Achieving Fiscal Sustainability in Jamaica
The JDX and Beyond

CaPRI
Caribbean Policy Research Institute
Taking Responsibility

REPORT
Damien King & Anika Kiddoe
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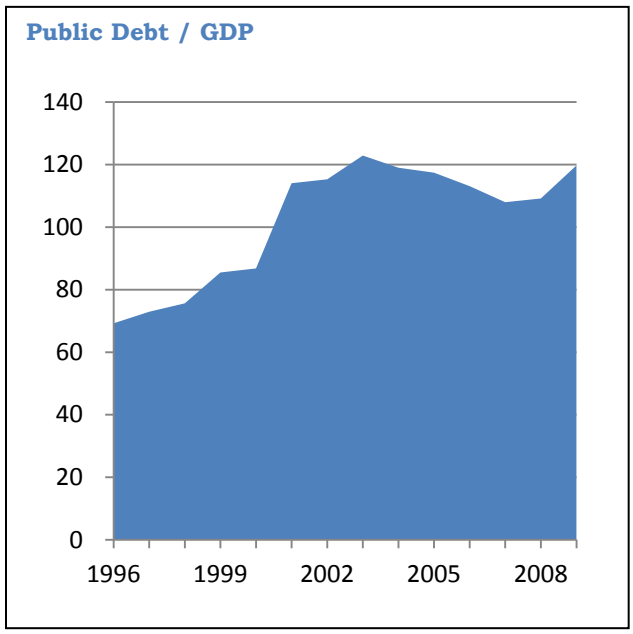
CONTENTS

EXECUTIVE SUMMARY

The Jamaican economy has suffered for the past decade from a crushing debt burden which arose largely between 1996 and 2003 when the debt peaked at 123 percent of GDP (See Figure). Since then, the relative level of the debt has fluctuated, but remained high. Servicing that debt has siphoned off exactly half the government's revenue over the same period. Consequently, correspondingly fewer resources have been left over to meet the country's public service needs and to allow investment in physical and social capital, resulting in pitiful rates of economic growth.



For all of the last ten years, the debt burden has kept Jamaica on the brink of crisis, vulnerable to the threat that every natural disaster, adverse interest rate movement, and external economic event will tip the fiscal balance into unsustainability. Fiscal sustainability was finally breached during the last fiscal year when the share of revenue earmarked for interest payments reached an unprecedented 66 percent. This crisis precipitated the reengagement with the International Monetary Fund in 2009, the passage of a large tax package in December of the same year, the subsequent divestment of the perennially loss-making national airline, and, the riskiest and most dramatic step of all, the execution of the Jamaica Debt Exchange (JDX) in February 2010.

JDX in the Context of Other Restructurings

A review of other country experiences with debt restructuring revealed a number of criteria by which we can assess the design and execution of the JDX and its likely impact on the economy. The most significant lesson to be drawn was that the timing of a debt restructuring, relative to the date of default, matters. Post-default restructurings were associated with far more significant debt relief, in terms of nominal principal reduction, than the pre-emptive variety. Also, post-default debt exchanges resulted in more significant net present value reductions than their pre-emptive counterparts. However, post-default restructurings tended to produce deep economic contractions, notwithstanding the fact that these economic contractions were short-lived. Another significant lesson was that debt restructurings tend to be less effective, in terms of reducing the probability of future default, if there are solvency issues to be resolved. It was also revealed that a sovereign's demonstration of "willingness to pay" affects the credit ratings on its debt, and the consequent borrowing costs and level of credit flows. Finally, creditors value a debtor's ability to

conduct a restructuring in an orderly manner. Hence, the extent to which this is demonstrated, in particular by means of pre-emptive swap, would have some impact on the length of time it takes for credit ratings to improve and for borrowing costs to return to pre-crisis levels.

In February, the Government of Jamaica completed a pre-emptive debt exchange programme with a net present value discount in order to stave off a likely explicit default on its domestic debt. This was the first time that a bond restructuring programme was to take place for Jamaica. The swap consisted of the entire stock of domestic debt, 345 instruments, which were consolidated into a series of 24 new instruments. The targeted bonds amounted to 65 percent of GDP (over J$700b) or 47 percent of public debt. The new bonds have extended maturities and lower interest rates. The amount of principal to be repaid was unchanged, which indicated that the focus of the debt exchange was on debt service relief (liquidity) rather than debt reduction (solvency). Average debt maturity was extended by 2½ years, while the average coupon rate was significantly reduced from approximately 17 percent to 11 percent. The exercise was restricted to domestic debt instruments largely because interest rates on domestic bonds were deemed to be unjustifiably high and so were excessively burdensome to the government, a consideration that did not apply to the external debt.

The fact that the focus of the Jamaica Debt Exchange was on liquidity rather than solvency, along with the pre-emptive timing of the swap, the omission of external debt, and the government's continued commitment to the idea of willingness-to-pay, will likely minimize the reputational and real cost of the restructuring. The swiftness of the ratings upgrades on the domestic debt by both major ratings agencies is evidence of quickly renewed faith in Jamaica's fidelity to debt service. Based on other country experiences, Jamaica can expect that it will have early access to international capital markets going forward, with only a minimal, short-lived interest penalty, if any at all, mitigated by assistance received from multilateral lending agencies. Finally, there should be no default-induced GDP contraction. Altogether, the swap was the minimum necessary restructuring, appropriately designed and skillfully executed.

The Impact of the JDX and Other Measures

But how big a difference will it make to the country's debt dynamics? From 1996 to 2003, the period during which all of the current indebtedness arose, the debt/GDP ratio rose by an average of eight percentage points per year. Tax revenue exceeded expenditure on programmes and the wage bill every year in that period. This meant that the government's ordinary "house-keeping," or basic, balance was in surplus and would have a contribution to debt *reduction*. During the same period, capital expenditure was deliberately squeezed, so the capital balance would have contributed little to debt accumulation. Even interest on the debt contributed only marginally to the accumulation of debt. The reason for this surprising result is that more than half of the interest being paid represented compensation for inflation and therefore could have been paid by the government out of the automatic rise in nominal tax revenue as prices rose. Revaluation of existing debt obligations, due to exchange rate movements and nominal GDP changes had a benign effect on the debt stock, pulling the debt downward.

The factor that overwhelmingly explains the doubling of the debt/GDP ratio in the years up to 2003 is the assumption by the government of liabilities contracted outside of central government, accounting for a massive 13 percentage points of debt on average each year. The vast majority of this amount was accounted for by the fiscal resolution financial crisis of the late 1990s, but losses and debts of wholly or partially owned public enterprises also contributed.

Even during the period from 2004-05 to 2008-09, when the public debt as a percentage of GDP fell from its peak of 123 percent to 108, the absorption of non-central government liabilities continued to be the largest negative influence, but not quite offsetting the beneficent effect of unexpected inflation which lowered the debt/GDP ratio only by inflating the value of the denominator.

Over the course of the last fiscal year, however, the debt/GDP ratio leapt by an astonishing 11 percentage points. From the average, nominal, implicit interest rate of almost 14 percent that had obtained since 1996, the rate rose to 17.5 percent last fiscal year. At the same time, inflation fell to near 10 percent. The effect of this confluence of events was that the real cost of debt service rose quickly and significantly, precipitating the technical default and restructuring that was the Jamaica Debt Exchange.

The reduction in the debt burden and the improvement in the fiscal balance, post-JDX, can be extrapolated from the effect of the JDX on debt service and the expenditure and revenue estimates in the fiscal budget promulgated this month. The implicit interest rate on the debt will fall to 10.5 percent, which will be its lowest rate in all the years included in the present analysis. That, in turn, will reduce the share of revenue devoted to interest payments from the stratospheric 66 percent last year to a relative modest 43 percent for 2010-11. The budgeted expenditure contraction, if met, could produce a large primary surplus, which in combination with lower debt service, will reduce the fiscal deficit by almost five percentage points of GDP. The JDX clearly makes a significant contribution to the future path of the debt, potentially turning around a rapidly rising debt/GDP ratio.

Conclusion

Examining the Jamaica Debt Exchange in the context of the lessons from similar restructurings worldwide, combined with an understanding of the factors that have been driving changes in the stock of Jamaican public debt, reveals some clear lessons for the future.

- The primary reason for the country's indebtedness is the assumption of liabilities contracted outside of central government. And there is a pervasive tendency for governments to accumulate such risks incrementally over time. Disciplined and intelligent management of contingent liabilities in the future is a key to long term debt reduction.
- The Jamaica Debt Exchange has turned an unsustainable fiscal situation into a potentially sustainable one. And because the exchange was well-designed, properly timed, and skillfully executed, the reputational damage, production dislocation, and interest penalty will likely be minimal. The swiftly awarded

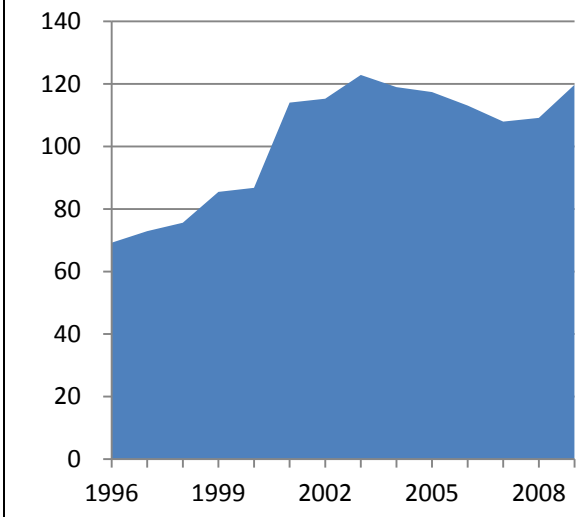
higher domestic debt ratings by both Standard & Poor's and Moody's is evidence of this.

- The positive benefit of the JDX is insufficient to produce falling debt without the government achieving expenditure reductions or enacting meaningful tax reform to garner additional revenue without raising existing average tax rates.

With the JDX, much has been accomplished to pull the government back from an unsustainable fiscal trajectory. But the fiscal accounts remain vulnerable. Without difficult public sector rationalization, tax reform, and in particular, disciplined management of contingent liabilities, the likelihood of another fiscal crisis in the future is high.

The Jamaican economy has suffered for the past decade from a crushing debt burden. The debt was accumulated largely between 1996, when the debt/GDP ratio was at a low of 69 percent, and 2003, when it peaked at 123 percent (Figure 1).[1] Since then, the relative level of the debt has fluctuated, but remained high. The country's average debt level over the last ten years has been 115 percent of GDP.

