

POLICY LESSONS FROM POSTMORTEMS OF JAMAICA'S TWO RECENT DEBT EXCHANGES

**VERY PRELIMINARY*

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Draft Date: 6 September 2013

Abstract

The Government of Jamaica completed two successful debt exchanges (JDX and NDX) in the last three years whereby domestic debt bondholders were asked to voluntarily swap their existing bonds for new bonds with lower coupons and extended maturities. This was in a context wherein the Government was challenged in paying its debt due to fast deteriorating debt dynamics but had a distinctive mandate to service its debt that was entrenched in Jamaica's constitution. Against this backdrop, this paper analyses the main elements and strategies behind the successes of the JDX and NDX. The study focuses on two questions. First, given the voluntary nature of both exchanges in which the GOJ was constitutionally bound to continue servicing the debt held by free riders, why were there virtually no holdouts? Second, in the face of severe implications for financial stability from 'knock on' effects from the debt swap as the financial sectors' portfolio was concentrated in GOJ debt, why did the swaps not adversely impact key financial variables? The paper also provides a simple framework of the individual bondholder decision problem which incorporates sovereign risk to justify that if the minimum participation rate (NPV haircut) is sufficiently high (low) then a rational bondholder would not holdout in a voluntary exchange.

JEL Classification Numbers: H63, G23, H12

Keywords: Jamaica Sovereign Debt Exchange; Debt Sustainability; Financial Stability

1.0 Introduction

Jamaica has one of the highest public debt-to-GDP ratios in the world which has contributed to real GDP average annual growth of below 1.0 per cent for over two decades. So as prior actions to an IMF Standby Arrangement (SBA) in 2010 and then an Extended Fund Facility (EFF) in 2013, the Government of Jamaica (GOJ) was required to complete voluntary debt exchanges with 100.0 per cent participation from eligible creditors. Negotiations between the GOJ and the Fund were lengthy in both instances as even with such a large debt overhang the Jamaican authorities were bent on defining medium-term programmes that would allow the GOJ to meet its debt obligations without violating their contractual obligations and undermining investor confidence. Like the Uruguayan debt exchange in 2003, the GOJ resisted for over a year the nature of the restructuring proposed by the IMF which initially involved scenarios with substantial principal haircuts on domestic and global bonds. The resistance to restructure external debt for both debt swaps was particularly strong as after finally consenting to embark on 'market friendly' exchanges, Jamaica only restructured its domestically issued and held debt.¹ Jamaica, like most small open economies, have strong incentives to avoid restructuring external debt, primarily because of benefits to government financing and national foreign currency reserves from international market access to a generous source of foreign capital. Moreover, as most domestic institutional creditors relied on GOJ global bonds primarily for hedging purposes against a frequently depreciating exchange rate, the financial sector had strong incentives to resist voluntary restructuring of their sovereign's external obligations.² This was especially in the context of safeguarding very favourable (though risky) margin arrangements offered by large US investment banks to Jamaica's institutional investors which allowed for significant and very profitable leverage opportunities in the domestic financial sector.

Before either debt exchange was under consideration domestic and international GOJ bond markets remained broadly liquid, with only occasional temporary refinancing challenges, even under the shroud of debt unsustainability. Indeed, when Jamaica faced severe external liquidity challenges in the past, the GOJ managed to service its foreign currency debt based on private placements with domestic financial institutions. Importantly, notwithstanding earning a reputation of having a strong 'willingness to pay', Jamaica's constitution mandated the servicing of GOJ debt as an obligation senior to almost all other government expenses. Consequent on these attributes, the only occasions when the market was virtually closed to the GOJ were as a direct consequence of concerns about the likelihood of substantial liability management programmes as IMF prior action in the lead up to both debt exchanges and the anticipation of credit downgrades that would follow. However, neither debt exchange was designed to return Jamaica to a sustainable debt path given the stark financial stability challenges associated with the sector's capacity to absorb even minor bond haircuts. Instead, the design of both swaps involved an

¹ The second debt exchange involved the voluntary swap of new bonds by global bonds offered by a few institutions in a private deal with eight large investors. Note that these bonds were mostly issued under New York law without collective action clauses (CACs) and hence would require the unanimous consent of all creditors to modify the payment terms of the bonds.

