's financial sector and the exchange did not trigger pressure on the currency or the capital account. Ultimately, no institution requested and received support from the FSSF.

However, financial stability is harder to maintain when the domestic financial system has large exposures to the sovereign and when the debt exchange includes a sizeable haircut on the principal, as was the case in

Greece. As illustrated in Box 1 below, the cost of financial system support in Greece at €50 billion represented close to half of the €105 billion debt reduction achieved via the debt exchange.¹⁷

Box 1: The Case of Greece

The March 2012 exchange of Greek debt included a 53.5% nominal haircut on €206 billion of eligible debt (accounting for both new Greek bonds issued and the EFSF “sweeteners”; holders of the GDP warrants are not entitled to receive principal, only payout contingent on real GDP growth outcomes), representing around 55% of the total stock of debt. The government estimated the participation rate in the exchange to be at 95.7%. Thus, the bond exchange itself implied a write-off of almost 30% of total debt (over €105 billion).

Despite the large investor losses, however, Moody’s and European Commission projections for end-2012 nominal debt levels expect Greek debt to fall by only about 9% from its 2011 level (by about €35 billion). At the same time, the debt-to-GDP ratio at end-2012 is projected at 179% of GDP, higher than the 171% of GDP in 2011.

The deep economic recession that is ongoing in 2012 (Moody’s currently expects real GDP to contract by close to 7% in 2012, the fifth year of output contraction in Greece) and the incomplete fiscal adjustment will contribute to substantial fiscal deficits continuing: the primary and overall budget balances for 2012 are projected at -1.4% and -6.9% respectively (€4 billion and €17 billion). Further, the cost of financial system support (€50 billion) will counteract close to half of the reduction in debt achieved through the debt exchange. Additionally, the clearance of outstanding arrears, which were at €7 billion at end-2011, will likely add more during 2012.

These developments along with the unfavorable interest rate-growth dynamic imply that the debt-to-GDP ratio will continue to rise in the short term, from 171% in 2011 to 179% in 2012 (and 189% in 2013). Moreover, should growth fall by more than currently expected, the level of debt will likely be higher.

We note that in the counterfactual scenario of no debt exchange, debt levels would have been even higher. Indeed, the debt exchange did lead to a debt write-off and will help lower debt servicing costs in the long run. Debt reduction even in the long run, however, is predicated on fiscal adjustment, return to growth, the accrual of privatization receipts, and policy continuity.

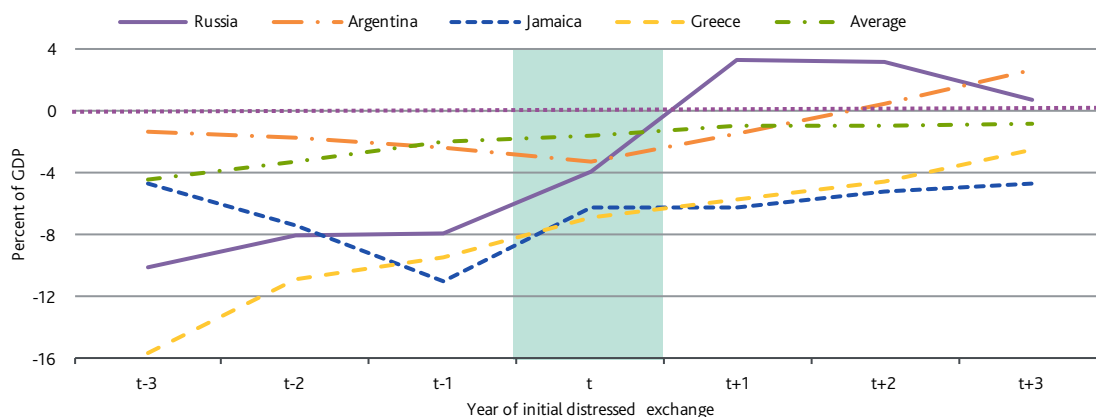
¹⁷ See Moody’s Issuer Comment, [Greece’s Successful Bond Exchange Removes Key Uncertainty, but Risk of Default Post-Exchange Remains High](#), March 2012.

Fiscal deficits

As a result of these developments, overall budget deficits often remained negative through the debt restructurings in the past. As Exhibit 8 shows, the average budget deficit in the year of debt restructuring was 1.6% in our sample (and as high as -6.9%). Thus very often the new debt accumulated due to the crisis and the macroeconomic distress outweighed the reduction in debt, if any, offered by the debt exchange.

EXHIBIT 8

Overall Budget Deficit as Percent of GDP in the Three Years Surrounding the Debt Exchange



Source: Moody's and IMF.

Notes: The year of initial debt exchange, denoted by "t", is 1999 for Russia, 2001 for Argentina, 2010 for Jamaica and 2012 for Greece. For Greece, 2012 and beyond data represents current projections.

Therefore, in countries with very high debt levels, a sovereign bond restructuring by itself may not be enough to restore creditworthiness and a prolonged period of fiscal adjustment and economic growth is necessary in order to meaningfully reduce debt levels. In the absence of significant debt relief, probability of re-default may remain high even after a debt restructuring.

The Role of Holdout Creditors and CACs in Sovereign Debt Restructurings

Originally published 10 April 2013

Creditor litigation in the case of Argentina is drawing attention to the role of holdout creditors in sovereign debt restructurings. At the same time, in order to facilitate sovereign debt exchanges, the European Stability Mechanism (ESM) Treaty is mandating that Collective Action Clauses (CACs) be introduced into euro area bond contracts. Despite the ongoing discussion in the capital markets and the extensive theoretical literature on the subject, empirical evidence on sovereign debt litigation and the effect of CACs is scarce. In this report, we survey the 34 sovereign bond exchanges since 1997 and examine the role of holdout creditors, CACs, and exit consent clauses in them.¹⁸ Our findings include:

- » Sovereign bond restructurings have generally been resolved quickly, without severe creditor coordination problems, and involving little litigation.
- » On average, sovereign bond restructurings closed 10 months after the government had announced its intention to restructure and 7 months after the start of negotiations with creditors.
- » Of the 34 sovereign bond exchanges since 1997, only two have been affected by holdout creditors – the exchanges of Argentina in 2005 and Dominica in 2004. Holdouts did not impact the recent large Greek debt exchanges.
- » A high level of participation in sovereign bond restructuring offers has been the norm outcome: creditor participation averaged 95%. The only exchanges with lower participation rates were those of Argentina and Dominica, where the realized participation rates were 76% and 72% respectively immediately after the exchange. Later on, however, participation rates increased to 93% in Argentina and close to 100% in Dominica.
- » About 35% of sovereign debt exchanges relied on using CACs or exit consents included in the bond contracts in order to bind a larger share of creditors in the restructuring.

The creditor coordination problem has been one of the most widespread concerns about sovereign debt restructurings in the modern era of bond finance, both in terms of coordinating potentially thousands of bondholders to agree on a restructuring proposal in a timely fashion, and in terms of free rider incentives. Creditor coordination problems have also motivated a large body of theoretical work in the sovereign debt literature.

Our analysis of the 34 sovereign bond restructurings over the past decade and a half shows that concerns over coordination problems are exaggerated. In most cases, a bondholder committee was formed within a reasonably short time frame and negotiations over the restructuring were concluded relatively quickly, even though almost half of debt exchanges involved a dispersed creditor structure.

We find that concerns about free rider problems are exaggerated as well. Among the 34 sovereign bond exchanges, in only two cases did holdout creditors represent more than 10% of the value of outstanding bonds and only one case – that of Argentina – resulted in persistent litigation. Moreover, the case of Argentina was and remains unique in its unilateral and coercive approach to the debt restructuring.

¹⁸ This comment does not represent a legal opinion or interpretation but summarizes our views on the potential credit implications in light of the structure of sovereign bond contracts and past experience with sovereign restructurings. The author would like to thank Rodrigo Olivares-Caminal and Lee Buchheit for valuable comments. The views in this report as well as remaining errors are responsibility of the author.

Two strategies have been employed in order to bind non-participating investors in sovereign debt exchanges – the use of CACs in order to amend the payment terms of bonds and the use of exit consents to amend non-payment terms. In bonds issued under New York law, CACs became popular after 2003 as an alternative to the top-down administered mechanism for sovereign debt restructuring (SDRM) suggested by the IMF. They are currently commonly included in almost all New York law issuances. CACs originated in English law bonds in 1879. English law bonds at least since the 1990s have typically contained “modification clauses” that enable bondholders to approve a restructuring in a vote that binds even dissenting bondholders. The modification clause in English law bonds requires between 18.75% and 75% voting thresholds,¹⁹ compared to the 75% threshold typical of New York law CACs.

Starting in January 2013, the euro area has mandated the inclusion of CACs in all euro area bond issuances, as part of the Treaty establishing the European Stability Mechanism (ESM). The euro area CAC clause applies a 66.6% majority threshold to individual bond series and also includes a novel feature – an aggregate CAC across all bond series with a 75% majority threshold. In principle, the inclusion of CACs represents a weakening of bondholder rights, and to the extent that CACs increase the likelihood of a debt restructuring to the detriment of bondholders, they are credit negative for bondholders. In practice, however, the impact is likely only marginal.

The majority of euro area debt is issued under domestic law. Domestic law bonds can be restructured with an act of legislature or CACs can be retroactively inserted in domestic law bonds by an act of legislature, as was done in Greece in early 2012. For English law bonds, the impact will depend on whether the new CAC clause replaces an existing modification clause, which could have a majority threshold higher or lower than 66.6%; in the latter case, the new CAC might actually make a debt restructuring more difficult.

I. Sovereign Bond Restructurings Have Generally Been Resolved Quickly

Creditor coordination problems have motivated a large body of theoretical work in the sovereign debt literature. Creditor coordination has been one of the most widespread concerns about sovereign debt restructurings, especially in the modern era of bond finance which substituted the concentrated creditor structure of bank lending of the 1970s and 1980s with the dispersed creditor structure of bond financing of the 1990s and 2000s. It was feared that the dispersed bond ownership would create problems both in terms of coordinating potentially thousands of bondholders to agree on a restructuring proposal in a timely fashion, and in terms of free rider incentives.

Despite the large body of theoretical literature, empirical evidence on the subject is scarce. In this study, we examine the role of creditor coordination problems by analyzing the sovereign bond exchanges that have occurred over the past decade and a half.

On average, sovereign bond exchanges were negotiated in 7 months

There have been 34 exchanges of sovereign bonds since 1997, including both Moody’s-rated and unrated debt instruments. The exchanges have involved 20 sovereign governments, 9 of which performed several debt exchanges in a row -- either one after the other, or with several years in between the exchanges. Most recent were the debt exchanges announced by Belize and by Jamaica in February 2013.²⁰ Belize’s 2013 exchange follows a previous debt exchange in February 2007; similarly, Jamaica’s exchange follows a previous bond exchange in February 2010.

¹⁹ The 18.75% threshold could be reached in the case where a bondholder meeting does not reach a quorum and after a second meeting the quorum is ratcheted down.

²⁰ See [Belize Debt Restructuring Fails to Resolve Credit Challenges](#), [Belize debt restructuring: 2007 vs 2012](#), and [Moody’s downgrades Jamaica’s government debt rating to Caa3, outlook stable](#).

In Exhibit 1, we measure the length of time it took to negotiate each bond exchange. For each one, we note the date of:

- » The initial announcement of the intent to restructure by the government. In some cases, this coincided with the date of missed payment on the debt instrument; in other cases, this coincided with the announcement of the first debt offer.
- » The start of negotiations with creditors. In some cases, this was the date of the first exchange offer by the government.
- » The formal announcement of the final exchange offer.
- » The distressed exchange date, which is generally the date of closing of the exchange.

We find that contrary to widespread concerns, sovereign bond restructurings have generally been resolved quickly and without severe creditor coordination problems. On average, the exchanges closed 10 months after the government announcement of the intention to restructure and 7 months after the start of negotiations with creditors. The average exchange closed within 2 months of the launching of the final exchange offer.²¹

²¹ Evidence presented in Benjamin and Wright (2009) suggests that restructurings of commercial loans have taken much longer to resolve, almost 8 years on average in their sample of foreign debt restructurings over the 1980-2004 period. Further, evidence presented in Trebesch (2008) (covering a different sample over the 1980-2006 period) also suggests that the average restructuring time was the shortest for the post-1998 period, during which bond debt was the main lending vehicle. Our findings are in line with Bi, Chamon and Zettelmeyer (2011), who develop a theoretical model to show why coordination failures have been rare in the recent decade.

EXHIBIT 1

Sovereign Bond Exchanges Since 1997

Initial Default Date	Country (NR = not rated at the time)	Distressed Exchange Details	Announcement of Restructuring (or Missed Payment)	Start of Negotiations/ First Offer	Final Exchange Offer	Distressed Exchange Date	Time to Closing of Exchange (Months)			In Default During the Bond Exchange?
							From Initial Default	From Announcement	From Start of Negotiations	
Aug-1998	Russia	LC debt (GKO and OFZ)	Aug-98	Aug-98	Mar-99	May-1999	10	10	10	yes
	Russia	FC debt (MIN FIN III)	May-99	Nov-99	Jan-00	Feb-2000	19	10	4	yes
	Russia	FC debt (PRIN and IAN)	Dec-98	May-99	Feb-00	Aug-2000	25	21	16	yes
Sep-1998	Ukraine	LC T-bills held domestically	Aug-98	Aug-98	Aug-98	Sep-1998	n.a.	2	2	no
	Ukraine	LC T-bills held by non-residents	Aug-98	Sep-98	Sep-98	Sep-1998	n.a.	2	1	no
	Ukraine	FC Chase-Manhattan loan	Aug-98	Aug-98	Sep-98	Oct-1998	1	3	3	no
	Ukraine	FC ING bond and Merrill Lynch bond	May-99	May-99	Jul-99	Aug-1999	12	4	4	yes
	Ukraine	FC Eurobonds	Jan-00	Jan-00	Feb-00	Mar-2000	19	3	3	yes
Dec-1999	Pakistan	Eurobonds	Jan-99	Nov-99	Nov-99	Dec-1999	n.a.	12	1	no
Aug-1999	Ecuador	External debt	Aug-99	Jun-00	Jul-00	Aug-2000	13	13	3	yes
	Ecuador	FC domestic bonds	Sep-99	Aug-00	Aug-00	Aug-2000	13	12	1	yes
Mar-2000	Cote d'Ivoire (NR)	Brady bonds	Apr-08	Apr-08	Sep-09	Apr-2010	122	25	25	yes
Nov-2001	Argentina	Domestic debt	Nov-01	Nov-01	Nov-01	Nov-2001	1	1	1	no
	Argentina	External debt	Nov-01	Sep-03	Jan-05	Feb-2005	40	40	18	yes
Jun-2002	Moldova	Eurobond	Jun-02	Jun-02	Aug-02	Oct-2002	5	5	5	yes
Jan-2003	Paraguay (NR)	Domestic debt due in 2003-06	Oct-03	Oct-03	Nov-03	Jul-2004	19	10	10	yes
May-2003	Uruguay	LT FC bonds (external and domestic)	Mar-03	Mar-03	Apr-03	May-2003	n.a.	3	3	no
Jul-2003	Nicaragua	CENI bonds FC-denom. payable in LC	Jun-03	Jun-03	Jul-03	Jul-2003	n.a.	2	2	no
	Nicaragua	CENI bonds FC-denom. payable in LC	Apr-08	Apr-08	Jun-08	Jun-2008	60	3	3	(yes) [1]
Jul-2003	Dominica (NR)	LC bonds (domestic and external)	Dec-03	Dec-03	Apr-04	Jun-2004	12	7	7	(yes) [2]
H2-2004	Cameroon (NR)	Domestic debt				H1-2005	12			yes
Dec-2004	Grenada (NR)	Global bond and domestic debt	Oct-04	Dec-04	Sep-05	Nov-2005	12	14	12	yes
May-2005	Dominican Rep.	International bonds	Apr-04	Apr-04	Apr-05	May-2005	1	14	14	no [3]
Dec-2006	Belize	Private external debt	Aug-06	Aug-06	Dec-06	Feb-2007	3	7	7	no
Jul-2008	Seychelles (NR)	External debt	Oct-08	Mar-09	Dec-09	Jan-2010	19	16	11	yes
Dec-2008	Ecuador	Global bonds	Nov-08	no neg.	Apr-09	May-2009	6	7	no neg.	yes
Feb-2010	Jamaica	Domestic debt	Jan-10	Jan-10	Jan-10	Feb-2010	n.a.	2	2	no
Jan-2011	Cote d'Ivoire (NR)	Treasury bills (short-term)	Jan-11	Oct-11	Oct-11	Dec-2011	12	12	3	yes
	Cote d'Ivoire (NR)	Eurobond coupon	Jan-11	Oct-12	Nov-12	Nov-12	23	23	1	yes
Nov-2011	St. Kitts and Nevis (NR)	Domestic bonds and external debt	Jun-11	Jul-11	Feb-12	Mar-2012	5	10	9	yes
	St. Kitts and Nevis (NR)	Domestic loans (debt-land swap)	Jun-11	Jul-11	Apr-12	Apr-2012	6	11	10	yes
Mar-2012	Greece	Greek and foreign law bonds	Jul-11	Jul-11	Feb-12	Mar-2012	n.a.	9	9	no
Sep-2012	Belize	2029 Superbond	Aug-12	Aug-12	Feb-13	Mar-13	7	8	8	yes
Feb-2013	Jamaica	Domestic debt	Feb-13	Feb-13	Feb-13	Feb-13	n.a.	1	1	no
Exchange Average							18	10	7	

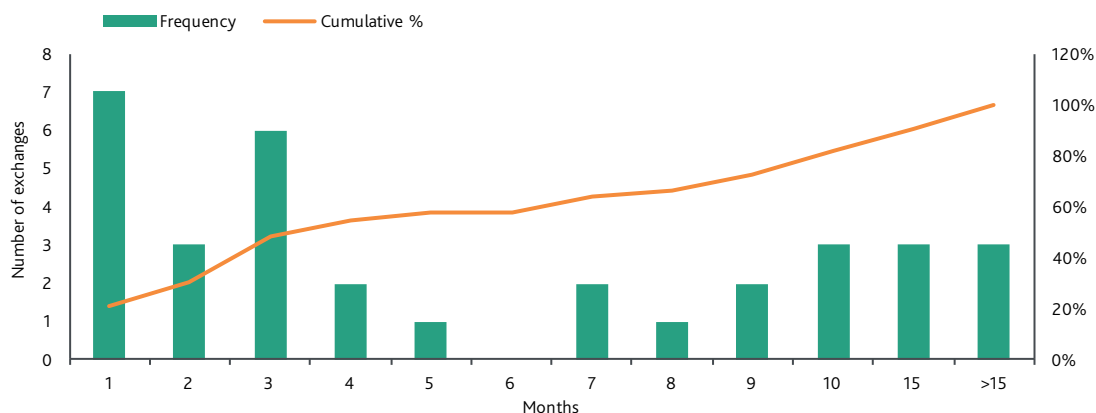
Sources: Moody's, IMF country reports, Sturzenegger and Zettelmeyer (2005), and Diaz-Cassou, Erce-Dominguez and Vazquez-Zamora (2008).