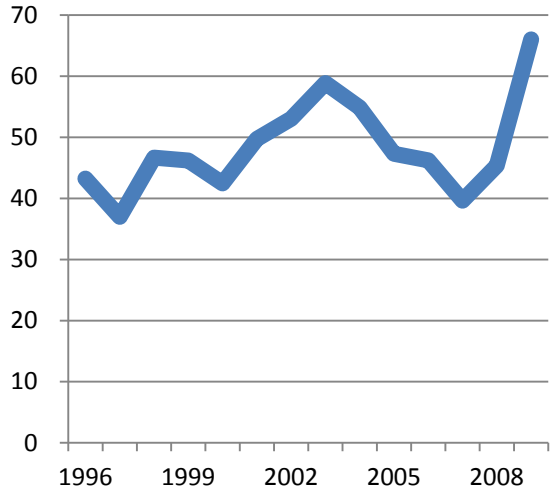
Figure 1: Public Debt / GDP



Servicing that debt has siphoned off exactly half the government's revenue over the same period. Consequently, correspondingly fewer resources have remained to meet the country's public service needs and to allow investment in physical and social capital. The result is crumbling, inadequate infrastructure, declining quality and quantity of public services, and rising rates of crime and violence. It is within this context that sustained economic growth has continued to elude Jamaica.

For all of the last ten years, the debt burden has kept Jamaica on the brink of crisis, vulnerable to the threat that every natural disaster, adverse interest rate movement, and external economic event will tip the fiscal balance into unsustainability. On a few occasions, most notably in 2003, that fragile sustainability was threatened. Capital flight motivated by missed budget targets motivated the central bank to raise benchmark rates to levels that the Finance ministry could not support. The share of revenue going to interest payments rose to 58 percent (Figure 2).

Figure 2: Interest on Public Debt / GDP



Fiscal sustainability was breached once again during 2009-10 when the share of revenue earmarked for interest payments reached an unprecedented 66 percent (again, Figure 2). This marked the government's most serious fiscal crisis in

[1] The debt/GDP ratios in this document reflect the revision to the system of national accounting that was adopted by the Statistical Institute of Jamaica in 2008, in which revision GDP estimates rose by approximately 15 percent for all years.

recent history, and precipitated the reengagement with the International Monetary Fund.

Notwithstanding much public debate and many government promises to grapple with the debt problem and diminish the vulnerability of the fiscal accounts, almost a decade has passed since the debt/GDP ratio topped a hundred percent, under two administrations, with little being done. Since December 20009, however, the Golding administration has executed a number of initiatives that potentially could represent a turning point in addressing Jamaica's high debt burden. The first of these was a large tax package, announced in December 2009, which was expected to bring in $21b. The divestment of the national airline after 45 years, 40 of them at a financial loss, is another part of that effort. The budgeted expenditure contraction, which may be as much as 15 percent in real (purchasing power) terms in 2010-11, is yet another element. But the most dramatic, and certainly the riskiest, move in the fiscal management effort is the Jamaica Debt Exchange (JDX).

This paper explores the extent to which these efforts by the administration are sufficient to make a material difference to Jamaica's fiscal sustainability, such as to create a climate of macroeconomic stability, reduced vulnerability, gradual debt reduction, and eventually, economic growth. The analysis comprises two separate issues. First, we assess the risks and benefits of the JDX, drawing upon the experience of debt restructurings across the world in the recent past. Second, we examine the evolution of Jamaica's debt stock in order to distill the factors that drive the debt up or down. This will allow a projection of the extent to which recent efforts will affect the evolution of the debt as well as provide a guide as to what factors require the most attention in managing the debt going forward. Finally, we identify where other efforts need to be made to leverage the benefit of the JDX so that the country avoids facing another fiscal crisis in a few year's time.

An Assessment of the JDX

This section lays out the historical and global context for Jamaica's recent exchange of domestic debt instruments. The review of other country's experiences allows for informed, comparative appreciation of the particular design and execution of the Jamaica Debt Exchange.

A History of Sovereign Debt Defaults and Restructurings

In 2008, Borensztein and Panizza compiled a record of sovereign technical debt defaults spanning 200-years from 1824 to 2004.[2] The cases were distributed across five world regions: Latin America (162), Africa (63), Asia (22), Eastern Europe (32), and Western Europe (14).[3,4] Among the developing regions, Asia showed the lowest

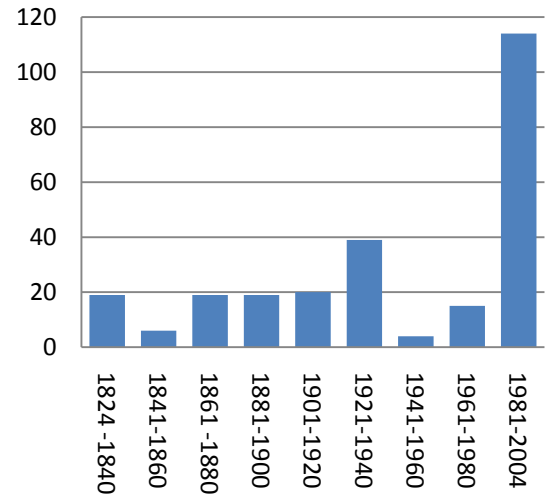
[2] The term "technical debt defaults" refers to both pre-emptive debt restructurings (in which the terms of debt obligations are changed in order to avoid non-payment) and explicit defaults (the missing of payments).

[3] Borensztein and Panizza (2008) include the Caribbean in the Latin America category.

[4] There is no record of technical default for Canada. Some may argue that the United States did technically default once in the midst of the Great Depression when creditors were paid in dollars instead

number of technical defaults. Latin America's prodigious number is largely attributed to the fact that many of the countries in the region gained independence and access to the international capital markets from as early as the 19th century, at least 100 years before the decolonization of what are today African nation states. There have been no technical defaults in any Western European country since 1941 (which coincides closely with the establishment of the Bretton Woods System). This accounts for that region having the lowest number of incidents.[5] Figure 3 illustrates the worldwide historical frequency of technical debt defaults.

Figure 3: Sovereign Defaults Worldwide



Sturzenegger and Zettelmeyer (2006) noted that default episodes tend to happen in clusters, and that they follow the boom and bust cycle of international capital flows. They distinguished eight lending booms since the early 19th century. As Borensztein and Panizza (2008) pointed out, the first cluster of technical defaults followed the lending boom which began with the newly acquired independence of Latin American countries. A more dramatic default wave, occurring in the 1921-1940 period, was associated with the Great Depression and the Second World War. Most developing countries completely lost access to international capital markets by the end of the War, a situation which remained until the 1960s.

The lending boom which occurred after the 1973 oil shock (closely following the breakdown of Bretton Woods) represented a key turning point in the history of sovereign debt defaults. As Grabbe (1996) noted, prior to the first round of oil price increases, non-OPEC developing countries had run modest current account deficits. With the rise in oil costs, many nations opted to continue their pace of energy consumption and financed it with international borrowing. Hence, the accumulation of financial assets by OPEC countries during the 1970s was mirrored by an accumulation of foreign debt by non-OPEC developing countries. According to Borensztein and Panizza (2008), this lending boom was followed by a chain of technical defaults that climaxed with 74 defaults from 1981 to 1990. Once again, the flow of credit to developing countries was cut off. Out of this restructuring period came the sovereign bonds referred to as Brady Bonds – a menu of partly-collateralized bonds issued, mostly by Latin American countries, in exchange for defaulted bank loans. The Brady Plan ushered in a new lending boom to developing countries after

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of the contractually stipulated gold. However, with there being only one potential data point, the literature on sovereign default generally does not include North America as a region.

[5] In the period 1824-1940, Western Europe ranked second in the number of technical defaults, behind Latin America.

1989.[6] But, according to Grabbe (1996), this latest lending boom was facilitated by globalization – specifically, the deregulation and liberalization of capital markets during the 1980s.

The Impact of The Current Global Recession

The current global recession, which began in 2008, has produced a surge of debt restructurings in the international capital markets and has increased the popularity of debt exchanges in particular. In the United States, corporate debt exchanges for 2008 were almost double that of the previous 24 years combined.[7] This has been attributed, in part, to an unprecedented bulge in debt maturities that is expected to occur by 2011.[8] On one hand, the recession itself has meant that corporate debtors may not be likely to meet previously set performance targets. Additionally, the impending spike in maturities combined with tight credit markets, means that many of them suspect that they may not be able to generate sufficient cash flow to meet existing debt obligations. By pre-emptively exchanging old bonds for new ones with more manageable repayment schedules, they are attempting to build a bridge across the cash crunch period. However, liquidity may not be the only concern for corporate debtors wading through this global recession. If, for instance, a particular debt exchange does not only involve the rescheduling of payments, but also alterations to the amount of principal itself, this would be a clear indication of underlying concerns regarding solvency.

Willingness to Pay

The act of restructuring debt is not one that may be done flippantly, if a debtor is to maintain the reputation of being *willing* to repay debts. Creditors must be convinced that the alternative of default is highly probable and that the restructuring is not being done out of convenience. In other words, the restructuring must arise out of an inability to pay, and not unwillingness to pay. This distinction is crucial to being able to access credit in the future. (See Friedman, 2000.)

The dramatic impact of the current global recession on corporate debtors is relevant to our discussion for a number of reasons. Firstly, governments access credit from the same international capital markets as large corporations.[9] Secondly, governments must satisfy the same conditions that businesses do and they are not immune to the economic environment in which corporate entities operate. On the contrary, since the performance of economies would reflect the aggregated impact of the recession on the businesses within them, governments (just like companies) would have to have re-

[6] The Brady Plan was the initiative of the then U.S. Treasury Secretary Nicholas Brady. It included the issuance of Brady Bonds but also emphasized economic reform (such as deficit reduction, the removal of price controls and the dismantlement of trade protection policies) in the debtor countries and requested that commercial banks forgive some debt as an incentive for compliance to those reforms. See Grabbe (1996).

[7] Altman and Karlin (2009).

[8] See Aubin (2009).