² Over 40.0 per cent of global bonds are estimated to be held by the domestic financial sector.

iterative process aimed at maximizing fiscal savings in a voluntary operation constrained by potential fiscal costs that could arise from a financial sector collapse while achieving virtually perfect creditor participation rates.

This paper analyses the main elements and strategies behind the successes of the JDX and NDX. The study focuses on two questions. First, given the voluntary nature of both exchanges in which the GOJ could not credibly commit to not continuing to service the debt held by free riders, why were there virtually no holdouts? Second, in the face of severe implications for financial stability from ‘knock on’ effects from a debt swap, why did the swaps not adversely impact key financial variables given that the financial sector portfolio was concentrated in GOJ debt? The next section presents synopses of both debt exchanges. Section 3 describes the strategies used by the GOJ in each debt exchange and provides an overview of the ‘carrots’ and ‘sticks’ used to tackle the free rider problem. Section 4 discusses the potential consequences of the debt exchanges for Jamaica informed by country experiences and explores the implications for financial stability. The concluding section assesses the policy lessons from the debt exchanges and ponders the way forward.

2.0 Synopses of the Debt Exchanges

There was extensive but informal consultation prior to the launch of both exchanges with a small group of large bondholder institutional investors appointed by the GOJ to act as ‘sponsors’ to the transaction. This was similar to the London Club-type arrangement³ that operated during the debt restructuring by various countries in the 1980s where a large bondholder group would operate as a ‘steering committee.’ The expectation was that this committee would be seen as acceptable by other bondholders although they were not actually appointed by them to represent their interests. At both launches, the GOJ announced the names of supporting institutions so that the broader market would be incentivised by the fact that that the market leaders and the GOJ had reached an agreement.

Importantly, the debt exchanges were not communicated simply as financial transactions but rather as an integral underpinning to Jamaica's strategic economic programme which included significant fiscal reforms buttressed by the planned elimination of the fiscal deficit in the near term. In the case of the JDX, the reforms included the introduction of a Fiscal Responsibility Framework, the establishment of a Central Treasury Management System as well as the implementation of a revamped tax administration programme and public sector transformation. For the NDX, the reforms focused on continuing outstanding reforms agreed under the JDX as well as further strengthening public financial management and introducing a fiscal rule. To underscore these commitments, the economic programme was set out in the Letter of Intent to the IMF and then the Fund staff publicly announced an ‘agreement in principle’ with Jamaica, subject to final approval by the IMF Executive Board, prior the launch of both exchanges. An unusually high minimum participation threshold was set effectively at 100.0 percent for both

³ An informal forum that brings together a debtor country's main commercial bank creditors and the government to engage in the process of debt renegotiation.

exchanges which was designed to assure creditors that there could be virtually no free-riders for the exchange to warrant IMF Board approval.

2.1 The JDX

Jamaica's first debt exchange, dubbed the Jamaica Debt Exchange or JDX, was launched by the GOJ on 14 January 2010 as a prior action to a 27-month (IMF) Standby Arrangement to reverse an unsustainable level of public debt of 135.0 percent of GDP at the end of 2009. At this time, domestic debt accounted for over 75.0 percent of interest expense with 40.0 percent (27.0 percent of GDP) maturing within 2 years. To substantially change Jamaica's debt dynamics in the context of a market friendly exchange, the JDX was a par-for-par offer to voluntarily swap approximately \$700 billion of existing domestic bonds for new benchmark securities with lower coupons and longer maturities. The JDX was designed to generate interest savings of 3.5 percent of GDP and reduce the amount of maturing debt over the next three years by 65.0 percent, while maintaining a stable financial system. The swap was 100.0 per cent successful.

At the expiration of the swap, the weighted average age of domestic debt increased to 8.3 years from 4.7 years prior to the exchange and the average coupon on outstanding domestic debt declined by an average of 650 bps to 12.5 per cent. The success of the JDX resulted in significant declines in yields on domestic GOJ bonds. Yields declined for the 15-year bond to 13.5 per cent at end-March 2010 relative to 19.3 per cent at end-2008, respectively. For 2010, the value of the Jamaica Dollar appreciated by 4.4 per cent against the US dollar, reflecting positive investor sentiment. This was in contrast to the depreciation of 10.0 per cent for 2009.