Notes: Time is rounded to the month. [1] Payments suspended due to legal investigation. [2] Bonds under legal dispute. [3] In default on loans.

Further, Exhibit 2 plots the distribution of the time it took to close debt exchanges. We see that 30% of debt exchanges were closed within 2 months of the start of negotiations and over half of exchanges were closed within 4 months. Over 80% of debt restructurings were negotiated in 10 months or less.

EXHIBIT 2

Time from Start of Negotiations with Creditors to Closing of the Exchange



Source: Moody's.

Note: Based on the data in Exhibit 1.

Delays were related to parallel restructurings of official debt and commercial loans

Only 4 out of the 34 debt exchanges since 1997 took longer than a year to negotiate: the Dominican Republic's international bonds exchange of 2005 took 14 months, the Russian 2000 foreign debt exchange took 16 months, the Argentinean external debt exchange of 2005 took 18 months, and the Cote d'Ivoire's Brady bonds exchange of 2010 took 25 months. Apart from the case of Argentina, these delays had to do with the restructuring strategy and the parallel restructuring of official sector and commercial loan debt along with the restructuring of the bond instruments.

The delays in the restructuring of Cote d'Ivoire's Brady bonds were related to the country's emergence from war, the parallel restructuring of Paris Club debt, and the need for the country to reach milestones for the enhanced HIPC Initiative that unlocked the forgiveness of official sector debt.

Argentina's debt restructuring was somewhat unique in its unilateral and coercive approach. Russia, on the other hand, took an approach of conducting a specific debt workout for each defaulted type of debt, in effect conducting three consecutive rounds of debt exchanges between May 1999 and August 2000. Both Argentina's 2005 debt exchange and Russia's August 2000 debt exchanges involved very large losses for investors – 71% and 90% respectively, as measured by trading prices.

The Dominican Republic's 2005 exchange of its international bonds proceeded in parallel with the country's restructuring of its official debt and commercial loans. Thus, between April 2004 and October 2005, the Dominican Republic renegotiated its bilateral official debt with Paris Club creditors (involving two agreements), two series of international bonds, and its commercial loans debt with the London Club. The authorities' approach to the debt restructuring was considered transparent and cooperative.

Restructurings in default took longer to negotiate

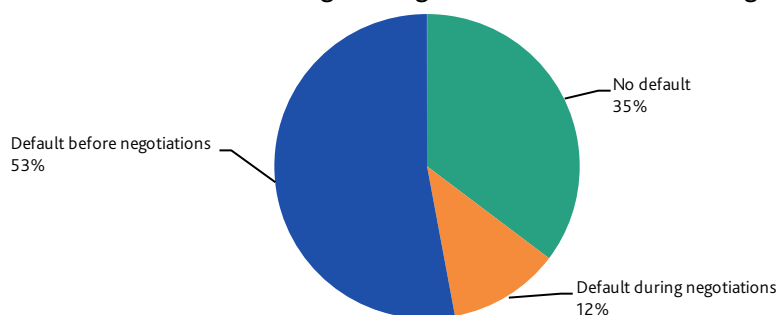
As Exhibit 3 shows, the majority of sovereign bond exchanges, 65%, followed a payment default – that is, there was a missed interest or principal payment before or during the debt negotiations. Only in 35% of exchanges was the sovereign current on its debt repayments.

Those debt exchanges accompanied by default took twice as long to negotiate as those not accompanied by default. On average, the time from the start of negotiations with creditors to the closing of the debt exchange was 8 months for exchanges in default and 4 months for exchanges without a payment default.²²

Limiting the sample to the events of default, on average debt exchanges took 18 months from the initial default event to closing of the exchange.

EXHIBIT 3

Was the Debt Instrument in Default During the Negotiations of the Debt Exchange?



Source: Moody's.

Note: Based on the data in Exhibit 1

Creditor structure appears weakly correlated with the length of negotiations

The vast majority of sovereign bond exchanges were negotiated relatively quickly, despite the fact that half of debt exchanges involved dispersed creditor structures. The vast majority of sovereign bond exchanges included consultations with bondholders and, in most cases, a bondholder committee was formed within a reasonably short timeframe and negotiations over the restructuring were concluded relatively quickly.

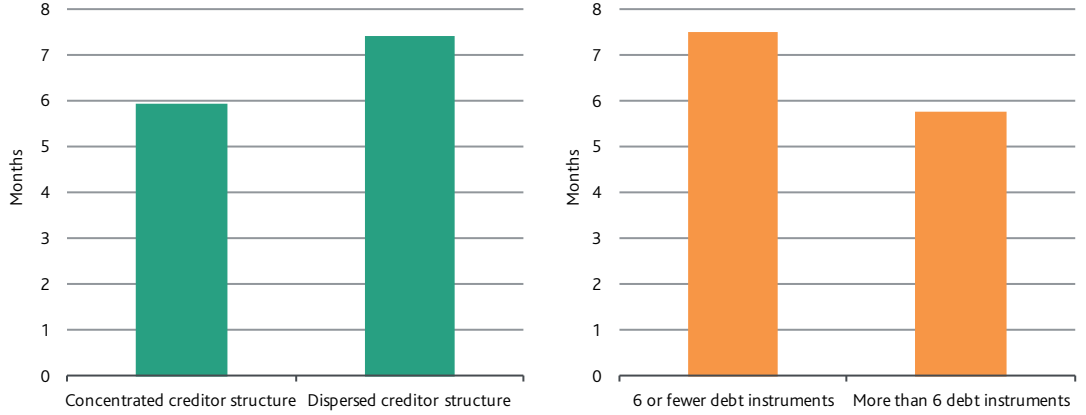
In fact, creditor structure appears weakly correlated with the length of negotiations: as Exhibit 4 shows, conditional on creditor structure, debt negotiations took on average 7 months (with standard deviation of 5.5) for exchanges with a dispersed creditor structure and 6 months (with standard deviation of 5.9) for exchanges involving a concentrated creditor structure. Moreover, there were a number of debt exchanges that involved dispersed creditor structure but still closed within 3 months of the start of negotiations.

The number of debt instruments involved in the exchange does not appear to have been decisive either; in fact, the average length of exchanges involving 6 or fewer debt instruments was 8 months, while the average length of exchanges involving multiple debt instruments (from 16 to over 300) was 6 months (Exhibit 4). Sovereign bond exchanges generally aimed to consolidate the number of outstanding instruments, which improved the instruments' trading liquidity.

²² This result is consistent with findings in Schumacher, Trebesch and Enderlein (2012) that preemptive restructurings without a payment moratorium are associated with a lower risk of litigation.

EXHIBIT 4

The Average Length of Debt Negotiations Conditional on Creditor Structure and on the Number of Debt Instruments Being Exchanged



Source: Moody's.

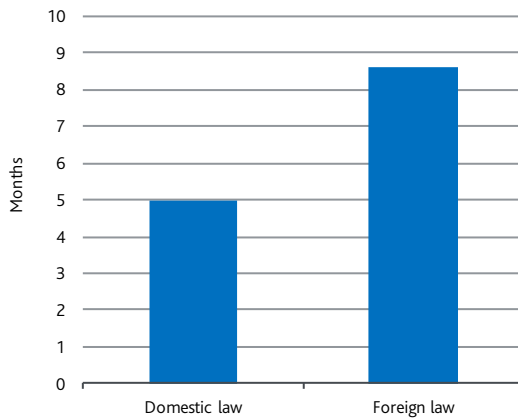
Note: Based on the data in Exhibits 1 and 8 and the Appendix. Equal number of observations in each category of creditor structure. 15 exchanges involved 6 or fewer debt instruments and 19 exchanges involved multiple debt instruments.

The length of negotiations was related to the losses imposed on investors

About half of debt exchanges in our sample involved domestic law bonds and half involved bonds issued under foreign law. Domestic debt exchanges seem on average to have been negotiated more quickly than exchanges involving bonds issued under foreign law. As Exhibit 5 shows, the average length of negotiations for domestic debt exchanges was 5 months (with standard deviation of 3.9), while the average length of negotiations for bonds issued under foreign law was almost 9 months (standard deviation of 6.9).

EXHIBIT 5

The Average Length of Debt Negotiations Conditional on the Governing Law of the Majority of Bond Instruments

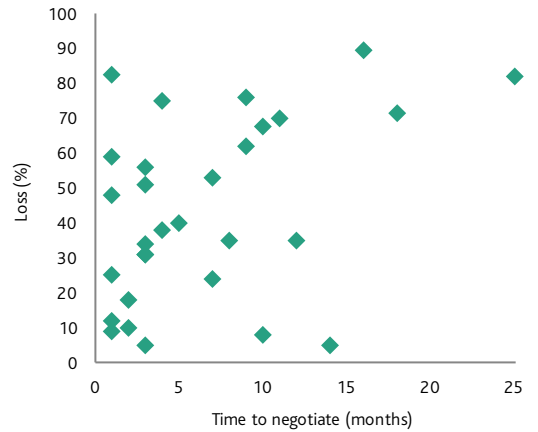


Source: Moody's.

Note: Based on the data in Exhibits 1 and 8 and the Appendix. 18 exchanges involved local law instruments and 17 exchanges involved instruments issued under foreign law.

EXHIBIT 6

The Time to Negotiate vs. the Loss Imposed on Investors



Finally, as Exhibit 6 illustrates, there is about 40% correlation between the time it took to negotiate a debt exchange and the losses imposed on investors.²³ Further, there appears to be also some correlation between the size of the debt exchange and the time it took to negotiate the restructuring, but this correlation is much weaker at only about 16% (when the size of the debt exchange is measured in terms of percent of country's GDP).

II. Holdouts have not presented significant problems

Our analysis of the 34 sovereign bond restructurings over the past decade and a half shows that concerns about free rider problems prove exaggerated as well.

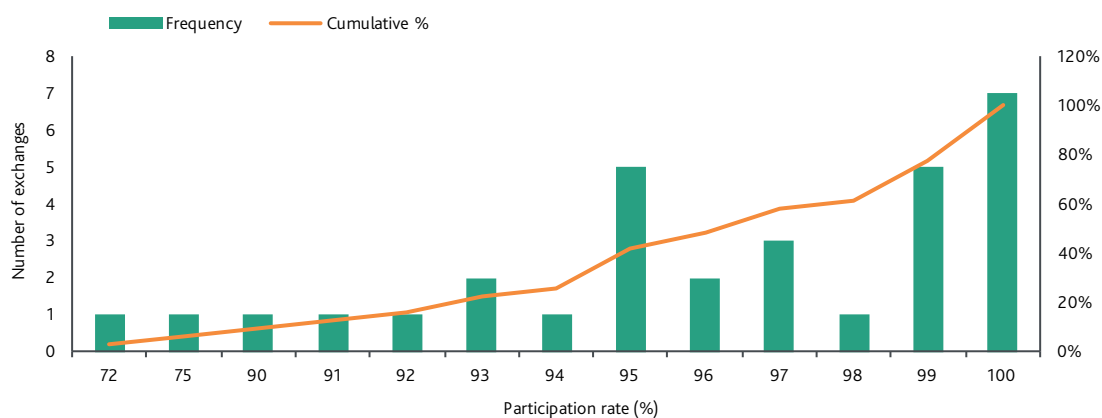
The average creditor participation rate was 95%

Exhibits 7 and 8 show the creditor participation rates realized in each of the sovereign bond exchanges since 1997. The average participation rate was 95% (including the recent 2013 debt exchanges of Belize and Jamaica).

Further, Exhibit 7 plots a histogram of the distribution of participation rates achieved in the various sovereign debt exchanges. We see that all cases but two had a participation rate of 90% or higher. Moreover, 74% of exchanges had a creditor participation rate of 95% or higher.

EXHIBIT 7

The Distribution of Participation Rates in Sovereign Bond Exchanges Since 1997



Source: Moody's.
Note: Based on the data in Exhibit 8.

In only two cases did holdout creditors represent more than 10% of the value of outstanding bonds. Dominica's debt exchange of June 2004 achieved a 72% participation rate and the exchange offer had to be extended several times because of low participation. Dominica's two bonds had a highly complex structure and were stripped and sold as derivative zero coupon bonds to a wide variety of regional investors. However, discussions with non-participating creditors continued while interest payments at terms of the restructuring were deposited in an escrow account. By 2012, the participation rate in the exchange was close to 100%.

²³ This result is consistent with evidence presented in Schumacher, Trebesch and Enderlein (2012) that larger creditor losses are associated with higher likelihood of litigation against sovereign debtors in US and UK courts.

EXHIBIT 8

Creditor Participation Rates and Legal Features of Sovereign Bond Exchanges Since 1997

Initial Default Date	Country (NR = not rated at the time)	Distressed Exchange Date	Governing Law (Main)	Creditor Structure	Participation Rate	CACs			Exit Consents Used?
						Included in Original Bonds?	Used in Exchange?	Included in New Bonds?	
Aug-1998	Russia	May-1999	Local law	Dispersed	95% for residents, 88.5% for non-residents	no	no	no	no
	Russia	Feb-2000	Local law	Dispersed	90%	no	no	no	no
	Russia	Aug-2000	English law	Dispersed	99%	yes	no	no	no
Sep-1998	Ukraine	Sep-1998	Local law	Dispersed			no		no
	Ukraine	Sep-1998	Local law	Dispersed			no		no
	Ukraine	Oct-1998		Concentrated	100%		no		no
	Ukraine	Aug-1999		Conc. for ING bond; Disp. for other	100% (ING bond) and 50% (other)		no		no
	Ukraine	Mar-2000	Luxembourg and German law	Concentrated for majority of bonds	99%	partly	yes	yes	no
Dec-1999	Pakistan	Dec-1999	English law	Concentrated	99%	yes	no	yes	no
Aug-1999	Ecuador	Aug-2000	NY law	Concentrated	97%	no	no	no	yes
	Ecuador	Aug-2000	Local law		very high		no		no
Mar-2000	Cote d'Ivoire (NR)	Apr-2010	NY law	Concentrated	99.98%		no	yes	yes
Nov-2001	Argentina	Nov-2001	Local law	Dispersed	very high	no	no	no	no
	Argentina	Feb-2005	8 governing laws	Dispersed	76.2% in 2005, plus 69.5% in 2010, totaling 92.6% (96% for domestic bondholders)	partly	no	yes	no
Jun-2002	Moldova	Oct-2002	English law	Concentrated	100%	yes	yes	yes	n.a.
Jan-2003	Paraguay (NR)	Jul-2004	Local law	Dispersed	96%				
May-2003	Uruguay	May-2003	Local law most, NY law, English law, and Japanese law	Dispersed	93% (98.8% domestic and 89.2% non-resident)	partly	yes	yes	yes, voluntary
Jul-2003	Nicaragua	Jul-2003	Local law	Concentrated	very high				
	Nicaragua	Jun-2008	Local law	Concentrated	very high				
Jul-2003	Dominica (NR)	Jun-2004	English law	Dispersed	72% (by 2012, reached close to 100%)	partly (external bonds)	no	yes	no [1]
H2-2004	Cameroon (NR)	H1-2005	Local law	Dispersed			no		
Dec-2004	Grenada (NR)	Nov-2005	NY law and local law	Concentrated	94% for external	no	no	yes	no
May-2005	Dominican Rep.	May-2005	NY law		97%	no	no	yes	yes
Dec-2006	Belize	Feb-2007	NY law	Concentrated	98.1%	yes	yes	yes	no
Jul-2008	Seychelles (NR)	Jan-2010	English law	Dispersed	100%	yes	yes	yes	no
Dec-2008	Ecuador	May-2009	NY law		91%	no	no	n.a.	n.a.
Feb-2010	Jamaica	Feb-2010	Local law	Concentrated	99%	no	no	no	no [2]
Jan-2011	Cote d'Ivoire (NR)	Dec-2011	Local law	Concentrated	96%				
	Cote d'Ivoire (NR)	Nov-12	NY law		100%	yes	yes	n.a.	no
Nov-2011	St. Kitts and Nevis (NR)	Mar-2012	Local law	Concentrated	100%	yes	yes		no
	St. Kitts and Nevis (NR)	Apr-2012	Local law	Concentrated	almost universal	n.a.	n.a.	n.a.	n.a.
Mar-2012	Greece	Mar-2012	Local law and some Foreign law	Dispersed	96.9% (100% for domestic)	retroactively inserted	yes	yes	no
Sep-2012	Belize	Mar-13	NY law	Concentrated	100% (CAC triggered after 86.2% part.)	yes	yes	yes	no
Feb-2013	Jamaica	Feb-13	Local law	Concentrated	99%	no	no	no	no
Exchange Average					95%				

Source: Moody's, IMF country reports, Sturzenegger and Zettelmeyer (2005), Diaz-Cassou, Erce-Dominguez and Vazquez-Zamora (2008), and Andritzky (2006).