[9] Either through direct initiatives, or indirectly, when they borrow from domestic institutions that, in turn, access the required capital abroad.

assessed their own performance targets during this recession, with regard to revenue generation and collection. With a decline in economic activity, revenue inflows may not be sufficient for them to continue to meet their debt obligations. Indeed, the current recession, along with tight conditions in the international capital markets, *has* led a number of sovereigns to pursue debt restructuring programmes, and has elevated the risk of default in others.[10]

It is important to note that, as in the case of corporate debtors, liquidity may not be the only concern for sovereign debtors during this recession. It may not be obvious how solvency would apply to governments (since they don't "go out of business") but the issue is relevant to sovereign nations in this sense: for a given level of debt to be sustainable, the net present value of the expected future income stream associated with a country's assets (which is equivalent to the *value* of the country's assets) must be sufficient to cover the existing level of debt.[11] Therefore the very design of any given sovereign debt restructuring programme will give an indication as to whether that country was contending with only liquidity or, also, solvency challenges.

Given the foregoing discussion, it is clear that in the context of debt management, governments are hardly different from corporate entities. They operate in the same economic environment, they access the same capital markets, and, whether governments like it or not, capital markets treat them like businesses. Given these three germane similarities, if we evaluate the JDX in the broad context of the current global wave of debt restructuring, it cannot be accurately described as an extraordinary event.

Recent Sovereign Debt Restructurings

The Scope of Debt Restructurings

In 2006, the International Monetary Fund assessed the recent experiences of eight developing countries with debt restructurings, specifically, Argentina (2001 and 2005), the Dominican Republic (2005), Ecuador (1999 - 2000), Moldova (2002 and 2004), Pakistan (1999), Russia (1998 – 2000), Ukraine (1998-2000) and Uruguay (2003).[12] Where liquidity, rather than solvency, was identified as the main concern, the focus was on debt service relief rather than debt reduction. The most significant lesson that may be drawn from other countries' experiences is that the timing of a debt restructuring, relative to the date of default, matters. Six of the country cases involved pre-emptive restructurings. All eight involved debt exchanges which ultimately

[10] Ecuador (post-default) conducted a debt "buyback" in 2009, while Jamaica (pre-default) and the Seychelles (post-default) executed debt exchange programmes in early 2010. The risk of default for a number of other countries (especially Portugal, Italy, Ireland, Greece and Spain, commonly referred to as the PIIGS) is also high at this time. See Cullen (2010) and Blackstone et al. (2010).

[11] Therefore, although technically a country cannot go bankrupt and dispose of *all* its assets in order to remunerate its creditors equitably, it can put itself in a position where, based on the NPV of the expected future income stream, it is no longer viable for new credit to be extended to the country, and at that point it would be considered insolvent.

[12] All of the countries had an IMF arrangement when they restructured their external debt. Ecuador did not have a Fund-supported programme prior to the restructuring of its domestic debt, but a programme was agreed on prior to the restructuring of external debt in the same year.

Table 2: Recent Restructurings: Debt Affected

		Percent of GDP	Percent of public debt
Pre-emptive			
Ukraine	1998-2000	12.8	20.9
Pakistan	1999	1.0	1.0
Argentina	2001	30.0	48.1
Megaswap	May-Jun 2001	11.0	17.6
Phase 1	Nov-Dec 2001	19.0	30.5
Moldova	2002	2.4	3.0
Uruguay	2003	48.3	49.3
Dominican Republic	2005	7.0	14.3
Post-default			
Ecuador	1999-2000	49.4	45.0
Russia	1998-2000	23.7	39.3
Moldova	2004	4.3	8.9
Argentina *Global Debt Exch.*	2005	59.7	53.1

Source: IMF (2006)

included external debt. Also, six of the country cases either involved Paris Club rescheduling or other bilateral agreements.[13] Table 2 summarizes the scope of the various cases by comparing the debt affected to the level of GDP and public debt, respectively.

As might be expected, post-default restructurings involved larger debt reductions than the planned, pre-emptive cases. Table 1 shows the effect of the two types on the (nominal) principal outstanding. Only two of the pre-emptive restructurings involved a reduction in nominal principal. The largest reduction, which was for Uruguay, was only 0.5 percent and, in the case of Argentina's pre-emptive restructuring, there was actually an *increase* in the nominal principal. Post-default restructurings achieved far more significant debt relief. In the case of Argentina, there was a reduction in nominal principal of 37 percent. Even the smallest reduction in the post-default group (2.5 percent for Moldova) was a multiple of the largest for the pre-emptive cases.

Table 1: Recent Restructurings: Nominal Principal Reduction

		Percent of GDP	Percent of restructured debt
Pre-emptive			
Ukraine	1998-2000	0.0	0.0
Pakistan	1999	0.0	-0.1
Argentina	2001	-0.9	-2.9
Megaswap	May-Jun 2001	-0.9	-7.8
Phase 1	Nov-Dec 2001	0.0	0.0
Moldova	2002	0.2	6.4
Uruguay	2003	0.5	1.0
Dominican Republic	2005	0.0	0.0
Post-default			
Ecuador	1999-2000	18.4	37.3
Russia	1998-2000	4.1	17.2
Moldova	2004	2.5	57.9
Argentina *Global Debt Exch.*	2005	37.0	56.0

Source: IMF (2006)

[13] The Paris Club is an informal group of financial officials from 19 of the world's richest countries, which provides financial services such as debt restructuring, debt relief, and debt cancellation to indebted countries and their creditors. Debtors are often recommended by the International Monetary Fund after alternative solutions have failed. The Paris Club meets every six weeks at the French Ministry of the Economy, Finance, and Industry in Paris. *Source:* www.investordictionary.com.

Table 3: Debt Reduction for Debt Exchanges (%)

	Period	NPV Reduction[1]
Pre-emptive		
Ukraine	2000	5
Pakistan	1999	8
Moldova	2002	6
Uruguay	2003	8
Dom. Republic	2005	1
Argentina		
Megaswap	2001	-28
Phase 1	2001	32
Post-default		
Ecuador		
Domestic	1999	0
External	2000	25
Russia	1999-2000	44
Argentina		
Global Debt Exch.	2005	75

Source: IMF (2006)

An evaluation of the debt exchange operations based on the estimated net present value (NPV) reduction also reveals a sharp contrast between the pre-emptive and post-default debt restructurings.[14] As seen in Table 3, the pattern closely follows that of the nominal debt reduction for the debt restructuring operations overall. Only one pre-emptive exchange (Argentina's Phase 1) achieved more than a 10 percent net present value (NPV) reduction while, in the case of Argentina's first swap in 2001 (the Megaswap), there was actually an NPV *increase* of 28 percent. With the exception of Ecuador's domestic debt exchange operation, all of the post-default exchanges produced NPV reductions of 25 percent or more. Argentina's post-default exchange achieved an NPV reduction of 75 percent. It is clear, then, that post-default debt exchanges had a significantly greater impact than the pre-emptive variety when measured by NPV.

The more important question is the longer term impact of the debt restructurings on the evolution of debt levels. While pre-emptive restructurings did not have a large immediate impact on debt levels, long term debt reduction was evident for both pre-emptive and post-default cases. However, it was more significant for the post-default restructurings, they having benefitted from the larger amount of default. Figure 4 illustrates the debt dynamics in each country around the time of the debt crisis.[15,16] All of the post-default cases achieved a more than 50 percent reduction in their debt/GDP by the fourth year from the peak of the debt crisis. Amongst the other countries, only Moldova achieved a debt/GDP reduction of more than 50 percent which was, in part, due to the second restructuring that took place post-default. The largest reduction experienced in the *strictly* pre-default country cases was 40 percent and in one case (Dominican Republic) there was no significant reduction.

[14] Although Ukraine conducted debt restructuring operations between 1998 and 2000, the only NPV estimate available was for the swap which took place in 2000.

[15] The most recent IMF Staff publications have been used to update the data points and extend them beyond 2006 in the appropriate cases. For Argentina, data points beyond 2005 are not yet available.

[16] The data for Pakistan is recorded by fiscal year, which runs from July 1 to June 30. The initial restructuring took place in the second half of the fiscal year ending 1999. Thus, t to t+4 refers to the fiscal year ends.

Figure 4: (A) Debt/GDP After Restructuring, Pre-Emptive Cases

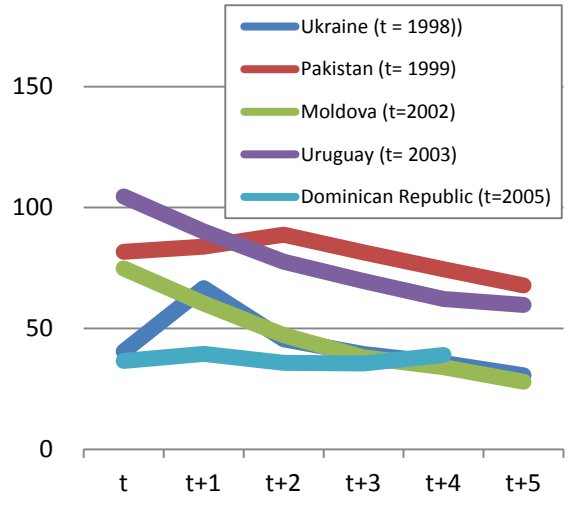
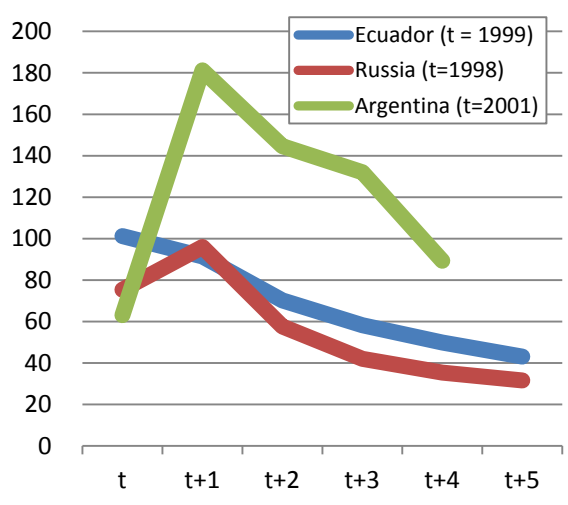


Figure 4: (B) Debt/GDP After Restructuring, Post-Default Cases



The GDP Cost of Default

The post-default country cases (Argentina, Ecuador and Russia) all experienced deep economic contractions, whereas the pre-emptive country cases generally did not.[17] The GDP growth rates around the time of the various crises are shown in Figure 5.[18]

Figure 5: (A) GDP Growth (%) Before/After Restructuring, Pre-Emptive Cases

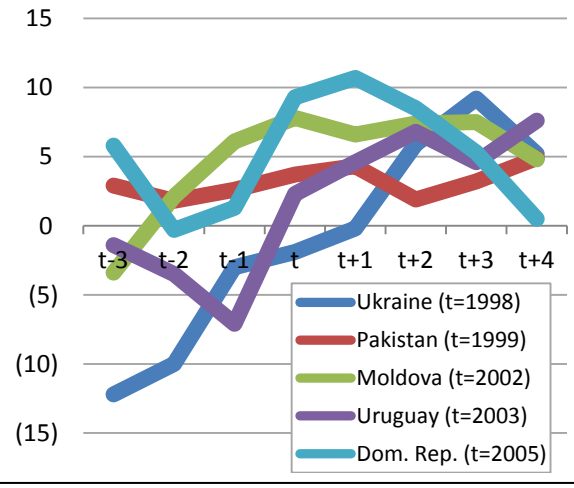
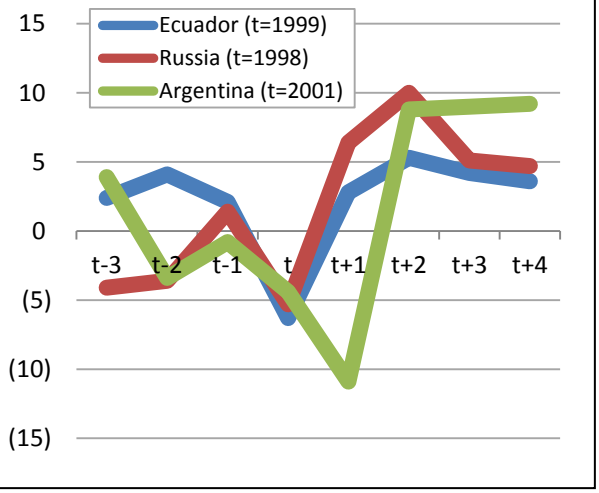


Figure 5: (B) GDP Growth (%) Before/After Restructuring, Post-Default Cases



[17] Because the first debt restructuring in Moldova was completed in an entirely pre-emptive setting, Moldova is categorized as a pre-emptive country case. In the case of Argentina, after the June 2001 megaswap, the government announced a two-stage approach to a more comprehensive debt restructuring that was intended to prevent default. Phase I was completed in December 2001. However, Argentina defaulted in late December 2001 before Phase II of that debt restructuring could be addressed. As such, Argentina is classified as a post-default country case.

[18] The most recent World Economic Outlook (WEO) publications have been used to update the data points and extend them beyond 2006 in the appropriate cases.

All of the countries that were characterized as having solvency problems (namely Argentina, Ecuador, Russia and Uruguay) had experienced a decline in their GDP growth rates around the time of the restructuring.

Table 4 compares the GDP growth rates before and after the debt restructurings. Column 1 shows the average of the GDP growth rates in each country in the three years prior to the first debt restructuring. Columns 2, 3 and 4 show the difference between the average growth rate and the growth rates one, two and three years after the restructuring, respectively. The comparison reveals that it did not take long for the post-default country cases to begin recovering after the default-associated contraction. All three countries experienced an economic rebound by the end of the second year

Table 4: A Comparison of Pre- and Post- Crisis GDP Growth Rates

	1	2	3	4	5
	$\Delta GDP_{AVG[(t-3) \text{ to } (t-1)]}$	$\Delta GDP_{t+1} - \Delta GDP_{AVG[(t-3) \text{ to } (t-1)]}$	$\Delta GDP_{t+2} - \Delta GDP_{AVG[(t-3) \text{ to } (t-1)]}$	$\Delta GDP_{t+3} - \Delta GDP_{AVG[(t-3) \text{ to } (t-1)]}$	$\Delta GDP_{AVG[(t+1) \text{ to } (t+3)]} - \Delta GDP_{AVG[(t-3) \text{ to } (t-1)]}$
Pre-emptive					
Ukraine	-8.4	8.2	14.3	17.6	13.4
Pakistan	2.4	1.9	-0.5	0.8	0.7
Moldova	1.6	5.0	5.8	5.9	5.6
Uruguay	-4.0	8.6	10.8	8.6	9.3
Dominican Republic	2.3	8.4	6.2	3.0	5.9
Post-default					
Ecuador	2.9	-0.1	2.4	1.3	1.2
Russia	-2.1	8.5	12.1	7.2	9.3
Argentina	-0.1	-10.8	8.9	9.1	2.4

(see Column 3). Even though the pre-emptive country cases did not experience deep contractions, it is worth noting that the difference between their post-restructuring growth rates and the pre-crisis average was also positive, but by the end of the *first* year. Column 5 shows that all eight countries experienced higher economic growth rates after their initial debt restructurings. The values in that column represent the difference between the average of the GDP growth rates in the three years *after* the initial restructuring and the average of the GDP growth rates in each country in the three years *prior* to the debt restructuring.

VULNERABILITY

The Likelihood of Subsequent Debt Crises

Debt sustainability is a situation in which a borrower is expected to be able to continue servicing debt without an unrealistically large correction to the balance of income and expenditure.[19] Challenges to debt sustainability are rooted in either solvency or liquidity issues. In terms of liquidity, debt sustainability requires the ability to find financing each period to close financing gaps. In terms of solvency, it

[19] IMF (2006)

implies an ability to service debt without indefinitely accumulating debt.[20] Debt sustainability therefore precludes default.

An appropriately designed debt restructuring programme should diminish the likelihood of a default in the foreseeable future and restore debt sustainability. The recurrence of crises in Moldova, after 2002, and Argentina, after 2001, indicates that their initial debt restructuring programmes were inadequate. In an attempt to determine whether debt sustainability had ultimately been restored in the eight countries by 2006, the IMF's review looked at two categories of assessment – debt-related vulnerabilities and vulnerabilities arising from illiquidity. Debt-related vulnerabilities were further partitioned into near-term and medium-term concerns.[21] The three criteria were then considered in aggregate in order to draw an overall conclusion regarding the extent to which each country was still vulnerable and, hence, whether the debt operations (in combination with supporting economic policies) were successful in contributing to the restoration of sustainability.

The assessment of vulnerabilities arising from liquidity needs took place on two levels – a country's ability to meet external obligations (balance-of-payments vulnerabilities) and a country's ability to meet gross financing needs arising from the fiscal position (fiscal vulnerabilities). As an indicator of balance of payments vulnerabilities, projections for the ratio of foreign exchange reserves to short-term external debt were used. A ratio below one would imply that a complete lack of market access for one year would precipitate severe pressures on the balance-of-payments, and jeopardize the country's ability to meet external obligations. As an indicator of fiscal vulnerability, projections for gross financing needs, expressed as a percentage of GDP, were made.

Table 5: Liquidity Indicators, 2006

	Reserves/ Short Term Debt	Financing Need (% of GDP)
Pre-emptive		
Ukraine	12.0	4.1
Pakistan	3.1	4.8
Moldova	1.2	4.8
Uruguay	0.6	12.3
Dom. Republic	1.7	4.2
Post-default		
Ecuador	0.2	6.2
Russia	7.2	-3.5
Argentina	0.7	3.4

Source: IMF (2006)

Table 5 shows that, at the time of the IMF review, there was great variation in the extent of vulnerability among the eight countries with regards to liquidity.[22] In terms of external obligations, Ecuador's balance-of-payments was the most vulnerable, while Ukraine evidenced the least. Uruguay and Argentina also exhibited substantial degrees of vulnerability. In terms of fiscal position, the most outstanding were Russia and Uruguay. Russia was the only country that had a low value for fiscal financing needs (which was actually negative), while Uruguay's value of 12.3 percent was more than double that of the other countries. Of the remaining countries, which were

[20] IMF (2006)

[21] "Medium term vulnerabilities" refers to vulnerabilities that may not be manifested presently but could be of consequence in the upcoming periods for which projections have been made.

[22] The data for Pakistan refers to the fiscal year 2005-06

considered to be in the medium range, only Ecuador had fiscal financing needs in excess of 5 percent. As far as the liquidity element of vulnerability is concerned, then, the effect of debt restructuring was mixed, with vast improvements in some cases but not in others.

Towards assessing near term debt-related vulnerabilities, the relationship between current public debt-to-GDP ratios and the probability of a public debt crisis was explored for a sample of 55 low- and middle-income countries over the period 1971-2002. The results of that exercise confirmed a positive relationship between debt levels and the probability of a crisis. More interestingly, a debt-to-GDP ratio of 80 percent was associated with a 50 percent probability of a debt crisis. Still, these results would have to be treated only as a rough guide rather than a predictor of crises, given that the variation was large. (That is, a number of crises have occurred outside of the range of debt/GDP ratios within which there is the greatest concentration.) The results are consistent with the reality that factors other than debt/GDP ratio play a significant role in debt sustainability (such as the primary fiscal balance, real interest-growth differential and, in the presence of foreign-currency denominated debt, the composition of the debt). In 2005, only one of the countries (Argentina) had a debt ratio in excess of 80 percent (refer again to Figure 4).[23,24] Insofar as the debt/GDP levels, as shown above, diminished over time following debt restructurings, the positive relationship between debt/GDP and reduced risk of a default suggests that debt restructurings tend to reduce vulnerability. However, once again, the variation in outcomes means that the improvement was mixed.

To supplement the analysis of near term debt-related vulnerabilities, the IMF's Early Warning System (EWS) approach was also employed.[25] The model assigned considerable vulnerability scores to Argentina and Uruguay. However, while Uruguay's score remained at roughly the same level, Argentina's score in 2006 was 48 percent lower than that of 2005. Vulnerability scores for the remaining countries were low. For most of the countries, then, EWS suggests that debt restructuring reduces vulnerability.

For the medium-term assessment, the IMF'S Debt Sustainability Analysis (DSA) model was used.[26] According to the DSA, vulnerabilities remained high in two cases,

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[23] The IMF review's observations of debt-to-GDP were based on 2004 data. Data for 2005 were sourced from more recent IMF Staff Reports.

[24] The IMF's projections for debt-to-GDP ratios after a debt restructuring are, more often than not, conservative. Of the five country cases (Ukraine, Pakistan, Uruguay, Ecuador and Russia) for which at least a year had already elapsed at the time of publication, four had an evolution of the debt-to-GDP ratios than was better than had been anticipated, by IMF staff, due to better than projected paths for one or more of the underlying variables (including the primary balance, the interest-growth differential, the exchange rate and other debt creating flows). The exception was Ecuador.

[25] The EWS model specification excluded public debt. This would have been acceptable for the cases being covered by the review (since all of the restructurings included external debt), but it implies that the approach could not be used to relate *public* debt levels to debt crisis probabilities.