Notes: [1] Each series of new bonds carried a "mandatory debt management" feature that required Dominica to retire from the market a specified percentage of the original principal amount of that series in each year. [2] Early redemption clause triggered

The Argentinean debt exchange of February 2005 also garnered a low participation rate initially, of 76.2%. The debt exchange was later re-opened in June 2010 and with the additional participation by investors in 2010, the overall participation rate reached 92.6%.

Further, in August 1999 Ukraine's restructuring of the ING bond gathered full participation but the restructuring of the Merrill Lynch bond drew about 50% participation. However, the remaining part of the Merrill Lynch bond was later restructured as part of the subsequent March 2000 debt exchange, so the cumulative participation rate was higher.

Across all debt exchanges, there appears to be no systematic difference in the creditor participation rates in domestic law versus foreign law exchanges.

Only one of the 34 sovereign debt exchanges resulted in persistent litigation

From the 34 sovereign bond exchanges, only one case – that of Argentina – resulted in persistent litigation.²⁴ However, the case of Argentina was and remains unique in its unilateral and coercive approach to the debt restructuring. Only a few other court cases have been filed over the years and they have generally not represented an obstacle to the conclusion of debt exchanges.

In a comprehensive study of creditor litigation, Schumacher, Trebesch and Enderlein (2012) surveyed lawsuits filed against debtor governments in US and UK courts between 1976 and 2010. For our sample of bond defaults since 1997, the survey finds lawsuits filed by 47 different plaintiffs in the case of Argentina after the 2002 default, 1 lawsuit filed in the case of Dominica in 2005, 1 lawsuit filed in the case of Ecuador in 2001 and 1 lawsuit filed in the case of Grenada in 2006, by a commercial bank in the case of Ecuador and by the Export-Import Bank of Taiwan in the case of Dominica and Grenada.

Further, within the broader sample of foreign *bond and loan* defaults since 1976, the survey finds that “runs to the courthouse” are the exception rather than the rule in sovereign debt crises. Apart from Argentina and Peru (whose default involved commercial loans), each of which led to more than 10 lawsuits, the large majority of debt exchanges were implemented without a single legal conflict.²⁵

Approaches to holdout creditors have varied

Sovereigns have taken several approaches to deal with holdout creditors:

- » Holdout creditors have been paid in full, as in the cases of Russia, Greece and Ecuador (in 1999).
- » Holdout bonds have been exchanged at prevailing market value, as in the case of Cote d'Ivoire in 2011.
- » Debts which have not been restructured were no longer serviced, as in the cases of Argentina and Grenada.
- » In a few cases, for example in Dominica, holdout bonds were not serviced but as a sign of good faith, the government paid all interest falling due into an escrow account held at the central bank.

Thus, countries have dealt with holdout investors in several different ways. Pakistan, for example, remained current on all original obligations up to the debt exchange in order to avoid litigation. Uruguay announced from the beginning that debt service on the old bonds would be continued. Ecuador managed threats of

²⁴ See [Legal Ruling Raises Questions About Argentina's Debt Payments](#) and [US Court Ruling on Argentina's Debt Could Have Limited Implications for Sovereign Debt Restructurings](#).

²⁵ Conclusions are also supported in Trebesch (2008). Additionally, IIF/EMTA (2009) reviews the experience with litigation in low-income countries, in the context of HIPC and MDRI debt relief initiatives. The review finds that incidents of litigation have been relatively few in number and covered a small share of the outstanding value of restructured sovereign debt. Further, the vast majority of lawsuits were brought by trade creditors, private creditors and state-owned enterprises from non-Paris-Club creditors, not by distressed debt funds.

holdouts by settling accelerated claims and continuing to pay debt service. As we discuss below, in a number of cases, for example Ukraine and Moldova, a holdout minority was bound into the agreement through majority voting legal clauses.

III. CACs and Exit Consents Have Played a Significant Role in Bond Exchanges

One of the ways countries have achieved high participation rates in sovereign bond exchanges has been to use CACs and exit consents embedded in the bond contracts.

CACs

CACs allow a supermajority of creditors to amend the instrument's payment terms and other essential provisions. Thus, CACs allow a supermajority of bondholders to agree to a debt restructuring that is legally binding on all holders of the bond, including those who vote against the restructuring.

In New York law bonds, CACs became popular after 2003, as an alternative to the top-down administered mechanism for sovereign debt restructuring (SDRM) proposed by the IMF at the time.²⁶ Currently, CACs are commonly included in almost all New York law issuances. The typical threshold for modification of payment terms is a supermajority of 75% of bondholders. CACs originated in English law bonds in 1879.²⁷ English law bonds at least since the 1990s typically contain "modification clauses", which enable bondholders to approve a restructuring in a vote that binds even dissenting bondholders. Modification clauses in English law bonds require between 18.75% and 75% voting thresholds.²⁸ Further, bonds issued under domestic law can be restructured by retroactively inserting CACs into the bonds by an act of legislation, as was done in Greece in early 2012.²⁹

CACs do have a limitation as they apply to individual bond series. Thus, it is possible for non-participating investors to take blocking positions on individual bond series while a high overall participation rate in the restructuring process is still achieved. Aggregate CACs could address this problem in the future, but they are not yet widely used. Nevertheless, aggregate CAC was first introduced during the restructuring of Uruguay in 2003,³⁰ and subsequently was adopted by the Dominican Republic, Argentina, and Slovenia (in November 2012).

Exit consents

An alternative way to impose a debt exchange offer on non-participating investors involves using exit consents.

Exit consents use the modification clauses in the bond contract that allow a majority group of creditors to change the non-financial terms of the old bonds in an exchange, in a way that impairs the value of the old bonds. While amendments to financial terms may require unanimity, other terms may normally be amended by a majority or supermajority of creditors. Indeed, exit consents can be used in restructurings to create an incentive to all creditors to participate in the exchange through modifying bond provisions such as

26 For more details, see Weidemaier and Gulati (2012) and Bradley and Gulati (2012).

27 See Buchheit and Gulati (2002).

28 The 18.75% threshold could be reached in the case where a bondholder meeting does not reach a quorum and after a second meeting the quorum is ratcheted down. As Bradley and Gulati (2012) show, most English law bonds issued prior to 2003 have 18.75% voting threshold. Since 2003, while New York law bonds decreased the percentage requirement from 100% to 75%, English law bonds increased the percentage requirement from 18.75% to a range between 18.75% and 75%. The reasons for the change have not been explained.

29 See [Greece's Successful Bond Exchange Removes Key Uncertainty, but Risk of Default Post-Exchange Remains High](#). Detailed studies of the Greek debt exchange include Zettelmeyer, Trebesch and Gulati (2012) and Georgakopoulos (2012).

30 For more details, see Buchheit and Pam (2004).

the waiver of sovereign immunity, financial covenants or listing requirements, or more generally by altering legal features that affect the bond's liquidity or the holder's ability to litigate.³¹

In other words, exit consent is the technique, by which bondholders grant their consent to amend certain terms of the bonds, at the moment of accepting the exchange offer. Because of these amendments, the defaulted bonds subject to the exchange become less attractive in legal and financial terms, forcing a greater number of bondholders to accept the exchange offer. Otherwise, bondholders not accepting the offer are left with bonds which are impaired and not featuring some of the original contractual enhancements.

Use of CACs in past sovereign restructurings

As Exhibit 8 shows, over 35% of sovereign bond exchanges have used either CACs and/or exit consents as part of the debt exchange process. CACs have been triggered in nine restructurings and exit consents have been used in four exchanges.

CACs were used for the first time during Ukraine's Eurobonds exchange in 2000, then in Moldova in 2002, Uruguay in 2003, and in Belize in 2007. Pakistan did not use the CAC in its English law bonds during the 1999 restructuring. Ukraine took a hybrid approach to the March 2000 debt restructuring: it first invited investors – mainly investment banks and hedge funds – to tender their bonds by granting an irrevocable proxy vote for the restructuring offer; it then called a bondholder meeting, where the proxy votes were automatically cast in favor of modifying the terms of the old bonds.

Moldova used the CACs to amend the terms of payment according to the restructuring offer after an agreement was reached with its major bondholder, who held 78% of the outstanding bonds against a required 75% majority vote threshold in the CACs. Uruguay used the CACs contained in its Samurai bonds, the first use of CACs in Japan. Finally, Belize's government used the CAC embedded in one of its bonds to bind 1.3% of non-complying or non-responding creditors to accept the terms of the exchange, increasing the acceptance rate to 98%. Belize was the first country to use CACs in a debt restructuring under NY law in more than 70 years.³² (Grenada did not use CACs in its 2005 exchange.)

Since 2007, CACs have been triggered in most bond exchanges that involved bonds with embedded CACs, including the restructurings of the Seychelles, Cote d'Ivoire and St. Kitts. Greece's March 2012 debt exchange incorporated a novel feature as an Act of Parliament retroactively inserted CACs into domestic law bonds prior to the announcement of the debt exchange offer. These CACs were subsequently triggered to achieve a 100% participation rate for domestic law bonds. More recently, Belize's February 2013 debt exchange triggered the CAC in the old bond instrument as 86% majority participation was reached.³³

Use of exit consents in sovereign restructurings

Exit consents were used for the first time in Ecuador's restructuring of external debt in August 2000, then in Uruguay in May 2003, the Dominican Republic in May 2005, and the Core d'Ivoire in April 2010. They have most commonly been used to remove the cross-default and cross-acceleration clauses from the old bonds and to lift the listing requirement.

For example, the use of exit consents in Ecuador's 2000 exchange involved an exchange offer that required participating bondholders to also agree to a number of amendments to non-payment terms. These amendments included the deletion of the cross-acceleration clause, the provision that restricted Ecuador from purchasing any of the Brady bonds while a payment default was in progress, the covenant prohibiting

31 For more details, see Buchheit and Gulati (2000).

32 For more details, see Buchheit and Karpinski (2007).

33 See [Belize Debt Restructuring Fails to Resolve Credit Challenges](#).

Ecuador to seek a further restructuring of Brady bonds, the negative pledge covenant, and the covenant to maintain listing of the defaulted bond on the Luxembourg Stock Exchange.³⁴

The scope of exit consents in Uruguay's 2003 exchange was narrower than in Ecuador. Uruguay's exit consents were mainly aimed at avoiding litigation and limiting the possibility of attaching future payments on the new bonds via a court ruling (waiver of sovereign immunity), while also deleting the cross-default and cross-acceleration provisions. Unlike in Ecuador, in Uruguay the participating bondholders could opt out of the exit consents. Argentina's 2005 debt exchange did not use exit consents.³⁵

Exit consents have often been used to remove cross-acceleration and cross-default clauses from the old bond contracts because once these clauses are removed, any non-payments or disputes related to the old bonds will no longer trigger default and acceleration on the new bonds. Thus, new bondholders are protected from legal remedies by non-participating creditors. Exit consents have generally withstood legal challenges under New York law as US courts have refused to invalidate exit consents that removed important bondholder rights and protections, including financial covenants, in several corporate restructurings.³⁶

IV. Conclusion

Our findings indicate that creditor coordination and holdouts have been less of a problem in sovereign bond restructurings than commonly believed. Sovereign bond restructurings have generally been resolved quickly, without severe creditor coordination problems and with little litigation, except for Argentina. Holdouts have not presented significant problems and very high levels of participation have been the norm outcome in sovereign bond restructuring offers.

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³⁴ See IMF (2001).

³⁵ For more details, see Das, Papaioannou and Trebesch (2012) and Buchheit and Pam (2004).

³⁶ Ibid.

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Appendix: Sovereign Bond Exchanges Since 1997 - Debt Exchange Details and Investor Losses

Initial Default Date	Country (NR = not rated at the time)	Distressed Exchange Details	Old Instruments	New Instruments	Debt in Exchange			Loss (%)	
					In US\$bn	In % of Total Debt	In % of GDP	Nominal Haircut [1]	Loss as Measured by Trading Prices or NPV of Cash Flows (*)
Aug-1998	Russia	LC debt (GKO and OFZ)	multiple	multiple	8.3	4.5	3.1	29 [2]	46 res., 62 non-res., deval. 95*
	Russia	FC debt (MIN FIN III)	1	2	1.3	0.7	0.7		75
	Russia	FC debt (PRIN and IAN)	2	2	29.1	16.4	16.3	36	90
Sep-1998	Ukraine	LC T-bills held domestically	multiple	multiple	4.5	30.0	9.0	34	18*
	Ukraine	LC T-bills held by non-residents	multiple	2	0.4	2.8	0.8		59*
	Ukraine	FC Chase-Manhattan loan	1	1	0.1	0.7	0.2		31*
	Ukraine	FC ING bond and Merrill Lynch bond	2	1	0.4	2.0	1.0		38*
	Ukraine	FC Eurobonds	4	2	1.6	8.3	5.1	5	31
Dec-1999	Pakistan	Eurobonds	3	1	0.6	1.2	0.9		48
Aug-1999	Ecuador	External debt	6	2	7.0	49.5	41.5	40	56
	Ecuador	FC domestic bonds	multiple	multiple					9*
Mar-2000	Cote d'Ivoire (NR)	Brady bonds	6	1	2.8	18.7	12.4	20	82
Nov-2001	Argentina	Domestic debt	50	multiple	64.4	49.6	22.6		83
	Argentina	External debt	152	11	79.7	41.7	52.0	66	71
Jun-2002	Moldova	Eurobond	1	1	0.04	3.2	2.7		40
Jan-2003	Paraguay (NR)	Domestic debt due in 2003-06	multiple	5	0.1	6.5	2.6		8*
May-2003	Uruguay	LT FC bonds (external and domestic)	65	73	5.4	56.8	39.6		34
Jul-2003	Nicaragua	CENI bonds FC-denom. payable in LC	multiple	multiple	0.3	6.1	8.2		n.a.
	Nicaragua	CENI bonds FC-denom. payable in LC	multiple	multiple	0.3	12.5	5.4		51*
Jul-2003	Dominica (NR)	LC bonds (domestic and external)	multiple, 2 external bonds	3	0.1	44.5	42.4	30	53*
H2-2004	Cameroon (NR)	Domestic debt	multiple	multiple	1.0	10.5	6.5		n.a.
Dec-2004	Grenada (NR)	Global bond and domestic debt	16 bonds	2	0.3	65.1	48.9		35
May-2005	Dominican Rep.	International bonds	2	2	1.1	16.7	5.1		5
Dec-2006	Belize	Private external debt	6	1	0.5	51.6	45.8		24
Jul-2008	Seychelles (NR)	External debt	2	1	0.3	29.6	36.8	50	70
Dec-2008	Ecuador	Global bonds	2	n.a. (cash buyback)	3.2	25.3	5.9	65	72
Feb-2010	Jamaica	Domestic debt	350	23	7.9	56.5	63.7		10
Jan-2011	Cote d'Ivoire (NR)	Treasury bills (short-term)	multiple	3	1.3	8.5	5.4		5*
	Cote d'Ivoire (NR)	Eurobond coupon	1	n.a. (cash repayments)	0.1	0.6	0.4		25
Nov-2011	St. Kitts and Nevis (NR)	Domestic bonds and external debt	multiple	2	0.1	12.8	19.7	50	62*
	St. Kitts and Nevis (NR)	Domestic loans (debt-land swap)	multiple	n.a. (debt-land swap)	0.3	30.3	46.6		n.a.
Mar-2012	Greece	Greek and foreign law bonds	multiple	23	273.4	55.2	94.2	54	76
Sep-2012	Belize	2029 Superbond	1	1	0.5	47.3	35.3	10	35
Feb-2013	Jamaica	Domestic debt	multiple	multiple	9.1	53.8	63.0		12
Exchange Average					15	25	23		44

Sources: Moody's, IMF country reports, and Sturzenegger and Zettelmeyer (2005).

Notes: [1] Largest nominal haircut shown if new instruments had different haircuts. [2] Holders of GKO or OFZs had their scheduled payments discounted to 19 August 1998 at the rate of 50% per annum. Based on the resulting adjusted nominal claims, they then received a package of cash and new securities.

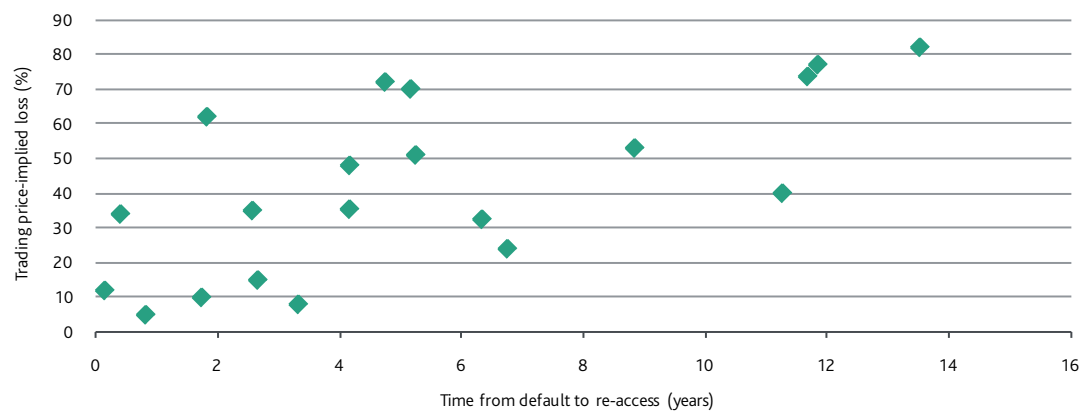
Market Re-Access and Credit Standing After Sovereign Default

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Summary

This report analyzes the modern history of sovereign bond defaults, focusing on market re-access and creditworthiness after a sovereign debt restructuring. Despite the extensive theoretical literature on the subject and the ongoing discussion in the capital markets, empirical evidence on the length of market exclusion after a sovereign default is scarce. We analyze 36 sovereign bond exchanges since 1997, by 20 Moody's-rated and unrated sovereign governments, and find the following:

- » Market access remained impaired for many years after a default: on average, sovereign governments remained out of international capital markets for 5.6 years after default and 4.4 years after the final default resolution.³⁷
- » Further, 45% of defaulters never regained market access during the study period.
- » Default resolution was relatively quick, taking slightly over one year on average. Thus, the length of market exclusion was generally not driven by an inability to resolve the default, but by the length of time it took for a country to rebuild its ability and reputation to service debt.
- » The length of market exclusion was highly correlated with the loss imposed on investors during the debt restructuring:



Source: Moody's.