[26] In the DSA, a baseline projection for debt dynamics is made based on medium-term projections for the country's macroeconomic framework. Sensitivity analyses are subsequently conducted based on alternative scenario projections of the key variables (real GDP growth, real interest rate and primary fiscal balance) and stress tests, which apply shocks to each of the variables. Additional stress tests are also

Uruguay and Ecuador. They were in the medium range for Ukraine, Moldova and Dominican Republic, and Argentina, and low for Pakistan and Russia. However, it was noted that, in the case of Argentina, high volatility and severe contraction of real GDP growth in preceding periods may have distorted the results of the standardized stress tests. The stress tests are premised on 10-year historical averages and standard deviations. Consequently, the high volatility in Argentina's GDP growth may have resulted in overly large shocks to the debt/GDP projections.

When considered in aggregate, the three categories of assessment for debt sustainability point to the conclusion that debt restructuring does reduce the probability of a future default. It is clear, however, that the extent of restructuring garnered in the case of Uruguay, and in the initial case of Argentina and Moldova, was not sufficient to restore sustainability. Given that problems of solvency were identified in two of these cases, there appears to be a greater likelihood that a debt restructuring will be inadequate if there are outstanding solvency issues. Ultimately though, even under such circumstances, debt sustainability could ultimately be restored via fiscal adjustments and/or economic growth.

Credit Ratings and Spreads on Restructured Bonds

Spreads on the restructured bonds of the countries reviewed (measured relative to the comparable U.S. Treasuries), between 2000 and 2006, lent some support to the preceding conclusions regarding the risks to debt sustainability. Spreads lower than the EMBI global spread (as was the case in Russia, Ukraine and Pakistan in 2006) evidenced a return of market confidence in the three countries that were categorized as having low vulnerability.[27] Based on the spreads consistently remaining above the EMBI, there appeared to be chronic issues in at least three countries (Argentina, Ecuador and Uruguay), all of which had been identified as having vulnerabilities in the high or medium range.

Also lending support to the analysis were credit ratings on the restructured bonds. All eight countries had achieved improvements in their credit ratings from at least one credit rating agency at the time of the IMF (2006) review. Moody's ratings for Uruguay and Dominican Republic, had not improved since their restructurings. However, the rating for both did improve by2007. Credit ratings had improved considerably in five of the other countries (Argentina, Moldova, Pakistan, Russia and Ukraine by 2006).

Ecuador's credit ratings, which saw only a short-lived improvement, were ultimately influenced by the utterances of the country's political leaders, who questioned the legality of some of its debt. This implied greater risk for creditors. Indeed, when Ecuador restructured its debt again in 2008, it was not out of an inability to pay but,

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conducted including: a simultaneous shock to three of the key variables, a one-time 30% depreciation in the exchange rate and an increase in debt equal to 10% of GDP on account of contingent liabilities that could arise in the event of a financial sector restructuring. The DSA seeks to gain insight into whether it is likely that particular conditions will produce an explosive debt path going forward.

[27] The Emerging Market Bond Index (EMBI) is a benchmark index for measuring the total return performance of international government bonds issued by emerging market countries that are considered sovereign (issued in something other than local currency) and that meet specific liquidity and structural requirements. – Investopedia.com

rather, a formal rejection of the debt affected. Also worthy of note is that the deterioration in the countries' credit ratings leading into the *initial* debt restructurings in Argentina and Moldova were exceptional. None of the other countries had received a credit rating lower than Caa2, whereas Argentina and Moldova had been rated Ca.[28] Yet, the extent of their initial restructurings was *not* exceptional, in terms of the NPV reduction. Both countries underwent a far more dramatic round of restructuring less than five years later. These observations give some credence to the use of credit ratings as indicators of default probability.

Access to International Capital Markets

Since lenders care deeply about default risk, defaults may, at least temporarily, inhibit a country's access to the international capital market. Borensztein and Panizza (2008) found that, while countries generally lose access during default, once the restructuring process is fully concluded, defaulters quickly regain access to international borrowing, even if at higher cost. There was a positive correlation between default history and borrowing costs. Yet, the relationship was not long-lasting. In their analysis of about 200 years of data, Borensztein and Panizza (2008) found that, in a given year, default in the previous year had a large and statistically significant effect on spreads. Effects on the second year after default were large but not statistically significant. Effects beyond the second year after default were small and not statistically significant. These findings were corroborated by a separate analysis in Borensztein and Panizza (2008) where they observed that defaults did not have a long-term impact on credit ratings.

Not only is access restored quickly post-restructuring, but, paradoxically, restructuring sometimes *increases* the flow of credit (Friedman, 2000). The impact on reputation, which would lead creditors to deem defaulters as being less creditworthy, seems to be minimal if it exists at all. This does not mean that reputation does not matter. Friedman (2000) clarified the matter by pointing out that abandoning debt enhances a debtor's creditworthiness *only in circumstances that preclude repetition and therefore nullify the adverse reputation effect*. On the condition that debtors demonstrate a genuine willingness to repay, creditors will assume that repudiating debt decreases the likelihood of (another) restructuring.

In addition, creditors (in the case of financial institutions) value a borrower's ability to resolve problems in an orderly manner, as this allows them to retain some amount of control over the value that is assigned to the assets on their balance sheets and, consequently, their ability to meet capital requirements. This would explain why, in some cases, sovereigns end up with higher credit ratings right after a debt restructuring (notwithstanding the fact that, in other cases, the rating remains the same for some time). An immediate upgrade would imply compelling evidence that the likelihood of a restructuring in the foreseeable future has been drastically reduced and that the sovereign has demonstrated the ability to execute a restructuring, if needed, in an orderly manner.

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[28] By Moody's definition, obligations rated in the Caa3 to Caa1 range are judged to be of poor standing and are subject to very high credit risk; obligations rated Ca are highly speculative, subject to very high credit risk and are likely in, or very near, default, with *some* prospect of recovery of principal and interest. See Moody's (2009[a]).

Overall, the analysis of vulnerabilities arising from the liquidity and solvency concerns in countries which have recently undergone debt restructurings suggests that debt restructurings reduce the probability of future default. However, restructurings are less effective when there are solvency issues to be resolved. An inspection of the movement of credit ratings support this finding, but also reveals that credit rating agencies go beyond "ability to pay" and take into consideration a debtor's "willingness to pay" in their determination of default probability.

Default probability has implications for the treatment meted out by the international capital markets. The review of country experiences revealed the expected finding that countries generally lose access during a debt restructuring. However, and perhaps unexpectedly, access is usually quickly restored upon the completion of the restructuring process. There is also a negative impact on borrowing costs, but this impact is small and statistically insignificant beyond two years. In terms of the flow of credit in the periods immediately preceding and following the restructuring, the impact of a debt restructuring is actually positive, and more so if it is done in an orderly manner.

CONCLUSION

The period covering the two most recent global lending booms has seen more sovereign debt defaults and restructurings than the previous hundred years. The character of modern international capital markets seems to be disposed to a high incidence of sovereign defaults. The current global recession has led a number of sovereigns to restructure their debt and has significantly elevated the risk of default for many others.

Our review of other country experiences with debt restructuring reveals a number of criteria by which we can assess the design and execution of the Jamaica Debt Exchange. The most significant lesson to be drawn is that the timing of a debt restructuring, relative to the date of default, matters. Post-default restructurings are associated with far more significant debt relief, in terms of nominal principal reduction, than the pre-emptive variety. Also, post-default debt exchanges result in more significant net present value reductions than their pre-emptive counterparts. However, post-default restructurings tended to produce deep economic contractions, notwithstanding the fact that these economic contractions were short-lived. Another significant lesson is that debt restructurings tend to be less effective, in terms of reducing the probability of future default, if there are outstanding solvency issues. We also found that a sovereign's demonstration of "willingness to pay" (which may be interpreted, in part, as the absence of any demonstration of "unwillingness to pay") affects the credit ratings on its debt, and the consequent borrowing costs and level of credit flows. Finally, creditors value a debtor's ability to conduct a restructuring in an orderly manner. Hence, the extent to which this is demonstrated, in particular by means of a pre-emptive swap, would have some impact on the length of time it takes for credit ratings to improve and for borrowing costs to return to pre-crisis levels.

THE JAMAICA DEBT EXCHANGE PROGRAMME

The Scope of the JDX

On January 14, 2010, the Government of Jamaica launched a pre-emptive debt exchange programme. This was the first time that a bond restructuring programme was to take place for Jamaica.[29] In marked contrast to recent debt restructurings conducted by other sovereigns, the exchange did not include external debt. It consisted of the entire stock of domestic debt – 345 instruments (variable, fixed rate, US dollar-denominated and US dollar-indexed bonds) which were consolidated into a series of 24 new instruments.[30] The targeted bonds amounted to 65 percent of GDP (over J$700b) or 47 percent of public debt. The new bonds have extended maturities and lower interest rates. The amount of principal to be repaid was unchanged, which indicated that the focus of the debt exchange was on debt service relief (liquidity) rather than debt reduction (solvency). Average debt maturity was extended from 5.3 years to 8.7 years, while the average coupon rate was significantly reduced from approximately 17 percent to 11 percent. A conservative estimate of the NPV reduction was 20 percent (using a discount rate of 12 percent).

The exercise was restricted to domestic debt instruments, for two primary reasons: (i) more complicated legal issues (governed by laws other then Jamaica's) would have arisen if the debt exchange had included external debt, and (ii) domestic interest rates were deemed to be unjustifiably high and excessively burdensome to the government, whereas the interest rates on external debt were not.[31] (The final section of this paper will provide empirical support for this assessment.) Estimates after the debt exchange operation pointed to interest savings to the Government of just over 3 percent of GDP, while amortizations over the next three fiscal years had been reduced by around 65 percent.

We know from the experiences of other countries' debt restructuring programmes that the fact that JDX was undertaken pre-emptively means that the impact of the debt exchange on the debt portfolio was not as large as it would have been if the restructuring was done post-default. However, the review also highlighted that post-default restructurings were typically accompanied by deep economic contractions. Jamaica's tenuous situation, given the aftermath of the collapse of a number of Ponzi-type schemes, years of economic stagnation, exacerbated by the global economic crisis, would have been made particularly more painful were there to have been a post-default restructuring. Therefore, by carrying out the debt exchange programme pre-emptively, the country has averted a deeper and more prolonged economic contraction than what will otherwise obtain.

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[29] However, it was not the first time that the country had restructured debt according to Standard and Poor's records. According to S&P, in the periods 1978-1979, 1981-1985 and 1987-1993, Jamaica restructured between US$63 million and US$377 million in commercial bank debt. However, the country has never before defaulted (selectively or otherwise) on bond debt. Jamaica's first S&P bond rating was assigned in 1999.