- » However, market re-access does not seem to have been correlated with the size of the debt restructuring.
- » Sovereign creditworthiness remained stressed years after default: the average defaulter's government bond rating, at Caa1 during default, remained at Caa1 three years after default and was at B3 five years after default.

³⁷ For issuers that have yet to re-access, time is measured from the default event to date (i.e., to September 2013). Additional statistics are discussed in Part 2 of the report.

- » The case study analysis does not suggest that sharp improvement in credit ratings preceded market re-access, nor that market re-access led to a sharp improvement in credit ratings. Rather, both credit ratings and the ability of countries to re-access markets improved as their credit fundamentals improved, including economic prospects, fiscal and debt metrics, external balances and domestic policies.
- » The time to market re-access varied greatly. It depended on country-specific developments and the speed with which the economy recovered, fiscal and debt outcomes improved, external vulnerabilities subsided, and political stability was restored.

Our findings underscore the fact that sovereign defaults are rarely a quick cure for a sovereign debt crisis and that resolving sovereign debt crises is a prolonged and difficult process. Our findings also help explain why the risk of re-default frequently remains high after a sovereign debt exchange. Sovereign debt restructurings do not necessarily reduce debt levels as they often provide liquidity relief but not significant debt reduction. In addition, sovereign debt crises are often accompanied by economic and banking crises, which leave lasting challenges for economic growth. Despite the fact that sovereign bond restructurings are generally resolved relatively quickly and without severe problems in coordination among creditor, market access for a country that defaults on its sovereign bonds remains difficult for several, and often many, years. Further, the existence of official sector support or an IMF program is not a guarantee against default and the vast majority of private sector debt restructurings have also been accompanied by a restructuring of official (non-IMF) debt. As a reflection of these challenges to sovereign creditworthiness, credit ratings typically remain low for several years after a default.

Our results also shed some light on the challenges corporate and financial issuers in a country face in the aftermath of sovereign defaults, as private sector issuers' access to markets is typically curtailed along with their sovereign's market access. Companies in countries emerging from a crisis generally have difficulty in obtaining financing for a prolonged period, at times extending into years.³⁸

I. Introduction: Despite the Extensive Theoretical Literature, Empirical Evidence Is Scarce

This study complements our previous reports in the Sovereign Defaults Series investigating the aftermath of government defaults. In particular we have already written about the size of investor losses imposed in sovereign bond restructurings, the extent of debt relief provided by sovereign debt exchanges, the role of holdout creditors and Collective Action Clauses (CACs) in debt restructurings, and the role of IMF programs in sovereign debt crisis.³⁹

In this study, we analyze 36 sovereign bond restructurings since 1997, to gain an understanding of the duration of exclusion from international and regional credit markets for sovereign defaulters. We investigate for how long countries remain out of international and regional markets after a default and after the final default resolution. We also investigate the path of sovereign credit ratings after default and how long it takes to restore sovereign creditworthiness.

There is extensive theoretical literature on the costs of sovereign default, with Eaton and Gersovitz (1981) presenting the seminal formal model of reputational costs and Bulow and Rogoff (1989) pointing to direct sanctions, such as trade embargoes, as the viable mechanism that makes governments repay their debt. Many papers since, such as De Paoli, Hoggarth and Saporta (2006) present a more recent overview of the various costs of sovereign default.

³⁸ See IMF (2001a).

³⁹ Previous reports in the Sovereign Defaults Series are available at <http://www.moodys.com/sdr>

However, despite the extensive theoretical literature, there exist only a handful of empirical studies investigating market re-access after default. Moreover, a number of these studies use proxies for market access, looking for example at the impact of default on trade (Rose (2005)), trade credit (Borensztein and Panizza (2008)), or including the resumption of credit flows to the private sector as a measure of market access (Cruses and Trebesch (2012)). We are aware of only two studies that document the duration of market exclusion triggered by a sovereign default, Gelos, Sahay and Sandleris (2011)⁴⁰ and Zanforlin (2007); however, both studies cover earlier periods, 1980-2000 and 1980-2003 respectively, thus not covering the rise in emerging market finance that came after the late 1990s and into the 2000s. Finally, several IMF case studies, for example IMF (2005), have examined the conditions for market re-access for particular countries and crises, but focusing on a small sample of cases.

Thus, there has been no systematic empirical examination of the duration of market exclusion for sovereign defaulters over the last decade, with different market participants taking widely varying views on the subject. Similarly, despite the extensive literature on modeling sovereign ratings, starting with the seminal paper by Cantor and Packer (1996), we are not aware of any systematic in-depth studies examining the path and drivers of sovereign credit ratings after default. This study is a step towards bridging these gaps.

II. Market Access Remains Impaired for Many Years After Default

We begin by investigating for how long countries remain out of international and regional credit markets after a default and after the final default resolution.

Study sample and definition of market re-access

The sample of the study includes all sovereign bond defaults since 1997 to today, in order to capture the rise in emerging market finance since the late 1990s.⁴¹ Including both Moody's-rated and unrated defaults, there have been 26 default events on sovereign bonds by 20 countries since 1997. (There were no defaults on sovereign bonds by the impacted countries during the Asian financial crisis of 1997-1998.)⁴² A number of sovereigns have performed several debt exchanges in a row following an initial default event, so that overall there have been 36 debt exchanges.

We define "market re-access" as the placing of a new sovereign bond in the international capital market for the first time after a default. For the Caribbean countries, which have no international market issuance but instead issue on the regional debt exchange, we look to the first placement of a government bond after a default on the regional exchange.⁴³

40 Original working paper is from 2004.

41 The study does not include the recent 2013 default event by the St. Kitts and Nevis which is in progress.

42 Indonesia restructured its syndicated London Club bank debt in line with Paris Club comparability of treatment requirements, but its bonds continued to be serviced.

43 Our definition of re-access episodes excludes bonds resulting from an exchange offer following a debt restructuring, and loan syndications as this form of financing for emerging market countries has declined considerably.

We summarize our findings on the speed of market re-access in Exhibit 1. (The summary statistics exclude debt crises in 2012 and 2013 which are still in progress.)

EXHIBIT 1

Sovereign Default Implies a Lengthy Exclusion from International or Regional Capital Markets

Initial Default Date	Country (NR = not rated by Moody's at the time)	Last Distressed Exchange (DE) Date	Length of Default (Years)	Intl. Market Re-access After DE [1]	Time from Initial Default to Re-access (Years)	Time from Last DE to Re-access (Years)
Aug-1998	Russia	Aug-2000	2.0	Apr-2010 [2]	11.7	9.7
Sep-1998	Ukraine	Mar-2000	1.5	Nov-2002	4.2	2.7
Dec-1999	Pakistan	Dec-1999	0	Feb-2004	4.2	4.2
Aug-1999	Ecuador	Aug-2000	1.0	Dec-2005	6.3	5.3
Mar-2000	Cote d'Ivoire (NR)	Apr-2010	10.1	none	(13.5 to date)	(3.4 to date)
Nov-2001	Argentina	Feb-2005	3.3	none [3]	(11.8 to date)	(8.6 to date)
Jun-2002	Moldova	Oct-2002	0.3	none	(11.3 to date)	(10.9 to date)
Jan-2003	Paraguay (NR)	Jul-2004	1.5	May-2006 [4]	3.3	1.8
May-2003	Uruguay	May-2003	0.0	Oct-2003	0.4	0.4
Jul-2003	Nicaragua	Jul-2003	0.0	none	(10.2 to date)	(10.2 to date)
Jul-2003	Dominica (NR)	Jun-2004	0.9	May-2012 [5]	8.8	7.9
H2-2004	Cameroon (NR)	H1-2005	0.7	Dec-2010 [6]	6.5	5.8
Dec-2004	Grenada (NR)	Nov-2005	0.9	Jul-2007 [7]	2.6	1.7
May-2005	Dominican Rep.	May-2005	0.0	Mar-2006	0.8	0.8
Dec-2006	Belize	Feb-2007	0.2	none	(6.8 to date)	(6.6 to date)
Jun-2008	Nicaragua	Jun-2008	0.0	none	(5.3 to date)	(5.3 to date)
Jul-2008	Seychelles (NR)	Jan-2010	1.5	none	(5.2 to date)	(3.7 to date)
Dec-2008	Ecuador	May-2009	0.4	none	(4.8 to date)	(4.3 to date)
Feb-2010	Jamaica	Feb-2010	0.0	Nov-2011	1.7	1.7
Jan-2011	Cote d'Ivoire (NR)	Nov-2012	1.8	none	(2.7 to date)	(0.8 to date)
Nov-2011	St. Kitts and Nevis (NR)	Apr-2012	0.4	none [8]	(1.8 to date)	(1.4 to date)
Mar-2012	Greece	Dec-2012	(0.8 to date)	none	in progress	in progress
Sep-2012	Belize	Mar-2013	0.5	none	in progress	in progress
Feb-2013	Jamaica	Feb-2013	0	Apr-2013 [9]	0.2	0.2
Apr-2013	Grenada (NR)	in progress	(0.5 to date)	none	in progress	in progress
Jul-2013	Cyprus	Jul-2013	(0.0 to date)	none	in progress	in progress
Average (All)			1.1		5.6	4.4
Average (Countries that have re-accessed)			0.7		4.0	3.3

Notes: [1] Defined as the date of first issue of international bond by the sovereign following the debt exchange; first issuance on regional exchange where noted. Calculations "to date" are as of September 2013.

[2] In the case of Russia, the City of Moscow tapped the markets first, in October 2001, followed by Gazprom and other public enterprises. The sovereign issued its first international bond in April 2010.

[3] In the case of Argentina, the City of Buenos Aires and three provinces (Buenos Aires, Cordoba and Neuquen) were able to issue international bonds in 2010-2011. The sovereign has no international market access.

[4] For Paraguay, date refers to placement of foreign currency bonds in the domestic market, following domestic debt exchange. Paraguay issued its first international bond in January 2013.

[5] For Dominica, date refers to issuance of 91-day T-bills on the regional exchange. Dominica has no international market issuance.

[6] Cameroon issued first-ever Treasury bond in CFA in December 2010. The first Treasury bond in CFA marketed to the international market (mostly banks) was issued in November 2011.

[7] Grenada issued 365-day T-bills on the regional exchange in July 2007. It then issued 5-year Treasury note on the regional exchange in October 2007. Grenada has no international market issuance.

[8] In the case of the St. Kitts and Nevis, the Nevis Island Administration issued 365-day T-bills on the regional exchange in June 2012 with a sovereign guarantee. The sovereign has no market access.

[9] Jamaica issued a one-year fixed-rate USD-indexed bond amid concerns over currency depreciation.

Sources: Moody's, IMF, ECSE (Eastern Caribbean Securities Exchange), CBONDS.

Market exclusion after default was 5.6 years on average

We find that sovereign default has implied a lengthy exclusion from international markets. As Exhibit 1 shows, on average international market re-access occurred 5.6 years after the initial default event and 4.4 years after default resolution (i.e., the date of the final distressed exchange). (For issuers that have yet to re-access, time is measured from the default event to date (i.e., to September 2013).) For 45% of defaulters market re-access has not occurred to date.

Further, even if we limit the sample to countries that have re-accessed international markets after the resolution of their defaults, the average duration of market exclusion was 4.0 years after the initial default event and 3.3 years after default resolution. We note that a number of countries lost market access a year or two before the default event; thus, the overall length of loss of market access is 1-2 years longer than the length of time from the default event to re-access, which we report in Exhibit 1.

On the other hand, sovereign bond defaults have generally been resolved quickly – the average length of default, from the initial default event to the final distressed exchange, was 1.1 years. Therefore, the length of market exclusion was typically not due to an inability to resolve the default, but rather by the time required for a country to re-build its ability and reputation to service debt.

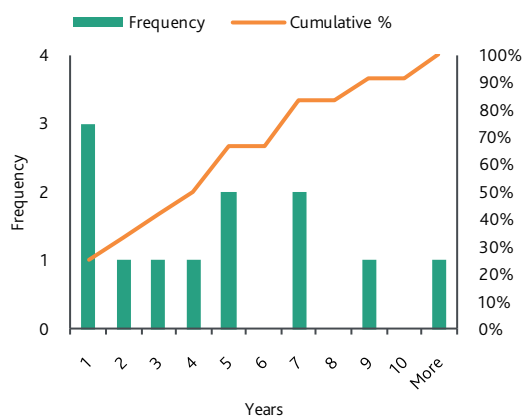
Market exclusion has varied greatly among countries

As Exhibits 2 and 3 show, the duration of market exclusion has varied greatly among countries. Uruguay, the Dominican Republic, and Jamaica re-accessed international markets between 0.4 and 1.7 years after default. Then Grenada, Paraguay, Pakistan and the Ukraine re-accessed international or regional markets within 2.6-4.2 years after default. All other defaulters have taken over 6 years to re-access, including slightly over 6 years in the case of Ecuador (1999) and Cameroon, and almost 9 years in the case of Dominica. Russia issued its first international bond almost 12 years after the 1998 default, although arguably Russia could have re-accessed markets earlier (as we discuss below).

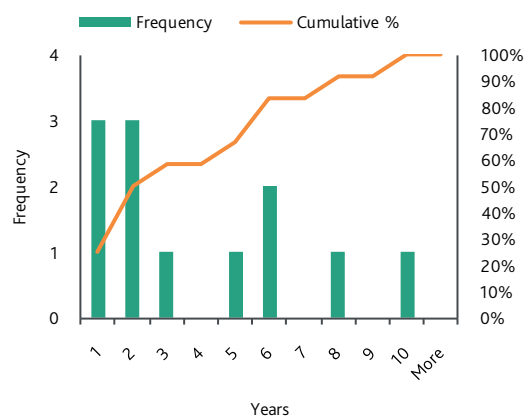
EXHIBIT 2

Time from Default to Re-access, Including Only Countries that Have Re-accessed Markets

Time From Initial Default to Re-Access



Time from Default Resolution to Re-access



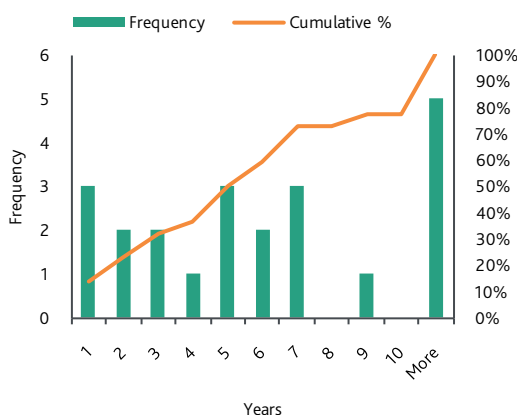
Note: Sample includes only issuers that have re-accessed markets after default.

Source: Moody's.

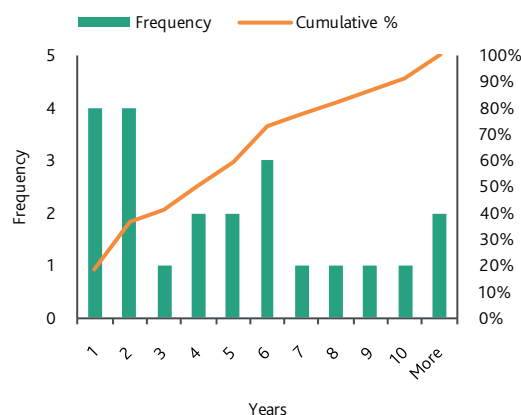
EXHIBIT 3

Time from Default to Re-access, Including All Defaulters

Time From Initial Default to Re-Access



Time from Default Resolution to Re-access



Note: Sample includes all issuers – the ones that have re-accessed markets after default and the ones that have not re-accessed to date (for these issuers, time is measured from the default event to date (i.e., to September 2013). 2012 and 2013 debt crisis currently in progress are excluded.

Source: Moody's.

Further, 10 of the 26 defaulters (excluding the 2012 and 2013 crises still in progress) have not re-accessed markets after their defaults. For 8 of them, it has been 5 or more years after the default event. For 4 of them, it has been more than 10 years after the default event. Argentina, for example, still has no international markets access 11.8 years after the initial default in November 2001 (and 8.6 years after the external debt exchange in February 2005).

In only two cases, given that the length of the default has typically been about one year, has market exclusion been driven by an inability to resolve the default event or to restructure the debt. The two exceptions have been Cote d'Ivoire, which was in default for over 10 years, and Argentina's external debt default, which took over 3 years to resolve.