[30] Forty-nine percent of the public debt is foreign-currency denominated.

[31] Brian Wynter, Bank of Jamaica Governor on "Balancing Justice," RJR 94 FM, February 16, 2010.

The Likelihood of a Subsequent Debt Crisis[32]

Although there was no immediate decline in the debt/GDP ratio from the restructuring, public debt is projected to decline from the current 120 percent of GDP for the 2009-10 fiscal year-end, to less than 100 percent of GDP by 2013-14.[33] This is in comparison to projections in excess of 140 percent had the government continued on the previous path. Thus, not only will the deterioration in the debt/GDP ratio be halted as result of the JDX and other actions, but the upward trend should be reversed (on which, see more below). Drawing from the investigation of the relationship between debt/GDP ratios and debt crises described earlier, we know that this constitutes a less precarious position with regards to the probability of another debt crisis occurring, although it does not preclude it.

According to the IMF's Debt Sustainability Analysis conducted in January 2010, risks to Jamaica's public debt sustainability will continue to be high in the medium term, even with the restructured debt portfolio, on account of the country's debt overhang problem.[34] More specifically, stress tests indicate that public debt sustainability is extremely vulnerable to exchange rate, interest rate and primary fiscal balance shocks. For example, a 30 percent nominal exchange rate depreciation shock would result in a debt/GDP ratio of more than 150 percent. Interest rate shocks were also identified as a major vulnerability due to the fact that over half of the country's domestic bonds are set at variable rates.

Arising from the JDX is the improved position with respect to vulnerabilities relating to liquidity. The real interest rate on Jamaica's public debt is projected to fall by 5.4 percentage points, between 2009-10 and 2013-14, while an economic rebound is anticipated. It is primarily the servicing of debt and not the level of debt per se that determines liquidity needs. Following Kozak (2005) and others, we may regard the real GDP growth rate as representing the country's ability to service domestic debt on a continuous basis without adding to the debt stock.[35] With the differential between the projected real interest rate and projected real GDP growth rate declining significantly (Figure 7) and with the government pursuing a conservative fiscal programme, fiscal financing needs are expected to fall, except for the years in which there will be a substantial increase in principal repayments, 2012-13 and 2013-14 (Figure 6). These projections represent an immediate and significant improvement in the government's liquidity position – an indication that the likelihood of another debt crisis, over the upcoming 4-year period, has been significantly reduced.

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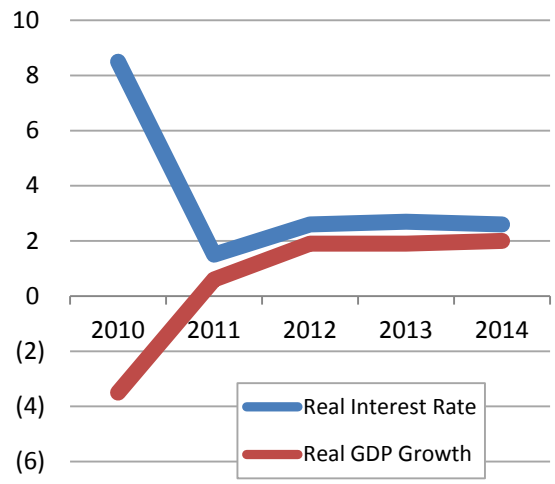
[32] Before proceeding to discuss the criteria surrounding the likelihood of a subsequent debt crisis, it is worth noting that new projections regarding Jamaica's debt dynamics are not only a consequence of the JDX, but are also a function of assistance being received from the IMF (which was conditional on the successful execution of the JDX) and the country fully committing to IMF-approved programme policies for fiscal consolidation.

[33] These projected debt ratios have been adjusted downwards from the numbers in IMF(2010) to account for the revision in the system of national accounts.

[34] Debt overhang refers to a situation where a country's debt level is so high, that it has become an impediment to economic growth. See Patillo et al (2002).

[35] For a concise discussion on the algebra of debt sustainability see Ley (2009).

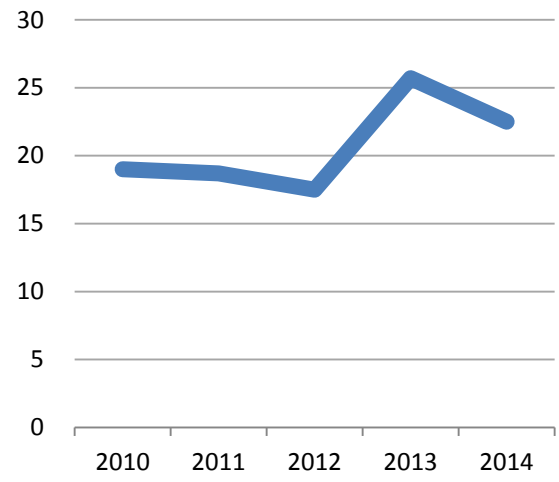
Figure 7: Interest-Growth Differential (%)



Source: IMF (2010)

Still, with the projections staying above 17 percent of GDP for the entire forecast period, fiscal financing needs will remain quite large compared to the values for the other countries in the cross-country review. This serves to underscore the importance of Jamaica having access to cheap financing from multi-lateral lending agencies if vulnerability to a default is to be kept at a distance.

Figure 6: Fiscal Financing Needs



Source: IMF (2010)

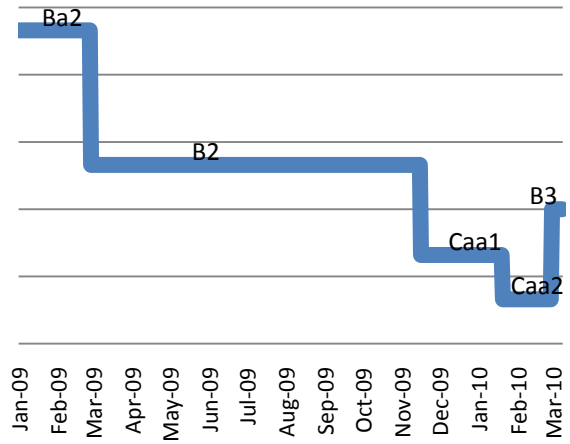
Credit Ratings, Access to International Capital Markets and Borrowing Costs

In January 2010 Moody's rating on Jamaica's domestic debt fell from Caa1 to Caa2, as the agency announced that it considered the debt exchange offer an event of default. The rating reflected the expected loss to creditors relative to the original promise to repay. Acknowledging that the JDX was a crucial part of a programme to restore public debt sustainability, Moody's indicated that a successful conclusion of the operation would result in a ratings upgrade. The JDX operation was completed in February 2010, with nearly 100 percent of targeted bondholders participating in the exchange. Two weeks later, which was within two months of the initial offer, Moody's raised the credit rating on Jamaica's domestic debt to B3.[36] Figure 8 illustrates the evolution of Jamaica's credit rating around the time of the restructuring. In the comments surrounding the post-JDX upgrade, Moody's senior analyst for Jamaica, Alessandra Alecci, explained that "the new ratings take into account a significant improvement in the Government's liquidity position due to lower debt-servicing costs and substantial multilateral inflows while acknowledging medium-term credit vulnerabilities due to a debt burden that remains very high."[37]

[36] The debt rating on Jamaica's foreign debt was improved as well from Caa1 to B3. This action is consistent with the findings of Reinhart and Rogoff (2008) that domestic debt impacts the likelihood of external debt default. Moody's rating on Jamaica's foreign debt had remained at Caa1 from November 2009 to March 2010.

[37] Jamaica Observer, "Moody's Upgrades Jamaica's Rating," March 3, 2010.

Figure 8: Jamaica's Credit Ratings, Moody's, Domestic Debt



Source: Bloomberg

Consistent with the finding in the historical review above that creditors value an orderly restructuring over a disorderedly default, the rapid ratings upgrade for Jamaica reflects its demonstration of the capacity to execute an orderly restructuring. To Jamaica's credit, only two of the eight countries in the IMF's cross-country review (Argentina and Ukraine) had also been able to achieve an upgrade from Moody's in less than six months.

Drawing on the other country experiences, Jamaica can expect that the international capital markets will not discriminate against it, by preventing access, now that the restructuring programme has been completed. However, it is possible that the country will face higher costs for that access over the next year or two, as a consequence of the event. However, unlike the other cases reviewed, Jamaica's restructuring did not affect any external debt. This fact, along with the market's generally beneficent treatment of restructurers, its short memory, the pre-emptiveness and orderliness of the Jamaican swap, the continuous demonstration of "willingness-to-pay" by the Jamaican Government and the improved liquidity position, means that the country is unlikely to pay a noticeable price, if any at all, for its technical default on domestic debt.

Conclusion

The fact that the focus of the Jamaica Debt Exchange was on debt service relief rather than debt reduction implies that the authorities were focused on addressing liquidity rather than solvency concerns. Given the quick improvement in the credit rating on the country's debt after the restructuring, the administration's interpretation of its debt problem as primarily one of illiquidity appears to have been correct, and the approach taken must seem adequate for the prevention of a default in the near future, conditional on the country's adherence to the IMF-approved programme for fiscal consolidation and inflows from multi-laterals. Based on other country experiences, Jamaica can expect that it will have access to international capital markets going forward, with only a minimal, short-lived interest penalty, if any at all, which will likely be mitigated by assistance received from multilateral lending agencies. It is clear that by carrying out the restructuring pre-emptively, the country has not received as large a reprieve from debt as it might have, but in so doing it has averted a deeper economic contraction.

THE EVOLUTION OF THE DEBT

In making an assessment of the debt path going forward and the likelihood of macroeconomic stability, the factors that drive changes in the level of debt must be understood. In this section, we examine those factors and determine how the JDX and the other measures taken by the Jamaican government will likely affect the future path of the debt.

THE MEANING OF DECOMPOSING CHANGES IN DEBT

The changes in the level of the public debt can be disaggregated into constituent components, each of which represents a separate cause of change. The present analysis identifies five components.

Disaggregating the overall fiscal deficit produces three of the components. The recurrent, non-interest balance, which we call the *basic balance* reflects the difference between, on the spending side, ordinary programme expenditure and wages and salaries, and on the earning side, tax revenue. Debt servicing is omitted, along with one-off expenditures and income such as the proceeds of asset sales. The *capital balance* incorporates all of the one-off items. Infrastructure and other capital expenditures are subtracted from the proceeds of asset sales.