III. Factors Influencing the Length of Market Exclusion

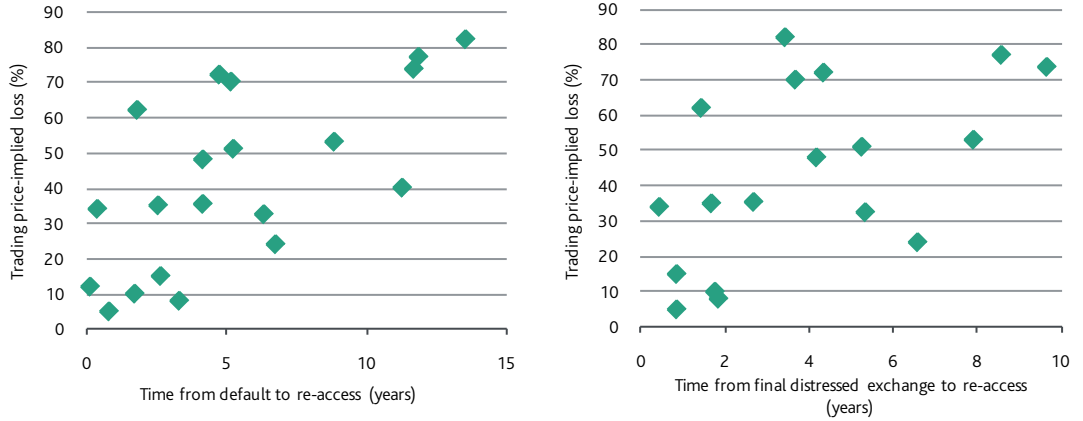
Losses incurred in the debt restructuring

Exhibit 4 shows that the size of the loss imposed on investors during the sovereign bond exchange seems to be relatively well correlated with the length of market exclusion. The debt exchanges of sovereigns which re-access markets relatively more quickly – Uruguay, the Dominican Republic and Jamaica – involved no nominal haircuts on the bond principal and investors experienced relatively lower losses, between 5% and 34% as measured by trading prices. On the other hand, the debt exchanges of sovereigns which did not re-access markets for over a decade involved large haircuts - over 70% in the cases of Argentina, Russia and Cote d'Ivoire.⁴⁴

⁴⁴ Our results are consistent with the findings of Cruces and Trebesch (2012) that higher haircuts are associated with significantly higher subsequent bond yield spreads and longer periods of capital market exclusion in a sample of foreign bond and loan sovereign debt restructurings over 1970-2010 (Cruces and Trebesch (2012) includes the resumption of credit flows to the private sector as a measure of market access).

EXHIBIT 4

Exclusion from International Markets Was Correlated with the Size of the Haircut Imposed on Investors



Note: Sample includes all bond exchanges as per Exhibit 1. Investor loss measured as 30-days post-default trading price. If trading price is not available, loss is measured as NPV of cash flows.

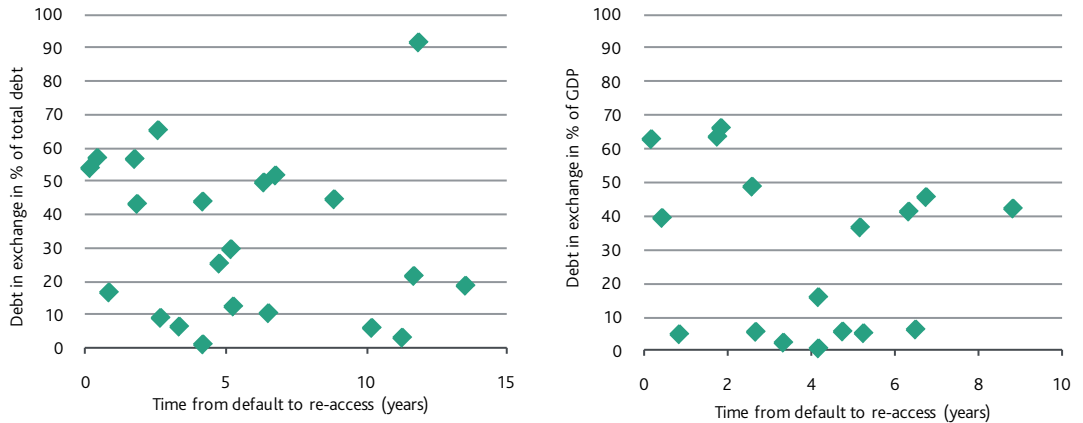
Source: Moody's. Data on losses from *"Investor Losses in Modern-Era Sovereign Bond Restructurings"*, August 2012 and *"The Role of Holdout Creditors and CACs in Sovereign Debt Restructurings"*, April 2013.

Size of the debt restructuring

On the other hand, as Exhibit 5 shows, the length of market exclusion does not appear correlated to the size of the private sector debt caught in the default and restructuring. This finding is independent of whether the size of the restructured debt is measured as a percent of total debt or as a percent of a country's GDP.

EXHIBIT 5

Exclusion from International Markets Does Not Appear Correlated with the Size of the Private-Sector Debt in Exchange



Source: Moody's. Data on debt in exchange from *"Sovereign Debt Restructurings Provide Liquidity Relief But Often Do Not Reduce Debt Levels"*, November 2012 and *"The Role of Holdout Creditors and CACs in Sovereign Debt Restructurings"*, April 2013.

Rebuilding country's ability and reputation to service debt

Intuitively, the speed of market re-access depends on the speed of rebuilding a country's ability to service debt and the re-building of its reputation as a reliable debtor. Debt crises often reflect different circumstances and can have different degrees of severity. Our case study analysis suggests that the speed of market re-access depends on the speed with which factors such as the following improve:

- a) economic growth recovers,
- b) fiscal and debt metrics improve,
- c) external vulnerability indicators improve, such as the external current account balance and the level of foreign exchange reserves,
- d) commitment to sound domestic policies is proven,
- e) political stability is restored.

Academic empirical research, although generally using broader definitions of ‘market access’ and ‘sovereign crisis’, also confirms the importance of the above factors in the speed of market re-access. For example, IMF (2005) finds that indicators of the ability to repay, such as better real GDP growth rate, high external current account balance, high levels of reserves in relation to imports, and low debt to GDP ratios are significantly associated with the probability of re-access. Further, among indicators of the commitment to repay, low inflation rates and good governance indicators significantly improve the probability of re-access. Zanolini (2007) also finds that a sustainable debt profile and a sound external position are key factors affecting the likelihood of a sovereign re-accessing international capital markets. The case studies in IMF (2001) similarly suggest that countries that put in place more credible policy adjustment took significantly less time to re-access markets than those countries that took a longer time to implement a strong economic program. Further, Alessandro, Sandleris and Van Der Ghote (2011) emphasize that political stability significantly increases the chances of re-accessing the market in any given period after the default.

External risk environment also a factor

Finally, another determinant of market access can be investors’ risk appetite and the volatility of capital markets. For example, the empirical estimation in IMF (2005) finds that risk appetite has a large and significant impact on the probability of re-access to international capital markets. Developments that could affect risk appetite include changes in global liquidity conditions, the economic situation of major countries, overall issuance in mature bond markets, the price of oil, and investor sentiment (for example reflected in equity volatility or high-yield bond spreads).

However, a crisis country that has lost market access due to domestic developments, unsustainable policies and deepening concerns about its ability to service debt could not rely only on improved external conditions to re-access markets. It would need to address the underlying causes of the loss of market access, for example by strengthening the fiscal stance and setting the debt dynamics on a sustainable course.

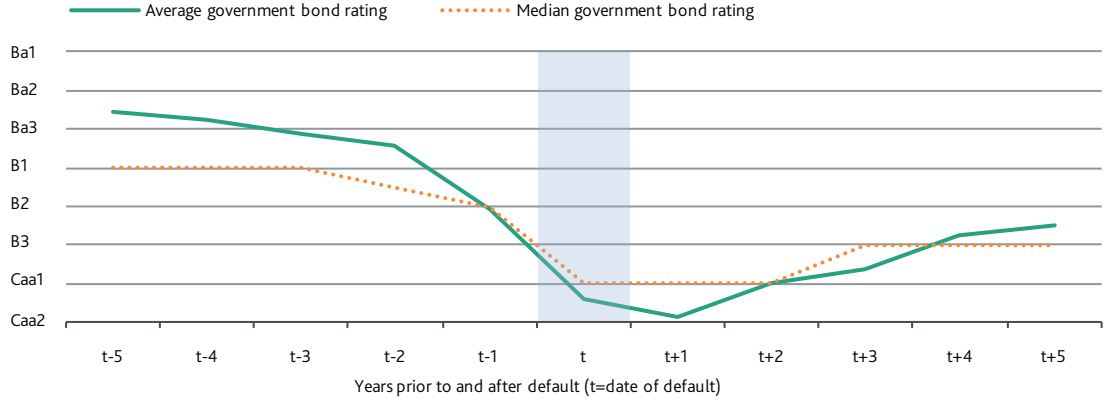
IV. Credit Standing Remains Weak for Several Years After Default

Reflecting the challenges to sovereign creditworthiness and signaling issuers’ stressed creditworthiness in the aftermath of default, Moody’s ratings generally remained low years after default. Exhibit 6 shows the average Moody’s government bond rating in the period 5 years before through 5 years after a sovereign default. We see that the average government bond rating, at Caa1 at the time of default, was at Caa1 three years after default and at B3 five years after default.

EXHIBIT 6

Credit Ratings Remain Low Years After Default

(Average and median Moody's government bond rating five years before and after default)



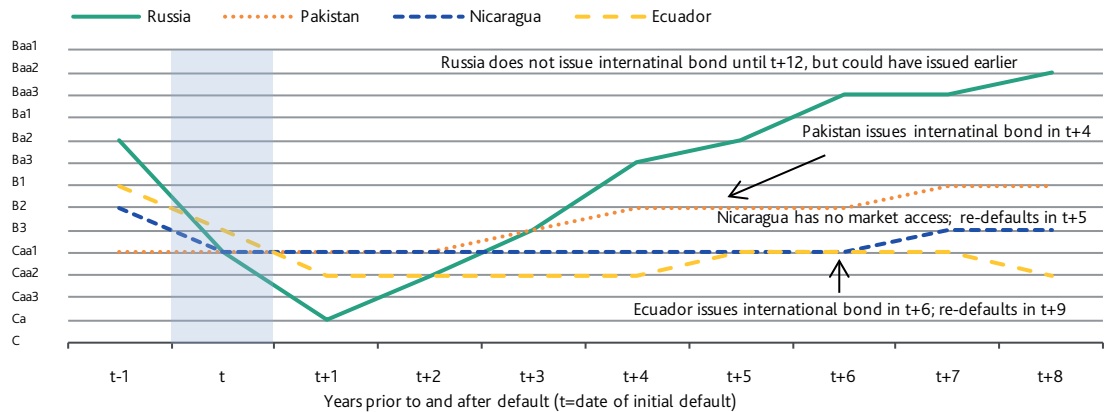
Note: Sample includes Moody's-rated issuers and is based on senior unsecured equivalent issuer rating. As such, split ratings on bonds, if any, are not reflected in the chart.

Source: Moody's.

During the period of study, the only example of a sovereign rating recovering relatively quickly after the default was Russia: as Exhibit 7 shows, the Russian government bond rating was B3 three years after default and Ba2 five years after default. The relatively quick improvement in Russia's creditworthiness was driven by the rise in oil prices in the period after the default, which helped the economy recover unusually quickly, and in turn, led to large improvements in government fiscal balances and external balances. All other defaulters' ratings were B1 or lower five years after default. The experiences of Pakistan, Nicaragua and Ecuador, also illustrated in Exhibit 7, were more typical.

EXHIBIT 7

Russia's credit rating recovered unusually quickly after default driven by improvements in oil prices; the experiences of Pakistan, Nicaragua and Ecuador were more representative of the typical defaulter's experience



Notes: Russia's initial default was in 1998; distressed exchanges followed in 1999 and 2000. Pakistan's default was in 1999. Nicaragua's default was in 2003 and then subsequently in 2008. Ecuador's default was in 1999 and then again in 2008.

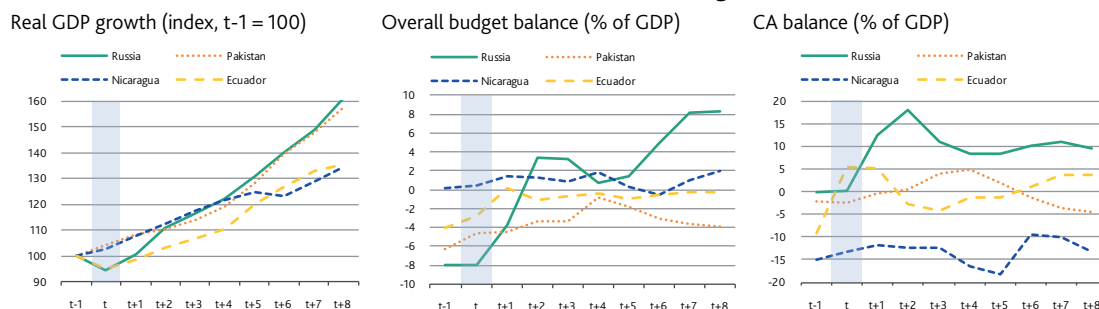
Source: Moody's.

There are many drivers of sovereign creditworthiness, but even a quick look at some key credit metrics illustrates the outperformance of the Russian economy in the aftermath of the 1998-2000 default. As Exhibit 8 shows, in the eight years after the default, the average annual real GDP growth was 6.9% in Russia versus 5.3% in Pakistan, 3.5% in Nicaragua and 4.6% in Ecuador. The average government primary balance to GDP was 5.6% in Russia versus 1.8% in Pakistan, 2.2% in Nicaragua and 2.7% in Ecuador.

The average government overall balance was 3.3% in Russia versus -3.0% in Pakistan, 1.0% in Nicaragua and -0.5% in Ecuador. Finally, the average current account balance to GDP was 11.1% in Russia in the eight years after default, versus 0.2% in Pakistan, -13.0% in Nicaragua and 0.5% in Ecuador.

EXHIBIT 8

Selected credit metrics after default for Russia, Pakistan, Nicaragua and Ecuador



Notes: t indicated the year of initial default: 1998 for Russia, 1999 for Pakistan and Ecuador, and 2003 for Nicaragua.
Source: Moody's.

The fact that sovereign defaults typically occur in the context of severe disruptions to the economic environment drives the slow recovery in government creditworthiness after a sovereign default. Sovereign debt crises are almost always accompanied by economic recessions and are frequently associated with systemic banking crises and/or foreign exchange crises, and often with political volatility. Further, defaults caused by unsustainably high government debt burdens necessitate prolonged fiscal adjustment efforts. As we have discussed previously,⁴⁵ sovereign restructurings by themselves are rarely enough to significantly reduce debt levels. As such, the rebuilding of a country's ability and reputation to service debt can take a long time, which both its ability to access capital markets and its credit rating reflect.

V. Interaction Between Market Access and Credit Ratings

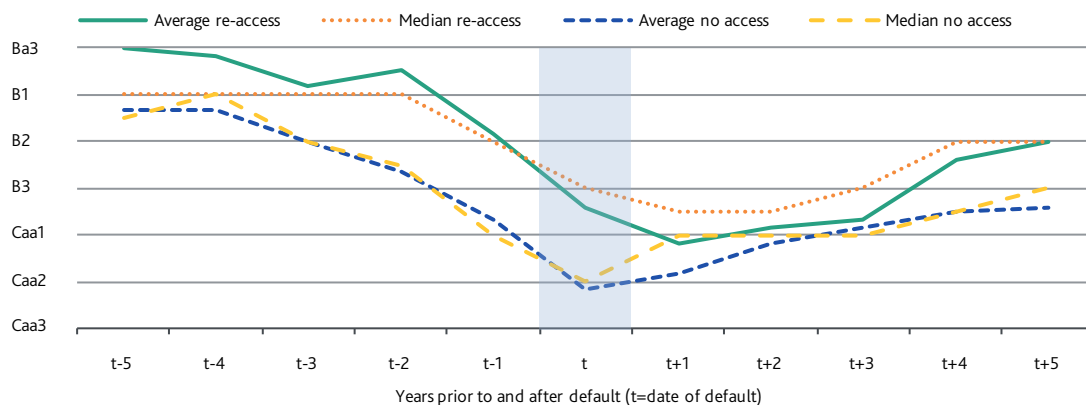
A question investors frequently raise is whether market re-access precedes the improvement in credit ratings or, on the contrary, whether improved credit ratings are necessary for market access to resume. We can share some insights on this question from our case study analysis; however, due to the small sample size, we cannot do justice to the question in this report and the question will remain an interesting avenue for further research.

Exhibit 9 shows the average and median credit rating of countries that re-accessed international markets after default compared to the countries that never re-accessed markets. We observe that the average rating after default was about one-notch higher for the group of countries that re-accessed capital markets after default than for the group of countries that never re-accessed. However, as Exhibit 9 shows, the one-notch difference between the average rating of the two groups existed before the default event as well. This suggests that the group of countries with market re-access generally had better credit fundamentals.

⁴⁵ See Moody's Sovereign Defaults Series, "[Sovereign Debt Restructurings Provide Liquidity Relief But Often Do Not Reduce Debt Levels](#)", November 2012.

EXHIBIT 9

Average and Median Ratings of Countries with and without Market Re-access After Default



Notes: The group of countries with market re-access after default includes: Ukraine, Pakistan, Ecuador (1999 default), Uruguay, Dominican Republic, and Jamaica. The group of countries without market access includes: Argentina, Moldova, Nicaragua, Belize and Ecuador (2008 default). Since Russia never accessed international markets in the study period, but arguably could have re-accessed much earlier given the improvement in credit fundamentals, it is excluded from the analysis in order not to skew the results.

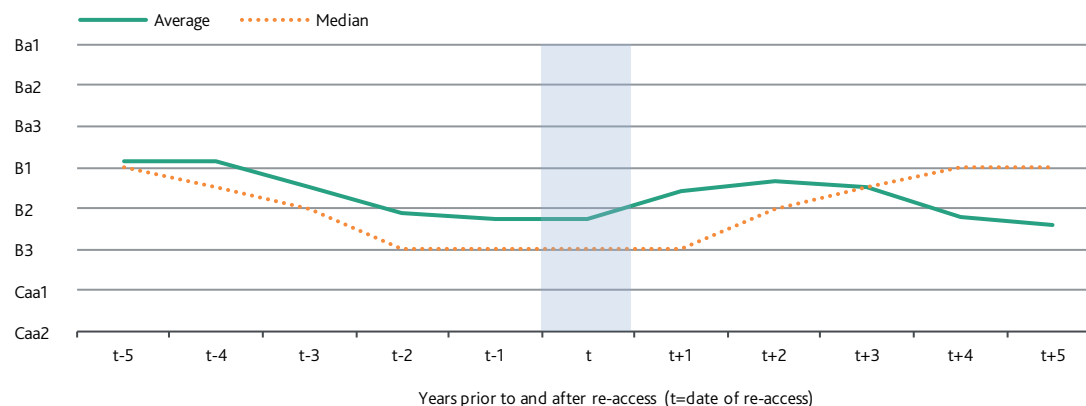
Source: Moody's.

In Exhibit 10, we take a look at the path of ratings around the time of market re-access: Exhibit 10 shows the median and average government bond rating five years before and after the year of market re-access. In the aggregate sample, there is no evidence that sharp improvement in credit ratings preceded market re-access, nor that market access led to sharp improvement in credit ratings. The lack of either suggests that the ability of countries to re-access capital markets improves along with the improvement in credit ratings, both driven by the developments of the underlying credit fundamentals.

EXHIBIT 10

Ability to Re-access Markets and Credit Ratings Tend to Improve Together, Driven by Underlying Credit Fundamentals

(Average and median Moody's government bond rating five years before and after market re-access)



Note: Limited sample including countries that have re-accessed markets after default and are rated by Moody's: Russia, Ukraine, Pakistan, Ecuador, Uruguay, Dominican Republic, and Jamaica.

Source: Moody's.

Case study analysis shows that the county-by-county experience has varied. There seem to have been three different rating paths around the time of market re-access (see Exhibit 11):

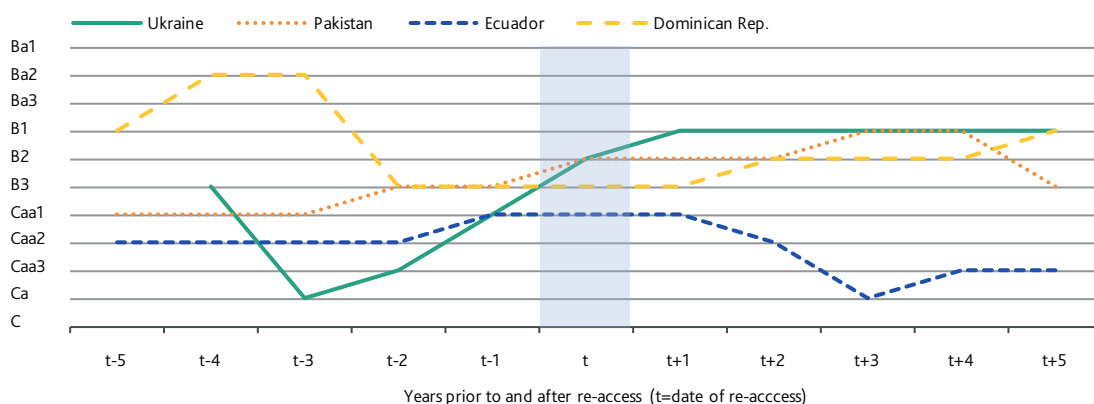
- » In the cases of Russia and Ukraine, the gradual improvement in the rating started some years before market re-access and continued afterwards. Similar pattern occurred in Pakistan, although at a more gradual pace.

- » In the cases of Uruguay, Dominican Republic and Jamaica, the rating had fallen in the years preceding the default and remained unchanged in the three-four years around the time of market re-access.
- » Finally, in the case of Ecuador the rating had improved by a notch a couple of years before market re-access, remained flat in the three years window around the market access episode, but then deteriorated again in the years preceding the next default

As in the aggregate sample, there is no evidence that sharp improvement in credit ratings preceded market re-access, nor that market access led to subsequent sharp improvement in credit ratings. The ability of countries to re-access capital markets improved along with the improvement in credit ratings, driven by the improvement in the underlying credit fundamentals.

Since 45% of defaulters never re-accessed markets and since three of the countries that re-accessed capital markets after default were not rated by Moody's, the sample available for this analysis shrinks from the 26 initial default events to 8 events, which is too limited to allow for a more sophisticated empirical analysis in this report. The question of the interaction between credit ratings and market access remains a worthwhile avenue for future work.

EXHIBIT 11
Path of Government Bond Ratings Around Market Re-access Episodes



Notes: t indicated the year of market re-access: 2002 for Ukraine, 2004 for Pakistan, 2005 for Ecuador and 2006 for the Dominican Republic.
 Source: Moody's.

VI. Conclusion

Resolving a sovereign debt crisis is a prolonged and difficult process and the risk of re-default frequently remains high after a sovereign debt exchange. Sovereign debt restructurings do not necessarily reduce debt levels as they often provide liquidity relief but not significant debt reduction. In addition, sovereign debt crises are often accompanied by economic, banking and currency crises, which leave lasting challenges for economic growth. Market access for a country that defaults on its sovereign bonds remains difficult for several, and often many, years afterwards. As a reflection of these challenges to sovereign creditworthiness, credit ratings typically remain low for several years after a default.

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IMF Program Participation Underscores Medium-Term Sovereign Credit Challenges

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Summary

One of the frequently asked questions in the context of the current European debt crisis is why Moody's generally maintains non-investment-grade ratings on countries in support programs. In this study, we provide one perspective on this question by examining the historical record on IMF programs and sovereign defaults and analyzing the default rate for countries with and without IMF programs.⁴⁶

Our study has a comprehensive global coverage:

- » The dataset includes 168 sovereigns over the 1983-2012 period. During this timeframe, there were 131 instances in which 84 sovereigns defaulted on foreign and local currency bonds or bank loans.
- » Over the same period, there were 632 IMF arrangements in 114 countries. On average, 19 countries started a new IMF program each year and the share of countries in IMF programs each year, including both new and existing programs, was about 30% globally.

Many countries enter support programs when they are in distress and support is often a last-resort crisis measure. Our analysis assesses the extent to which participation in an IMF support program has been correlated with the presence of elevated long-term credit vulnerabilities. We find that, during the 1983-2012 period, from all sovereigns that entered IMF programs, 16.4% defaulted over a five-year horizon. This historical default rate is consistent with our practice of generally maintaining non-investment ratings on countries in support programs.

These default statistics also imply that the vast majority of sovereigns with IMF programs did not default, even though many of them entered programs in severe distress and with no access to private capital, indicating that IMF programs have often been effective in reducing the risk of default. Moreover, even when defaults have not been avoided, IMF programs may have been effective in reducing the macroeconomic impact of default, for example by providing interim financing and supporting a more orderly restructuring process.

Specific findings of the study include the following:

- » Half of sovereign defaults since 1983 were preceded by an IMF program in the two years prior to default. Further, this share has risen to almost 70% since 2000.
- » During 1983-2012, the average annual default rate of sovereigns conditional on being in an IMF program during the previous two years (3.8%) was almost twice as high as the annual default rate of sovereigns without an IMF program (2.1%), symptomatic of the underlying credit vulnerabilities in the former group of countries and consistent with their ratings generally being non-investment grade.
- » The difference remains over longer time horizons: the 5-year cumulative default rate for sovereigns in an IMF program was 16.4% versus 8.0% for sovereigns without a program.

⁴⁶ The author would like to thank Varun Agarwal for his substantive contribution to the analysis and Merxe Tudela for valuable comments and discussions of this research.

- » Over the 1984-2012 period, logit regression analysis of the probability of default over five years as a function of selected country-specific credit metrics and an IMF program participation index shows that program participation is correlated with a significant increase in the probability of default, presumably proxying for more-difficult-to-measure (and thus omitted) determinants of sovereign default risk.
- » The regression results are robust to the time horizon chosen for the probability of default or whether country characteristics are captured in a country risk index (such as the International Country Risk Guide (ICRG) index) or via measures of growth, GDP per capita, inflation, budget deficit, debt and current account. Further, the regression results are if anything stronger for higher-income than for lower-income countries.

The results reflect the fact that countries approach the IMF when they are in crisis and face significant underlying credit challenges – including the presence of risk factors that can cause sovereign defaults, such as banking crisis, very high debt burden, chronic economic stagnation, or institutional weaknesses – and often difficult and lengthy adjustment process. Support programs reduce but do not always eliminate these credit pressures.

This study is organized as follows. Part I provides an overview of IMF programs around the world since 1983. Part II reviews historical sovereign defaults over the 1983-2012 period. Part III provides the comparison of the sovereign default rate for countries with and without IMF programs. Part IV reviews our conclusions. Further, Appendix I provides more details on the different types of IMF facilities available and Appendix II presents the historical sovereign defaults database.

I. Overview of IMF Programs Since 1983

Since 1983, there have been 632 IMF arrangements in 114 countries

Our study sample includes 168 sovereigns, including all countries rated by Moody's as well as unrated countries for which we have information on default history. The only countries in the world we do not include in the study are the ones for which we do not have sufficient information on the history of default (about 30 countries globally, mostly small islands).

Our data on IMF programs includes IMF lending under all of its facilities, including:

- » *Facilities on concessional terms for low-income countries:* the Extended Credit Facility (ECF), previously the Poverty Reduction and Growth Facility (PRGF); the Standby Credit Facility (SCF), previously the Exogenous Shock Facility (ESF); and the Rapid Credit Facility (RFC).
- » *Non-concession loans provided under:* the Stand-By Arrangement (SBA); the Flexible Credit Line (FCL); the Precautionary Credit Line (PCL); and the Extended Fund Facility (which is used for long-term needs).
- » *Emergency assistance for recovery from natural disasters and conflict.*

The arrangements differ by the conditions, timing and size of the loan disbursements (Appendix I provides more detail on the main characteristics of the different IMF loans), but the fundamental objectives of the programs do not differ. Importantly, all IMF arrangements are a potential source of liquidity support for a country, including precautionary arrangements. Further, the vast experience of countries has been to sign consecutive arrangements (for example, a shorter-term arrangement is followed by a longer-term arrangement) and sometimes countries have drawn on a couple of different arrangements at the same time (for example, an Extended Credit Facility and a Structural Adjustment Facility). Thus, in the estimation below we consider whether a country is under an IMF arrangement or not, without differentiating between type of arrangements. We consider consecutive arrangements as a single spell of remaining in a program.

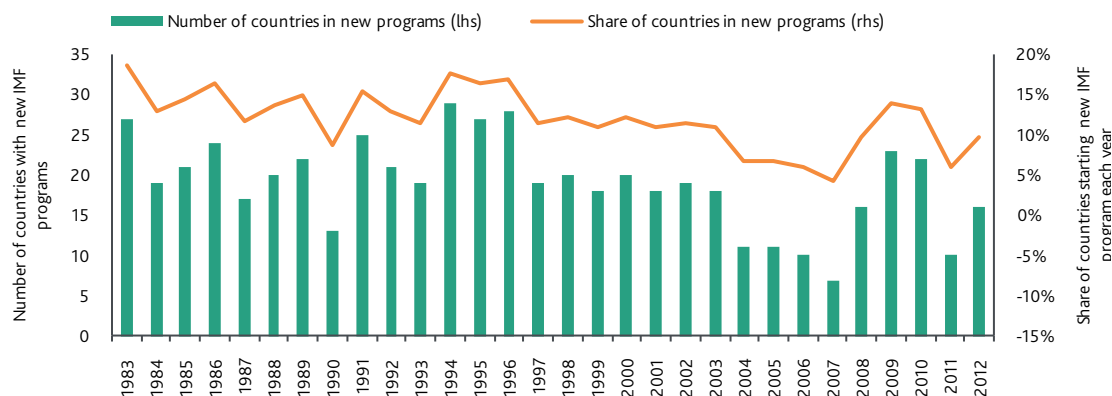
There were 632 IMF programs in 114 countries in the period between 1983 and 2012. Of these, 74 programs in 30 countries were precautionary arrangements, where the countries chose not to draw upon approved amounts but retained the option to do so if conditions were to deteriorate. The majority of arrangements were Stand-By Arrangements (SBAs).

On average, 19 countries started a new IMF program every year

Among the 168 countries in our sample, 114 countries (68%) have had at least one IMF program during the past thirty years. On average, 19 countries started a new IMF program every year between 1983 and 2012. As Exhibit 1 shows, the highest number of new programs started during 1994-1996, between 27 and 29 programs each year. The lowest number of programs started in 2007 - there were only 7 new programs. In terms of share of countries, over 1983-2012, new IMF programs started on average in 12% of countries each year. This share rose to 18% in 1983 and 17% in 1994 and 1996, and fell to 4% in 2007.

Between 1983 and 2008, the recipients of IMF loans were emerging market and developing countries. (We note, however, that in the three decades prior to 1980, many of the advanced countries regularly drew on IMF resources.) Since 2008, a number of higher-income economies have benefited from the IMF's financial assistance, including Hungary, Iceland and Latvia in 2008, Mexico and Poland in 2009 (both via a precautionary Flexible Credit Line, which remained undrawn), Greece, Ireland and Portugal in 2010, and Cyprus in early 2013.

EXHIBIT 1
Number and share of countries starting a new IMF program each year, 1983-2012



Source: IMF and Moody's.

The share of countries in IMF programs each year was over 30% globally

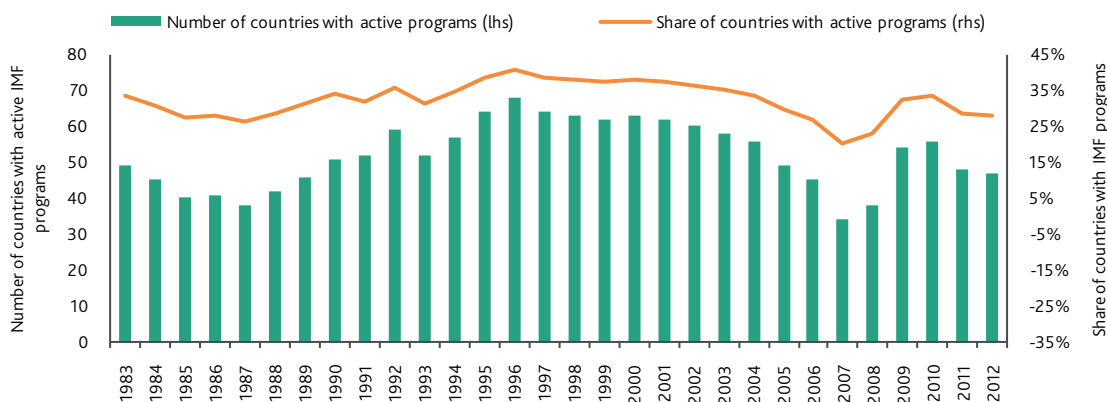
Further, the share of countries with active IMF programs was about 32% over the 30-year study period, with 52 countries globally being in an IMF program at any one time. As Exhibit 2 shows, the share of countries in a program rose to 41% in 1996 and then fell to 20% in 2007.

The number of new programs started since the global financial crisis is not dramatically different from the count of programs in the past; however, the amount of lending has risen dramatically. As Exhibit 3 shows, the annual amount of IMF lending since 2009 has risen almost 7-fold compared to the average annual lending amount over the preceding period. For example, the program for Greece in 2010 was the largest in

the IMF's history relative to quota – the EUR 30 billion IMF financing represented 3,212% of Greece's quota.⁴⁷

EXHIBIT 2

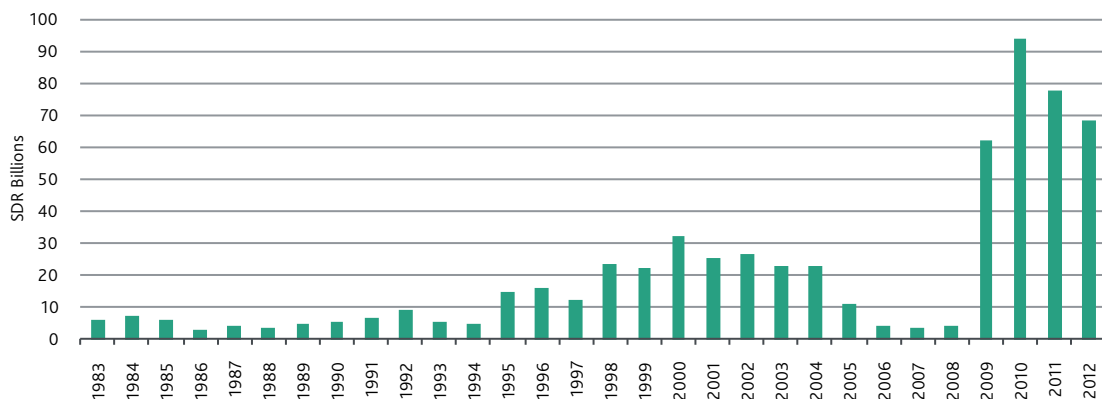
Number and share of countries with an active IMF program, 1983-2012



Source: IMF and Moody's.

EXHIBIT 3

Total IMF lending, 1983-2012



Note: Chart assumes program amount drawn equally over the life of the program. Data on amounts for some 1983 programs is missing.
Source: IMF and Moody's.

The largest share of lending was in the Americas and Europe regions

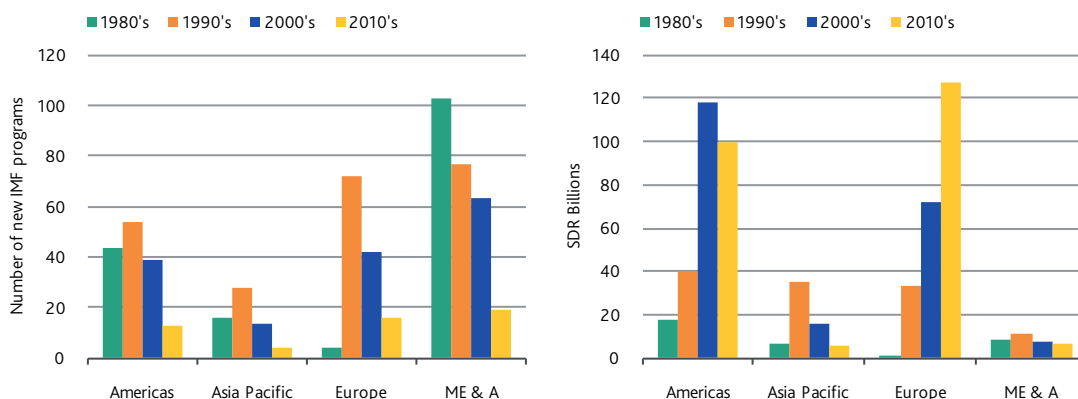
The majority of IMF programs have been in the Middle East and Africa region. Over 1983-2012, there were 262 new programs in the Middle East and Africa region, 150 in the Americas, 134 in Europe, and 62 in the Asia Pacific region. The 1990s was the decade with the highest number of programs (231), followed by the 1980s (167) and the 2000s (158). There have so far been 52 programs since 2010.