Interest payments complete the disaggregation of the overall fiscal balance. The nominal (money value) of total interest payment is of little constructive use for the present exercise, however, because it does not take account of the burdensomeness of those payments or the ability to pay. Instead, the decomposition uses real, effective interest payments, which are derived from the nominal variety after subtracting the effect of both inflation and any real growth of output. The justification for this is that only an interest payment over and above the rise in the general price level represents a real return to the lender and a true cost to the borrower. Similarly, when using debt/GDP as the measure of debt, only interest costs greater than the growth of GDP require the diversion of new resources to service the debt. Therefore, if the average nominal interest rate on debt is equal to the rate of increase of the nominal GDP, this component cannot be a source of debt increase.

In addition to new borrowing necessitated by an overall central government fiscal deficit (or reduction of principal permitted by a surplus), the level of debt for which the government is responsible may change from one year to the next for two other reasons. The government may and often has to take over payment obligations contracted outside of central government. The occasion for such may be anticipatable and controllable, such as when the government provides a guaranteed on a loan contracted by a quasi-public entity. In the event that the contracting entity does not repay, the debt becomes, by virtue of the government guarantee, the obligation of the central government. At the other extreme, the occasion may be difficult to anticipate and beyond control, as was the case when loans made by the privately-owned, commercial banking sector ultimately became part of the public debt during the banking crisis of the late 1990s. However, such off-budget or contingent liabilities usually arise from publicly-owned enterprises.

Finally, the amount owed may change simply because an existing debt obligation changes in value – *revaluations*. The most common example of this occurs when the payment obligation is denominated in a foreign currency and the exchange rate changes. But there is another possible reason for changes in the value of existing debt. Since we are primarily interested in explaining changes in the debt/GDP ratio, then a change in the GDP, without any change in the dollar value of the debt, will change the debt/GDP ratio. And a change in the level of the GDP itself has two sources – inflation, which merely raises the nominal valuation of output, and economic growth, which reflects the production of quantitatively more output.[38]

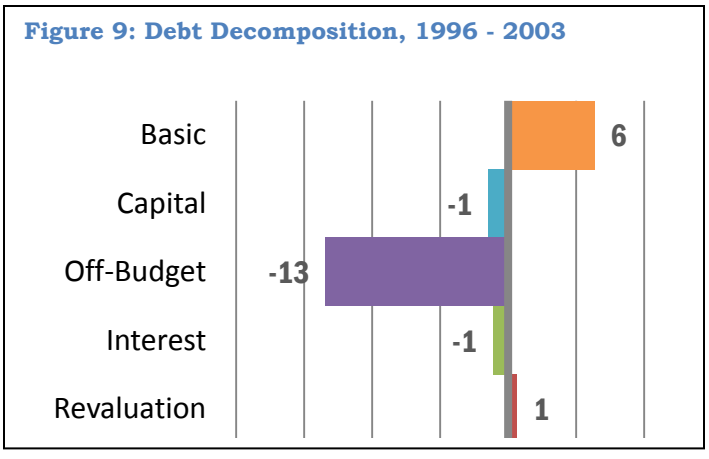
THE RESULTS OF THE DEBT DECOMPOSITION[39]

The evolution of the debt since its low point of 69 percent of GDP in 1996 has revealed distinct phases. The present debt burden was created in the late 1990s and early part of the present decade when the debt rose each year until it peaked at 123 percent in 2003. Debt levels subsequently fell for four successive years until it bottomed out at 108 percent of GDP in 2007, holding at close to that level in the following year. Then last year, the debt/GDP ratio shot up dramatically to 120 percent. The results below represent those three periods – rising debt (1996 – 2003), falling debt (2004 – 2008), and 2009. The section concludes with an extrapolation of the debt implications of both the JDX and the recently tabled budget.

The Period of Rising Debt

During the period of rising debt, the debt/GDP ratio rose by an average of eight percentage points per year. Since tax revenue exceeded expenditure on programmes and the wage bill every year in that period, the basic balance was in surplus. That surplus contributed six percent of GDP to debt *reduction* (Figure 9). Since it is based on one-off items, capital revenue is always insufficient to fund public sector investment, so the capital balance will add to the debt. During this period, however, capital expenditure was deliberately squeezed to control the overall deficit, so the capital balance contributed only one percentage annually.

Figure 9: Debt Decomposition, 1996 - 2003



One surprising result is the small contribution of interest payments to

[38] The algebra of decomposition also produces a sixth category, referred to as *cross-products*, which represents the revaluation of changes in the debt. This component is usually, and in the present case, quantitatively negligible, so it is omitted from the discussion and the results.

[39] This decomposition analysis is similar to and updates the one conducted in the previous CaPRI report, "Jamaica's Debt: Causes and Consequences," 2007, but there are important differences. The treatment of interest in the two methodologies differs substantially in that the previous report used nominal interest. And the current exercise is able to use the revised national accounts estimates recently published by the Statistical Institute of Jamaica.

the accumulation of debt. The decomposition exercise reveals that interest on the debt contributed only 1 percentage point each year, on average, to the accumulation of debt. The reason for this surprising result is that, while the effective interest rate on the total public debt (calculated as the ratio of interest payments to total public debt) averaged 14.7 percent over the period, the average rate of inflation was 8.6 percent. That is, more than half of the interest being paid by the government represented the adjustment of the principal to the loss of purchasing power, and thus could have been paid by the government out of the automatic rise in nominal tax revenue as prices rose. Conventional wisdom amongst analysts in Jamaica is that the government has had to borrow to service the debt, and thus debt dynamics were a major contributing factor to debt accumulation. This analysis, so far, suggests that it was not.

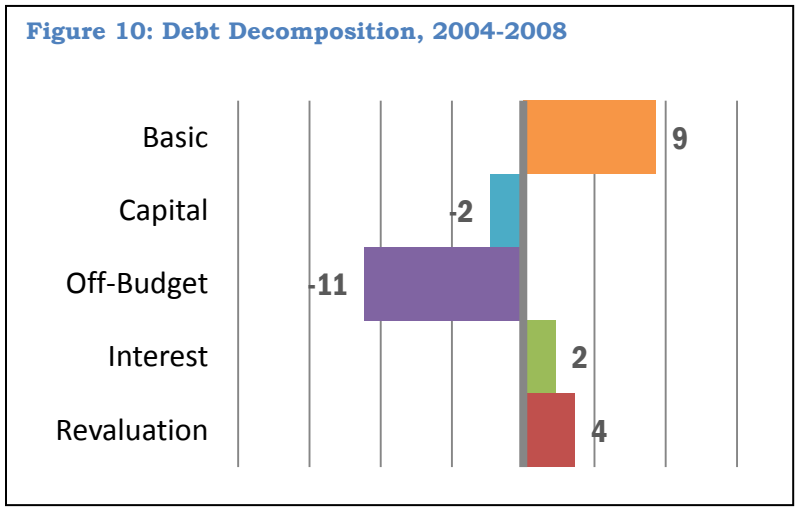
Revaluation of existing debt obligations, due to exchange rate movements and nominal GDP changes had a benign effect on the debt stock, pulling the debt downward.

The factor that overwhelmingly explains the doubling of the debt/GDP ratio between 1996 and 2003 is the assumption by the government of liabilities contracted outside of central government. Over the seven years, this source accounted for a massive 13 percentage points of debt on average. The vast majority of this amount was accounted for by the fiscal resolution of the financial crisis from 1996 to 2001, which resulted in the government assuming the accumulated debts in 2001 of the publicly-owned agency responsible for cleaning up the balance sheets of the insolvent financial institutions. The finance ministry's own analysis of this period revealed that losses and debts of several wholly or partially owned public enterprises also contributed to this category, namely, losses at the national airline, the water commission, the sugar holdings, and elsewhere.

The Period of Falling Debt

In the five years that encompassed the fiscal years from 2004-05 to 2008-09, the public debt fell by an average of three percent each year. The decomposition of the relevant components for that period is presented in Figure 10. Curiously, it reveals patterns largely similar to the period of rising debt. The basic balance continued to be positive, contributing to debt reduction, this time a higher nine percentage points per year. Liabilities outside of central government continued to be the largest factor by far adding to the debt stock, but this time by a marginally smaller eleven percentage points.

Figure 10: Debt Decomposition, 2004-2008



The positive turnaround in the direction of the debt was due to unexpectedly high inflation. While the average nominal interest rate on the debt fell to 12.0 percent (from

the 14.7 percent for the earlier period), the average inflation rate jumped to 13.2 percent (compared to 8.6 earlier). That is, the government was paying in interest an amount that failed to compensate its borrowers even for inflation, much less for the loss of liquidity and default risk. This "too low" interest rate contributed an average of two percentage points to debt reduction. Further, the relatively high inflation revalued the debt/GDP ratio downwards by around 4 percentage points each year.

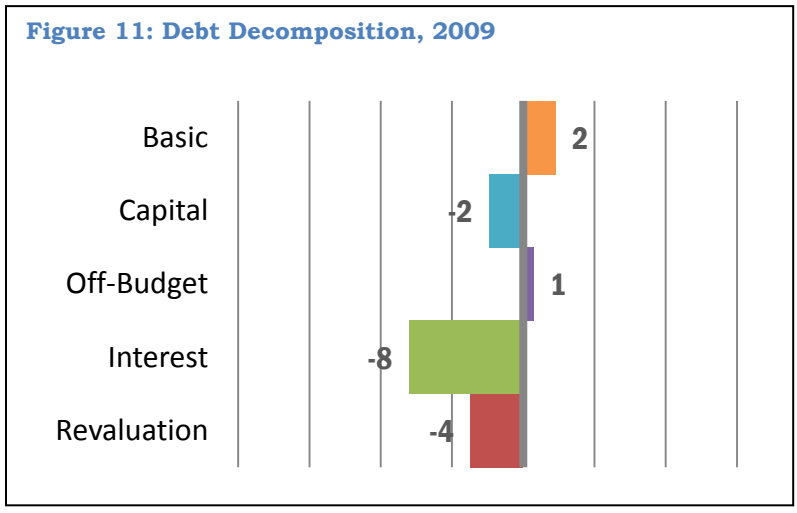
The unexpected inflation, therefore, in combination with a higher basic balance and the assumption of slightly lower contingent, off-budget liabilities produced a falling debt/GDP ratio. The problem with this illusory gain is that it is not sustainable. Contingent liabilities continued to be an unrestrained problem. And lenders soon revise their inflationary expectations and demand to be compensated accordingly. It was inevitable, therefore, that interest payments on the debt would soon rise.