In terms of total lending, however, the largest share of lending is represented by the Americas and Europe regions, as the average size of the programs in Africa was comparatively smaller (Exhibit 4).

⁴⁷ IMF, [Greece: Ex Post Evaluation of Exceptional Access under the 2010 Stand-By Arrangement](#), IMF Country Report No. 13/156, June 2013.

EXHIBIT 4

IMF programs and lending by region and by decade, 1983-2012



Source: IMF and Moody's. Data on amounts for some 1983 programs is missing.

Finally, Exhibit 5 shows the largest borrowers from the IMF. The largest amount of funds during the 1983-2012 period was made available to Mexico, SDR 136 billion (including the recent precautionary Flexible Credit Line arrangement). Mexico is followed by Brazil, Poland (also including its 2009 precautionary Flexible Credit Line arrangement), Argentina and Turkey. Given the large size of the current Greek program, Greece ranks number six. Russia ranks number eight.

In terms of amount of time spent in IMF programs, African countries rank in the top eight, with Malawi, Niger and Mauritania in the top three, followed by Cote d'Ivoire and Ghana. Argentina ranks number nine with 80% of the time period being accompanied by IMF programs.

EXHIBIT 5

Top 10 borrowers by amount and by number of years in a program, 1983-2012

Country	Total IMF Program Amount (SDR 000s)	Country	Years in IMF Programs	Share of Time in a Program over 1983-2012
Mexico	136,072,470	Malawi	29	97%
Brazil	59,379,695	Niger	28	93%
Poland	48,676,127	Mauritania	27	90%
Argentina	38,558,550	Cote d'Ivoire	26	87%
Turkey	35,357,140	Ghana	26	87%
Greece	31,173,669	Senegal	26	87%
Ukraine	25,325,970	Guinea	25	83%
Russia	21,538,670	Kenya	25	83%
Indonesia	17,359,340	Argentina	24	80%
Romania	16,423,336	Madagascar	24	80%
		Tanzania	24	80%

Note: Amounts include the funds made available under the programs – actual drawn amounts were somewhat lower, especially if the programs included precautionary arrangements. Ongoing arrangements were prorated to the end of 2012.

Source: IMF and Moody's.

II. Overview of Sovereign Defaults Over Time

Definition of a sovereign default

We define a sovereign default as: i) a missed or delayed disbursement of a contractually-obligated interest or principal payment (excluding missed payments cured within a contractually allowed grace period); or ii) a distressed exchange whereby (1) an obligor offers creditors a new or restructured debt, or a new package of securities, cash or assets that amount to a diminished financial obligation relative to the original obligation; and (2) the exchange has the effect of allowing the obligor to avoid a payment default in the future.

In this study, we include defaults on local and foreign currency sovereign bonds and bank loans (that is, we include defaults on both external and domestic sovereign debt). We do not include defaults on sovereign-guaranteed debt or other debt issued by public enterprises. Further, we include only defaults on commercial private sector debt; we do not include defaults on official sector debt.

There were 131 sovereign defaults since 1983, with a peak in the 1980s

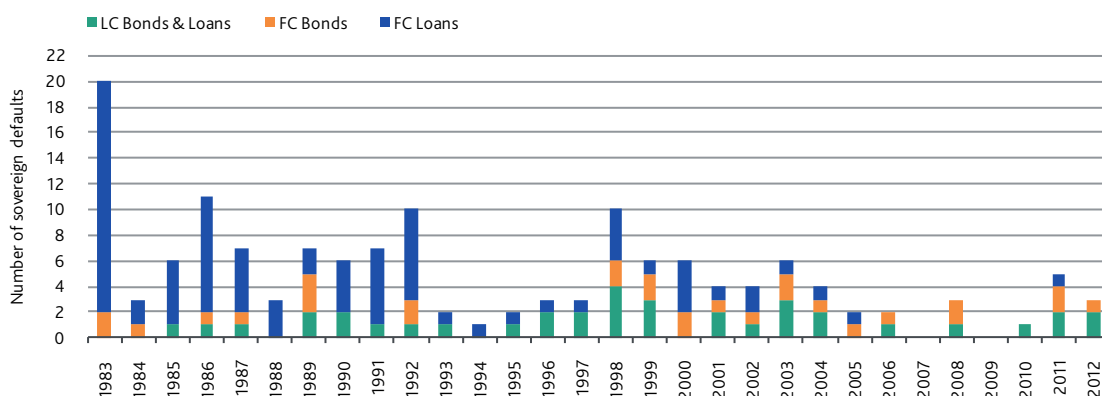
In the 1983-2012 period, there have been 131 sovereign defaults in 84 countries – on average, 4.4 defaults per year. There were 54 defaults during the 1980s, 46 in the 1990s, 25 in the 2000s, and 6 defaults between 2010 and 2012.⁴⁸

The largest share, 56%, of sovereign defaults represented defaults on foreign currency loans; 19% were defaults on foreign currency bond instruments; and the other 25% were defaults on local currency bond or loan instruments. Therefore, overall, one quarter of the defaults were on local currency debt and three quarters were on foreign currency debt instruments.⁴⁹

As Exhibit 6 shows, the share of foreign currency loan defaults has fallen over time. This reflects the shift in sovereign financing from bank loan financing in the 1970s and 1980s (typically, syndicated bank loans) to bond financing in the 1990s and 2000s.

EXHIBIT 6

Sovereign defaults by instrument, 1983-2012



Source: Moody's, Standard & Poor's (2006), Reinhart and Rogoff (2009), and Sturzenegger and Zettelmeyer (2006).

48 Of the 131 defaults, 14.5% were by sovereigns rated by Moody's at the time of default. There have been another three defaults in 2013 so far – by Jamaica, Grenada and Cyprus.

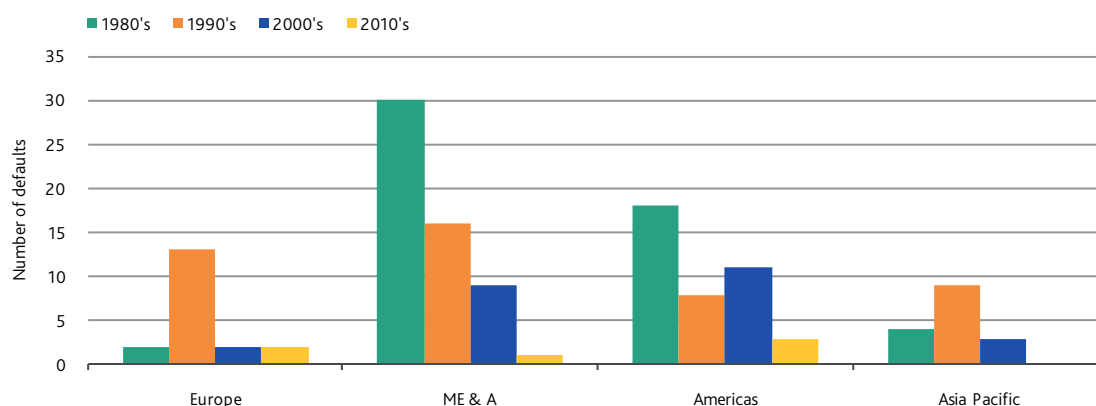
49 We include all available information in the study; however, we note that coverage of local currency defaults is likely less comprehensive in the 1980s period.

The peak in sovereign defaults in 1983 (in Exhibit 6) reflects the break out of the Latin American debt crisis in 1982-1983, which trickled through the rest of the decade. In the 1980s, Latin American and African countries suffered from major external shocks, including the 1979–80 “oil shock” that more than doubled the real world oil price, the rise in world interest rates in the early 1980s, the decline in world prices of other commodity exports, and the cutoff in lending from the international capital markets. Additionally, a number of Latin American countries suffered hyperinflations in the mid-1980s. These pressures translated into a large number of sovereign defaults during the 1980s.

The other peak of defaults came in the 1998-2002 period, following the Russian crisis, the Asian financial crisis, and the Argentinean crisis and the spillovers to a number of other emerging markets.

Over the whole period of the study, the Middle East and Africa region experienced the largest number of defaults, with 56 total defaults. This was followed by the Americas with 40 defaults, Europe with 19, and Asia Pacific with 16 defaults (Exhibit 7).

EXHIBIT 7
Sovereign defaults by region and decade, 1983-2012



Source: Moody's, Standard & Poor's (2006), Reinhart and Rogoff (2009), and Sturzenegger and Zettelmeyer (2006).

Since 1983, 43% of sovereigns have defaulted more than once

Of the countries that defaulted during the 1983-2012 period, 43% defaulted more than once. Exhibit 8 lists the nine issuers that experienced more than two defaults. Uruguay and Venezuela experienced the largest number of defaults during the study period, with four defaults each.^{50,51}

EXHIBIT 8
Sovereigns experiencing more than two defaults, 1983-2012

Country	Number of defaults during 1983-2012	Default year
Uruguay	4	1983, 1987, 1990, 2003
Venezuela	4	1983, 1990, 1995, 1998
Brazil	3	1983, 1986, 1990
Cote d'Ivoire	3	1983, 2000, 2011

50 In the whole sample, two countries experienced consecutive defaults which were one year apart and seven countries experienced subsequent defaults which were two years apart. All other events were three or more years apart.

51 See [Sovereign Defaults Series: Sovereign Debt Restructurings Provide Liquidity Relief But Often Do Not Reduce Debt Levels](#), November 2012 for more details on drivers of the sovereign re-default rate.

EXHIBIT 8

Sovereigns experiencing more than two defaults, 1983-2012

Country	Number of defaults during 1983-2012	Default year
Indonesia	3	1998, 2000, 2002
Myanmar	3	1985, 1987, 1997
Nigeria	3	1986, 1992, 2004
Sierra Leone	3	1983, 1986, 1997
South Africa	3	1985, 1989, 1993

Source: Moody's.

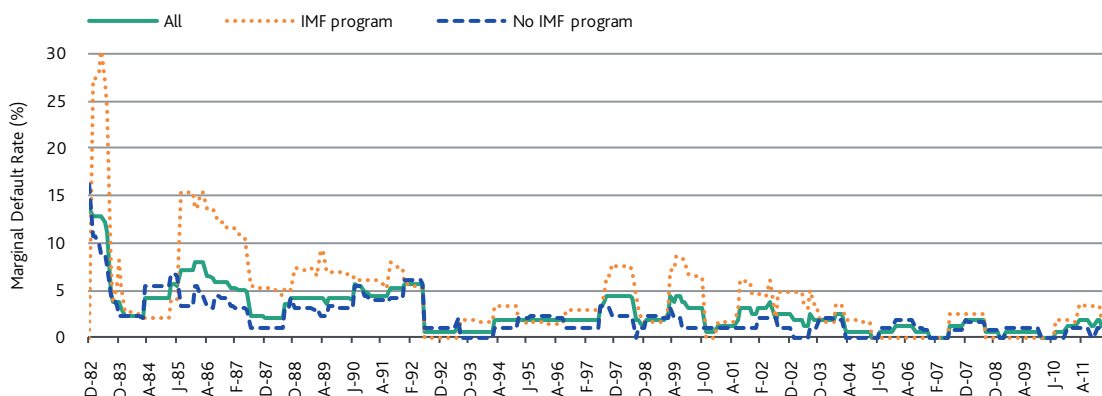
III. IMF Programs and the Sovereign Default Rate

The marginal default rate for sovereigns with IMF programs is consistently higher; the cumulative default rates are twice as high for countries in IMF programs, symptomatic of their vulnerabilities

In this next section, we investigate what is the association between the existence of an IMF program and sovereign default rates. We first look at the historical default rates for countries with and without IMF programs. We then employ regression analysis to investigate the relationship between the probability of default and participation in an IMF program controlling for selected country-specific characteristics.

In Exhibit 9, we calculate the marginal annual sovereign default rate, including both loan and bond defaults. We split the sample into two parts and calculate the default rate for sovereigns that have had an IMF arrangement in the prior two years and compare that to the default rate for sovereigns with no IMF programs. We see that the marginal default rate for sovereigns with IMF programs has been consistently higher than the default rate for sovereigns without programs for most of the last thirty years, symptomatic of the underlying credit vulnerabilities in the former group of countries.

EXHIBIT 9

Sovereign default rate with and without an IMF program, 1983-2012

Note: Annual marginal default rate, by monthly cohort. IMF program category includes countries with an IMF program in any of the prior 2 years.
Source: Moody's.

Further, Exhibit 10 presents one-year through ten-year issuer-weighted average cumulative default rates for sovereign issuers. As in the other Moody's default studies, cumulative default rates are calculated by averaging the experiences of issuer cohorts formed at monthly frequencies.⁵²

As Exhibit 10 shows, the overall sovereign bond and loan default rate is 2.6% over a one-year horizon, 10.2% over a five-year horizon and 16.8% over a ten-year horizon.⁵³

EXHIBIT 10

Issuer-weighted cumulative default rates, 1983-2012 (in %)

	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Year 8	Year 9	Year 10
Countries with no IMF program	2.06	3.84	5.40	6.75	7.97	9.17	10.30	11.36	12.34	13.21
IMF program countries	3.84	7.49	10.79	13.83	16.40	18.67	20.85	22.91	24.73	26.50
All countries	2.59	4.81	6.82	8.58	10.19	11.65	13.04	14.39	15.61	16.75

Note: Average cumulative default rates over one-year to ten-year horizons. IMF program category includes countries with an IMF program in any of the prior 2 years.

Source: Moody's.

More interestingly, we find that the 'IMF program' category default rate is almost twice as high as the 'no program' category default rate – at 3.8% vs. 2.1% over a one-year horizon and 16.4% vs. 8.0% over a five-year horizon. Moreover, the difference remains large over all time horizons.

Although new, the finding of a correlation between an IMF program and a higher risk of default is not surprising because countries approach the IMF when they are in a crisis and as debt restructuring is sometimes a precondition of the program. The elevated default risk for countries with a program reflects the underlying long-term credit challenges and the presence of risk factors that can cause sovereign defaults, such as banking crisis, very high debt burden, chronic economic stagnation, or institutional weaknesses. They are a reminder that adjustment programs, although supported by external funding, are difficult and lengthy, politically challenging, and not always successful in avoiding sovereign default.⁵⁴ Countries entering IMF programs still need to undergo difficult macroeconomic and fiscal adjustments and still need to restore sound fiscal balances and regain private capital market access.

The results are not a statement on whether IMF programs have been effective or not – in fact, our results show that IMF programs have often been successful in mitigating default risk. From all sovereigns that entered IMF programs, only 16.4% defaulted over a five-year horizon. The vast majority of sovereigns in programs did not default, even though most of them (excluding issuers in precautionary arrangements) would have entered programs in severe distress and with no access to private capital markets, indicating that IMF programs have often been effective in reducing the risk of default.

The role of IMF programs in crises is important and the availability of IMF loans has certainly increased the resilience of countries to 'sudden funding stops'. Moreover, IMF programs are often effective in reducing

⁵² The default rates are calculated based on cohorts of all issuers that exist at the start of a given month. The cohorts are dynamic in that they change based on whether issuers leave the cohort due to default or non credit-related reasons. While the cohort frequency is monthly, the accumulation periodicity remains 12 months, so that we track default rates over horizons of one year, two years, etc.

⁵³ The overall bond and loan sovereign default rate is higher than the bond default rate calculated in Moody's Sovereign Default Study, [Sovereign Default and Recovery Rates, 1983-2012](#), June 2013, but is comparable to the overall corporate bond and loan default rate.

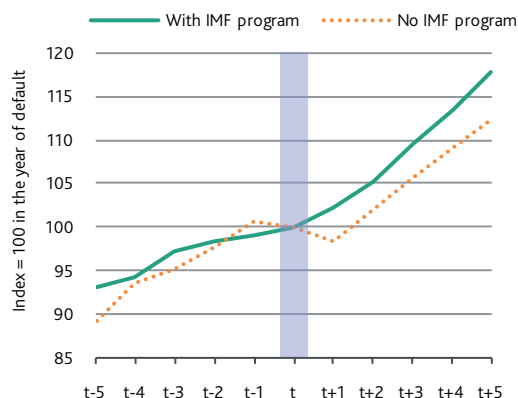
⁵⁴ An alternative explanation is that the adoption of an IMF program and the accompanying conditionality could work as a signal of country's willingness and ability to successfully reform that may induce other creditors to concede a rescheduling of the country's debt (Marchesi, S. and Thomas, J.P., IMF Conditionality as a Screening Device, *Economic Journal*, Vol. 109, pp. 111-125, 1999 and Marchesi, S., Adoption of an IMF Programme and Debt Rescheduling: An Empirical Analysis, *Journal of Development Economics* 70(2), pp. 403-423, 2003).

the macroeconomic impact of default (see Exhibit 11), for example by providing interim financing and supporting a more orderly restructuring process.

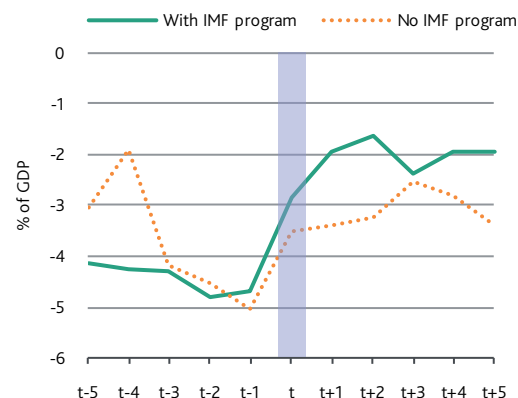
EXHIBIT 11

Real GDP and government fiscal balance around default

Average Real GDP Level Around Default



Average Fiscal Balance Around Default



Notes: t = year of default. IMF program category includes countries with an IMF program in any of the 2 years prior to or in the year of default. Sample includes 103 defaults, 66 accompanied by IMF programs and 37 outside of a program. Fiscal balance data is not available for a number of countries.

Source: IMF WEO.

Regression analysis: The difference in the probability of default remains significant after controlling for country-specific characteristics

Next, we show that the differences in the probability of default remain after controlling for country-specific characteristics. Logit regression analysis of the probability of default over five years as a function of controls for selected country characteristics and an IMF program participation index shows that IMF program participation is associated with a significant increase in the probability of default.

In line with data availability, the sample for our regression analysis includes the experience of 136 sovereigns over 1984-2012. We construct an index variable of whether a country defaults within a five-year horizon as our dependent variable. We control for country-specific characteristics in two ways: 1) by using the International Country Risk Guide (ICRG) index; and 2) by using country-specific controls for the variables that have been shown to be important in the literature on sovereign debt crises -- real GDP growth, GDP per capita, inflation, budget balance, government debt and current account balance.⁵⁵

Description of variables

Exhibit 12 describes the variables used in the regression analysis and the data sources. We employ a multivariate logit specification to estimate the probability of default. Given that default is a low-frequency event, a logit was preferred to a probit model. However, the regression results are robust to using the alternative probit specification.

⁵⁵ See, for example, the seminal work of Cantor, R. and Packer, F., [Determinants and Impact of Sovereign Credit Ratings](#), FRBNY Economic Policy Review, October 1996.

EXHIBIT 12

Description of variables in the regression analysis

Variable name	Definition	Unit of measurement	Data Sources
Default within 5 years	Was there a default within 5 years?	Indicator variable: 1= default; 0 = no default	Moody's
IMF program	Was there an IMF program?	Indicator variable: 1= IMF program; 0 = no program	IMF
ICRG index	Country risk index	0 to 100 scale: higher index = lower risk	PRS Group
Real GDP growth	Gross domestic product, constant prices	Percent change	IMF WEO
GDP per capita	Gross domestic product per capita, current prices	U.S. dollars	IMF WEO
Inflation	Average consumer prices	Percent change	IMF WEO
Budget balance	General government net lending/borrowing	Percent of GDP	IMF WEO
Government debt	General government gross debt	Percent of GDP	IMF WEO
CA balance	Current account balance	Percent of GDP	IMF WEO

Regression results

Exhibit 13 shows the results from the binary logit regression analysis.⁵⁶ We present two specifications: regressions (1) and (2) control for country characteristics using the ICRG index; and regressions (3) and (4) control for country characteristics using the individual variables for real GDP growth, GDP per capita, inflation, budget balance, government debt and current account balance.

We find that the IMF program index variable remains positive and highly significant across all specifications, indicating that for given credit characteristics, the probability of default increases conditional on being in an IMF program.⁵⁷ The ICRG index has a negative sign and is also highly significant, in line with expectations that issuers with better country risk measure default less often. Among the individual control variables, real GDP growth and GDP per capita have the expected negative signs and are significant at the 1% level, indicating that high growth and higher GDP per capita levels are associated with lower probability of default. Finally, the inflation, budget deficit, debt, and current account variables are not significant in the estimation.

The fit of the regression seems to be better when using the country-specific control variables rather than the overall ICRG index. The overall fit for specifications (3) and (4) is in the range obtained in previous research on the determinants of sovereign defaults.

Robustness checks

The regression results are not driven by the experience of lower-income countries and, if anything, are stronger for higher-income countries than for lower-income countries. In order to check that the estimation is not driven by the experience of low-income countries, we include in the regression specifications (2) and (4) an interaction term of GDP per capita with the IMF program index variable. We find that the interaction term has a positive coefficient and is highly significant, indicating that the correlation of IMF program participation and the probability of default is non-linear and stronger for higher-income countries.

⁵⁶ The regression is estimated in Eviews, using quadratic hill-climbing as the maximum likelihood estimation algorithm.

⁵⁷ Our results are consistent with the only other recent empirical analysis of the relationship between IMF programs and sovereign defaults we are aware of: using a smaller sample of 57 countries over 1975-2008, Jorra (2010) finds that IMF programs significantly increase the risk of subsequent sovereign defaults by approximately 1.5 to 2 percentage points.

Further, the regression results are robust to the chosen time horizon for the probability of default and to whether the logit or probit estimation framework is used. Also, the regression results are robust to using lagged control variables. As Exhibit 13 shows, the regression results are also robust to whether we capture country characteristics in a country risk index or via specific credit metrics of growth, GDP per capita, inflation, budget deficit, debt and current account. We believe, however, that the residual correlation between default risk and IMF program participation might still proxy for more-difficult-to-measure, and thus omitted, variables.

The specific channels of interaction between the decision of a country to participate in an IMF program and the impact IMF programs have on economic and fiscal outcomes and default risk are outside of the scope of this report and would represent an interesting subject for future research.

EXHIBIT 13

Regression results: Conditional on being in an IMF program, with given credit characteristics, does the probability of default increase?

Variable	Dependent Variable (Default within 5 years index)							
	(1) Coefficient	(1) z-Statistics	(2) Coefficient	(2) z-Statistics	(3) Coefficient	(3) z-Statistics	(4) Coefficient	(4) z-Statistics
Intercept	0.860***	(3.221)	1.131***	(3.632)	-2.501***	(-8.835)	-2.262***	(-7.735)
IMF program	0.726***	(6.122)	0.635***	(4.789)	1.098***	(4.619)	0.699**	(2.520)
ICRG index	-0.056***	(-12.896)	-0.061***	(-12.296)				
GDP per capita* IMF program			0.000035**	(2.063)			0.00011***	(2.665)
Real GDP growth					-0.124***	(-5.733)	-0.121***	(-5.590)
GDP per capita					-0.000095***	(-4.341)	-0.00014***	(-4.202)
Inflation					0.00043	(0.121)	-0.000047	(-0.013)
Budget balance					-0.0086	(-0.430)	-0.0074	(-0.368)
Government debt					0.00034	(0.214)	0.0003	(0.193)
CA balance					0.020*	(1.725)	0.019	(1.607)
Total observations	3668		3454		2289		2289	
Defaults (Dependent variable =1)	344		306		110		110	
Likelihood ratio index (McFadden R-squared)	0.109		0.116		0.162		0.170	
Standard error of regression	0.284		0.276		0.207		0.206	
Likelihood ratio (LR) statistics	249.129		239.296		143.098		149.827	
Probability of LR statistics	0.000		0.000		0.000		0.000	

Notes: * Significant at the 10% level. ** Significant at the 5% level. *** Significant at the 1% level.
Source: Moody's.

IV. Conclusions

The finding that controlling for selected country-specific characteristics, countries with IMF programs have historically defaulted more often than countries without IMF programs suggests that, over the medium term, the existence of an IMF program is a signal of credit stress. The results reflect the fact that countries approach the IMF when they are in crisis and face significant underlying credit challenges -- including the presence of risk factors that can cause sovereign defaults, such as banking crisis, very high debt burden, chronic economic stagnation, or institutional weaknesses. The results are also a reminder that adjustment programs, although supported by external funding, are difficult and lengthy, politically challenging, and not always successful in avoiding sovereign default.

Our results also suggest that IMF programs have generally been successful in mitigating default risk. From all sovereigns that entered IMF programs, only 16.4% defaulted over a five-year horizon. The fact that the vast majority of sovereigns did not default, even though most of them (excluding issuers in precautionary arrangements) would have entered programs in severe distress and with no access to private capital markets, indicates that IMF programs have often been effective in reducing the risk of default. Moreover, in cases where default has not been avoided, IMF programs were often effective in reducing the macroeconomic impact of default, for example by providing interim financing and supporting a more orderly restructuring process.

Nevertheless, IMF programs are by no means a cure-all and they may not always prevent debt restructurings. Countries entering IMF programs still need to undergo difficult macroeconomic and fiscal adjustments and still need to restore sound fiscal balances and regain private capital market access. The challenges of restoring fundamental creditworthiness and implementing successful economic and fiscal adjustments are underscored by the fact that the default risk of sovereigns in IMF programs remains, with 16.4% in default within five years, and consistent with Moody's practice of generally assigning non-investment-grade ratings to program countries.

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Appendix I: Overview of IMF Programs ⁵⁸

IMF lending facilities fall broadly into three categories:

- 1) Facilities on concessional terms for low-income countries,
- 2) Non-concessional loans, and
- 3) Emergency assistance for recovery from natural disaster and conflict.

Facility	Description	Interest rate	Grace period	Final maturity
Facilities on Concessional Terms for Low-Income Countries ⁵⁹				
Extended Credit Facility (succeeded the Poverty Reduction and Growth Facility (PRGF))	The IMF's main tool for providing medium-term support to low-income countries with protracted balance of payments problems.	zero	5½ years	10 years
Standby Credit Facility (SCF) (replaced the High-Access Component of the Exogenous Shocks Facility (ESF))	Provides financial assistance to low-income countries with short-term balance of payments needs. Can be used in a wide range of circumstances, including on a precautionary basis.	zero	4 years	8 years
Rapid Credit Facility (RCF) (streamlines the IMF's emergency assistance for low-income countries)	Provides rapid financial assistance with limited conditionality to low-income countries facing an urgent balance of payments need. Can be used flexibly in a wide range of circumstances.	zero	5½ years	10 years
Non-Concessional Loans ⁶⁰				
Stand-By Arrangements (SBA)	The bulk of non-concessional IMF assistance. Designed to help countries address short-term balance of payments problems. Program targets are designed to address these problems and IMF disbursements are conditional on achieving these targets ('conditionality'). The length is typically 12–24 months. May be provided on a precautionary basis—where countries choose not to draw upon approved amounts but retain the option to do so if conditions deteriorate—both within the normal access limits and in cases of exceptional access. The SBA provides for flexibility with respect to phasing, with front-loaded access where appropriate.	market-related; large loans carry a surcharge	repayment is due within 3¼–5 years of disbursement	
Extended Fund Facility (EFF)	Established in 1974 to help countries address longer-term balance of payments problems reflecting extensive distortions that require fundamental economic reforms. Arrangements under the EFF are thus longer than SBAs—usually 3 years.	market-related; large loans carry a surcharge	repayment is due within 4½–10 years of disbursement	

⁵⁸ Source: imf.org.

⁵⁹ The new concessional facilities for low-income countries were established in January 2010 as part of a broader reform to make the IMF's financial support more flexible and better tailored to the diverse needs of low-income countries. Access limits were approximately doubled compared to pre-crisis levels and financing terms were made more concessional, with the interest rate reviewed every two years. All facilities support country-owned programs aimed at achieving a sustainable macroeconomic position consistent with strong and durable poverty reduction and growth.

⁶⁰ All non-concessional facilities are subject to the IMF's market-related interest rate and large loans carry a surcharge. The interest rate is based on the SDR interest rate, which is revised weekly to take account of changes in short-term interest rates in major international money markets. The amount that a country can borrow from the IMF varies depending on the type of loan, but is typically a multiple of the country's IMF quota. This limit may be exceeded in exceptional circumstances. The Flexible Credit Line has no pre-set limit.

Facility	Description	Interest rate	Grace period	Final maturity
Flexible Credit Line (FCL)	For countries with very strong fundamentals, policies, and track records of policy implementation. Particularly useful for crisis prevention purposes, although it can also be used for responding to a crisis. FCL arrangements are approved for countries meeting pre-set qualification criteria. The length is 1 or 2 years (with an interim review of continued qualification after 1 year). Access is determined on a case-by-case basis, is not subject to the normal access limits, and is available in a single up-front disbursement rather than phased. Disbursements are not conditioned on implementation of specific policies. There is flexibility to either draw on the credit line at the time it is approved or treat it as precautionary.	market-related; large loans carry a surcharge	repayment is due within 3¼-5 years of disbursement	
Precautionary Credit Line (PCL)	The PCL can only be used for crisis prevention purposes by countries with sound fundamentals and policies, and a track record of implementing such policies. While they may face moderate vulnerabilities that may not meet the FCL qualification standards, they do not require the same large-scale policy adjustments normally associated with traditional SBAs. The PCL combines qualification (similar to the FCL) with focused ex-post conditions that aim at addressing the identified vulnerabilities in the context of semi-annual monitoring. It can have the length of between 1 and 2 years. Access can be front-loaded, with up to 500% of quota made available on approval and up to a total of 1000% of quota after 12 months subject to satisfactory progress in reducing vulnerabilities. While there may be no actual balance of payments need at the time of approval, the PCL can be drawn upon should such a need arise unexpectedly.	market-related; large loans carry a surcharge		
Emergency Assistance for Recovery from Natural Disaster and Conflict				
Emergency assistance	The IMF provides emergency assistance to all members that have experienced a natural disaster or are emerging from conflict.	basic rate of charge	loans must be repaid within 3¼-5 years	

Appendix II: Sovereign Defaults on Private-Sector Bonds and Bank Loans Since 1983

Issuer	Local Currency Debt	Foreign Currency Bonds	Foreign Currency Loans
Albania			1991
Algeria			1991
Angola			1985
Angola	1992		
Antigua & Barbuda	1998		
Antigua & Barbuda			1996
Argentina	1989	1989	
Argentina	2001	2001	2001
Belize		2006	
Belize		2012	
Bolivia			1986
Bolivia		1989	
Bosnia And Herzegovina			1992
Brazil			1983
Brazil	1986		
Brazil	1990		
Bulgaria			1990
Burkina Faso			1983
Cameroon			1985
Cameroon	2004		
Central African Republic			1983
Chile			1983
Congo, Republic of			1983
Cook Islands			1995
Costa Rica		1984	
Côte d'Ivoire			1983
Côte d'Ivoire		2000	
Côte d'Ivoire	2011	2011	
Croatia			1992
Croatia	1993		
Cyprus	2013		
Dominica	2003		2003
Dominican Republic		2005	2005
Ecuador	1999	1999	
Ecuador		2008	
Egypt			1984
Ethiopia			1991
Gabon			1986
Gabon	1999		1999
Gambia			1986
Ghana			1987

Issuer	Local Currency Debt	Foreign Currency Bonds	Foreign Currency Loans
Greece	2012	2012	
Greece	2012		
Grenada	2004	2004	2004
Grenada	2013	2013	
Guatemala			1986
Guatemala		1989	
Guinea			1986
Guinea			1991
Guinea-Bissau			1983
Indonesia			1998
Indonesia			2000
Indonesia			2002
Iraq			1987
Jamaica			1987
Jamaica	2010		
Jamaica	2013		
Jordan			1989
Kenya			1994
Kenya			2000
Kuwait	1990		
Liberia	1989		
Macedonia			1992
Madagascar	2002		
Malawi			1988
Mauritania			1992
Moldova		2002	
Mongolia	1997		
Morocco			1983
Morocco			1986
Mozambique			1983
Myanmar	1985		
Myanmar	1987		
Myanmar			1997
Nauru			2002
Nicaragua	2003		
Nicaragua	2008		
Niger			1983
Nigeria		1986	
Nigeria		1992	
Pakistan			1998
Pakistan		1999	
Panama			1983
Panama		1987	

Issuer	Local Currency Debt	Foreign Currency Bonds	Foreign Currency Loans
Paraguay			1986
Paraguay	2003	2003	
Peru			1983
Philippines			1983
Romania			1986
Russia (Soviet Union)			1991
Russia	1998	1998	
Rwanda	1995		
São Tomé And Príncipe			1987
Senegal			1990
Senegal			1992
Serbia			1992
Seychelles			2000
Seychelles		2008	
Sierra Leone			1983
Sierra Leone			1986
Sierra Leone	1997		
Slovenia			1992
Solomon Islands	1996		
Solomon Islands			1998
South Africa			1985
South Africa			1989
South Africa			1993
Sri Lanka	1996		
St. Kitts and Nevis	2011	2011	2011
Sudan	1991		
Suriname	2001		
Tanzania			1984
Togo			1988
Togo			1991
Trinidad & Tobago			1988
Turkey	1999		
Ukraine	1998	1998	1998
Ukraine		2000	
Uruguay		1983	1983
Uruguay			1987
Uruguay			1990
Uruguay		2003	
Venezuela			1983
Venezuela			1990
Venezuela	1998		
Vietnam			1985
Yemen			1985

Issuer	Local Currency Debt	Foreign Currency Bonds	Foreign Currency Loans
Yugoslavia		1983	1983
Yugoslavia		1992	
Zambia			1983
Zimbabwe			2000
Zimbabwe	2006		

Notes: Database includes default on private sector debt, including local currency and foreign currency bonds and bank loans (e.g., defaults on both domestic and external debt are included). Default on official sector debt is not included. We do not include defaults on sovereign-guaranteed debt or other debt issued by public enterprises. The database includes defaults by both Moody's-rated issuers and issuers not rated by Moody's at the time of default.

Sovereign default is defined as: i) a missed or delayed disbursement of a contractually-obligated interest or principal payment (excluding missed payments cured within a contractually allowed grace period); or ii) a distressed exchange whereby (1) an obligor offers creditors a new or restructured debt, or a new package of securities, cash or assets that amount to a diminished financial obligation relative to the original obligation; and (2) the exchange has the effect of allowing the obligor to avoid a payment default in the future.

Sources: Moody's, Standard & Poor's (2006), Reinhart and Rogoff (2009), and Sturzenegger and Zettelmeyer (2006).

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