2009

Over the course of the last fiscal year, 2009-10, the debt to GDP ratio leapt by an astonishing 11 percentage points, the largest single year increase outside of 2001-02 (which was due to the an accounting anomaly of having the entire accumulated cost of the financial sector resolution come unto the central government books in a single year). That jump in indebtedness precipitated the technical default and restructuring via the Jamaica Debt Exchange.

Decomposing the change in indebtedness for fiscal year 2009-10 suggests that entirely different factors were the determining ones last year compared to the previous dozen years. The element primarily responsible for the turnaround in the suddenly deteriorated debt path was the rise in the average interest rate on debt. From the average, nominal, implicit interest rate of almost 14 percent that had obtained since 1996, the rate rose to 17.5 percent last fiscal year. At the same time, inflation fell to near 10 percent. The interest rate rise would have been a reaction to both the inflationary experience of the previous few years as well as the central bank's monetary stance in the face of much fiscal uncertainty. The effect of this confluence of events was that the real cost of debt service rose quickly and significantly.

Figure 11: Debt Decomposition, 2009



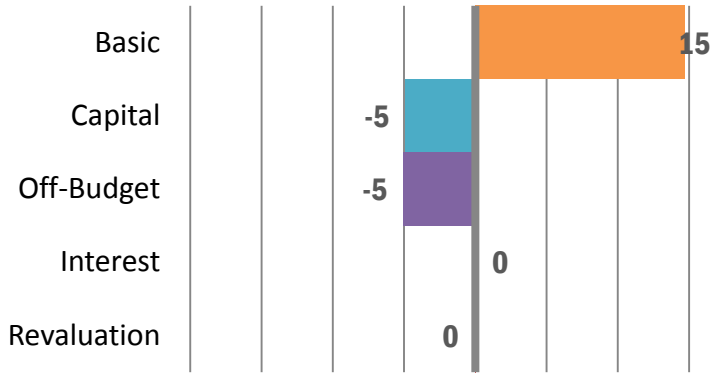
Thus, the decomposition (Figure 11) shows that interest payments, for the first time, accounted for most of the increase in the debt. At the same time, the basic balance, always a benign factor, was significantly smaller in 2009-10, exerting only 2 percentage points of reduction. The combination of skyrocketing interest payments and a lower basic balance was sufficient to drive the stock of debt appreciably higher.

Additionally, GDP fell under the pressure of the global economic recession, which elevated the debt/GDP ratio.

2010

The sustainability of the debt and fiscal profile, post-JDX, can be extrapolated from the effect of the JDX on debt service and the expenditure and revenue estimates in the fiscal budget promulgated for 2010-11. The implicit interest rate on the debt will fall to 10.5 percent, which will be its lowest rate since the current debt problem arose in the late 1990s. That reduction, in turn, will reduce the share of revenue devoted to interest payments from the stratospheric 66 percent last year to a relative modest 43 percent for 2010-11. If the inflation outturn meets the forecasted 10 percent, then the negative interest contribution to the debt should disappear entirely.

Figure 12: Debt Decomposition, 2010 Extrapolation



The budgeted expenditure contraction, the first in the country's history, if met, could produce a huge surplus in the basic balance which would underpin a 15 percentage point contribution to debt reduction, a third of which will be clawed back by the budgeted capital expenditure (Figure 12). But the risk of contingent liabilities remains, and even more so in the short term when there is an aggressive divestment agenda since residual liabilities will come onto the central government's books. This could account for some five percentage points. The aggregate of all these factors yields an expected debt reduction of five percentage points by the end of the fiscal year. This is not a forecast since it depends entirely on the fidelity of the fiscal outturn to the budgeted estimates, which itself is an uncertain outcome.

Nonetheless, the exercise reveals two important conclusions. First, the JDX makes a significant contribution to the future path of the debt, potentially turning around a rapidly rising debt/GDP ratio. Second, the realization of that turnaround depends, in the short run, on the government delivering on its budgeted expenditure reduction. In the long run, it will depend on sustained success in managing contingent liabilities since that alone accounts for the current debt problem.

CONCLUSION

The history of debt defaults and restructurings provides information on how to best execute a debt exchange of the type concluded by the Jamaican government in 2010 as well as on what to expect in its aftermath. Examining the Jamaica Debt Exchange in the context of that history, combined with an analysis of the decomposed factors

that have been driving changes in stock of Jamaican public debt, reveals some clear lessons for the future.

The primary reason for the current high indebtedness of the Jamaican government is the assumption of liabilities contracted outside of central government. Since 1996, this factor has accounted for debt of no less than 150 percentage points of GDP. By contrast, real interest on debt accounted for only three percentage points. Consistent primary surpluses contained the growth of the debt during this time. The implication is that both diligent and sophisticated management of contingent liabilities in the future is a key to long term debt reduction. The divestment programme announced this month will be important to that goal, and in particular, the divestment of Air Jamaica, the national airline. But other risks remain outside of the current portfolio of public enterprises. And there is a pervasive tendency for governments to accumulate such risks incrementally over time. This is why the management of such risks requires sophistication and discipline.

The Jamaica Debt Exchange has turned an unsustainable fiscal situation into a potentially sustainable one. Furthermore, the exchange appears to have been well-designed and conducted with sufficient skill to minimize the negative fallout from such technical defaults. In design, the pre-emptive nature of the swap combined with the government's continued fidelity to willingness-to-pay has appropriately resulted in the perception of a drastically reduced risk of an explicit default, which has been reflected in swiftly awarded higher domestic debt ratings by both Standard & Poor's and Moody's. Further, consistent with the worldwide experience of pre-emptive swaps, the negative impact on GDP should be minimal, if any at all.

While the JDX has made and will make a material impact in the short run, and while minimizing contingent liabilities will maintain the gains in the long run, the positive benefit of the JDX is insufficient to produce a gradually falling debt without the government making progress on the primary surplus. This entails wringing expenditure reductions out of its public sector restructuring exercise or enacting meaningful tax reform to garner additional revenue without raising existing average tax rates by means of facilitating compliance.

With the JDX, much has been accomplished to pull the government back from an unsustainable fiscal trajectory. The fact and manner of the programme deserve kudos for both the government and domestic debt-holders. But the fiscal accounts remain vulnerable, and more needs to be done. Without difficult public sector rationalization, tax reform, and in particular, disciplined management of contingent liabilities, the likelihood of another fiscal crisis in the future is high.

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APPENDIX: DEBT DECOMPOSITION METHOD

The following derivation provides a justification for the debt decomposition used in the text.

(1) $Debt = D_t + S_t F_t$

Total indebtedness is composed of domestic and external components.

D_t = *domestic debt in local currency*

F_t = *external debt in foreign currency*

S_t = *nominal exchange rate, domestic currency per unit of foreign currency*

(2) $$\Delta \frac{Debt}{GDP} = \Delta(g_t D_t) + \Delta(s_t F_t)$$

$$= [g_t \Delta D_t + D_t \Delta g_t + \Delta g_t \Delta D_t] + [s_t \Delta F_t + F_t \Delta s_t + \Delta s_t \Delta F_t]$$

$$= [g_t \Delta D_t + s_t \Delta F_t] + [D_t \Delta g_t + F_t \Delta s_t] + C$$

g_t = *1/GDP*

s_t = S_t/GDP_t

C = $\Delta g_t \Delta D_t + \Delta s_t \Delta F_t$

Debt and its components are expressed in units of GDP and expressed as first differences. In the last equation above, the components are rearranged into two groups, new borrowing (the terms in ΔD and ΔF) and the re-evaluation of existing debt due to GDP growth and exchange rate movements (the terms in Δg and Δs), plus quantitatively insignificant cross-product terms.

(3) $\Delta D_t + S_t \Delta F_t = -$ fiscal balance $+ evt$

New borrowing derives from either fiscal deficits or non-budgetary events such as "skeletons" – legacy liabilities that are brought unto the public balance sheet.

evt = *changes to the debt stock that originate outside the fiscal budget*

(4) $sbal = fiscal\ balance + int_N + \Delta A_t$

The structural balance (sbal) is the remainder after interest payments on debt and the cost/proceeds of net asset acquisition/disposal are removed from the overall fiscal balance.

Int_N = *nominal interest payments*

ΔA_t = *change in the stock of publicly held assets*

(5) $\Delta D_t + S_t \Delta F_t = int_N + \Delta A_t - sbal + evt$

The combination of equations (3) and (4) produces equation

(5).

If we wish to express interest payments in real terms, we begin with the definition of real interest payments where nominal interest is deflated by the growth in the "currency" which is GDP units.

(6) $$\frac{int_R}{Debt} = \frac{int_N}{Debt} + \frac{\Delta g_t}{g_t}$$

Int_R = real interest payments

Where the last term reflects the growth rate of the currency units, GDP. Rearranging yields the following expression for nominal interest paid.

The last term is derived as follows:

$$\frac{GDP_t - GDP_{t-1}}{GDP_t} = g_{t-1}\left(\frac{1}{g_t} - \frac{1}{g_{t-1}}\right) = -\frac{\Delta g_t}{g_t}$$

(7) $$int_N = int_R + \frac{\Delta g_t}{g_t} Debt$$

Substitution in (5) and expressing in GDP units yields equation (8).

(8) $$g_t \Delta D_t + s_t \Delta F_t = g_t int_R - \Delta g_t Debt + g_t \Delta A_t - g_t.sbal + g_t.evt$$

Which in turn can be substituted into equation (2) to derive

Note that:

$$D_t\Delta g_t + F_t\Delta s_t - \Delta g_t Debt = D_t\Delta g_t + F_t\Delta s_t - \Delta g_t(D_t + S_tF_t) = (\Delta s_t - S_t\Delta g_t)F_t = (\Delta s_t - s_t g_t \Delta g_t)F_t$$

(9) $$\Delta\frac{Debt}{GDP} = g_t int_R + g_t\Delta A_t - g_t.sbal + g_t.evt + [D_t\Delta g_t + F_t\Delta s_t - \Delta g_t Debt] + C$$

$$= g_t int_R + g_t\Delta A_t - g_t.sbal + g_t.evt + (\Delta s_t - s_t g_t \Delta g_t)F_t + C$$

The last expression is the decomposition used in the text. The components are, in turn, interest payments in excess of nominal GDP growth, the spending on or proceeds from asset acquisitions and privatizations, the structural fiscal balance, one-off non-budgetary adjustments, and finally, revaluations of existing debt due to exchange rate movements, inflation, and GDP growth.

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