Fitch and S&P ratings agencies initially downgraded Jamaica's sovereign long-term foreign and local currency bonds to 'RD' (Restricted Default) and 'SD' (Selected Default), respectively, as they considered the JDX a 'distressed exchange.' The ratings agencies later reversed its actions and after Government secured the approval of the IMF for the Stand-by facility raised the ratings on Jamaica's sovereign bonds to grades that were higher than pre-JDX. Against this backdrop and the BOJ reducing its signal rates, short-term Treasury bill market yields declined to below the BOJ's benchmark 30-day rate of 10.0 per cent in April relative to 16.0 to 17.0 per cent at end-2009. Furthermore, the New Bonds were trading above par and spreads on GOJ global bonds narrowed significantly. The GOJ successfully re-entered to the domestic capital market at substantially lower rates compared to pre-JDX in April 2010. In February 2011, US\$400 million was raised in the international market by way of a re-opening of the 2019 Global Bond at a favourable yield to maturity of 7.95 per cent and was heavily oversubscribed.

2.2 The NDX

The second debt exchange, named the National Debt Exchange (NDX), was launched by the GOJ on 12 February 2013 after failing to capitalize on the fiscal space created by the JDX which was needed to underpin sustained improvement in debt sustainability. Successful completion of the NDX was a prior action for a four-year Extended Fund Facility (EFF) agreement with the IMF. Public debt at close to 150.0 percent of GDP, significant expansions in wage costs, deteriorating fiscal performances and stalled negotiations with the IMF posed serious challenges to the conclusion of a new economic agreement

with the IMF.⁴ With large maturities of debt scheduled to mature in early 2013, there was declining appetite for GOJ bonds and there continued to be high demand for foreign exchange.

The NDX was designed explicitly at achieving fiscal savings of 8.5 percent of GDP (J\$17.0 billion per year), and thereby lowering the debt-to-GDP ratio to a near sustainable level of 95.0 per cent by 2020 in the context of a very tight fiscal programme. Similar to the JDX, the NDX included the voluntary rolling of GOJ securities by accepting new instruments with lower coupons in the range of 75 to 500 bps and extended maturities of 3 to 10 years. The NDX was completed in two phases with a participation rate of virtually 100.0 percent. The first leg of the exchange included only domestically issued and held bonds, while the second leg was a 'private exchange' of a broader set of eligible instruments, including foreign law bonds, with eight large institutional holders of GOJ domestic debt.

In the context of projected near-term dampening in economic activity along with the onset of strong fiscal consolidation, the BOJ lowered its signal rate by 50 basis points in March 2013. These developments influenced a fall in Treasury bill yields by over 100 basis points. However, despite moving from Selective Default status following the NDX, the GOJ did not regain its ratings post-restructuring.⁵

3.0 Exchange Strategies

The key to the strategy for both exchanges was to convince creditors that the voluntary debt swap would be transformative on the path to public debt sustainability through improved economic growth and fiscal consolidation, thereby increasing the market value of the 'New' GOJ bonds. At the same time, disincentives had to be put in place to discourage the temptation of bondholders to 'free ride,' such as by orchestrating a reduction in the market value of the Old Bonds post-exchange. This was the strategy used in Ecuador (2001), Uruguay (2003) and later in Greece (2012), buttressed by CACs and exit consent provisions, statutorily retrofitted in the latter two cases, to maximize creditor participation rates and penalize free riding.^{6,7} For these voluntary exchanges the idea was to communicate to creditors that the cost of preventing a default arising from liquidity problems was economical compared to outright

⁴ The 27-month Stand-By Arrangement went off track after the third review in January 2011.

⁵ Following the NDX, Fitch Ratings upgraded Jamaica's sovereign ratings to 'CCC' reflecting 'continuing concerns about public debt sustainability and still high external financing needs'.

⁶ Exit consent provisions contractually permit the removal of the non-financial terms of 'Old Bonds' by a simple majority of bondholders in a debt swap when accepting and exiting from the exchange offer to make them subordinate to the 'New Bonds'.

⁷ For domestic law bonds that did not include CACs, Greek authorities passed a statute which bound all bondholders to the restructuring terms agreed by a qualified majority of bondholders. Uruguay and Greece also included 'aggregation' clauses in their sovereign bonds.

default.⁸ Indeed, the challenge for the GOJ and its financial advisor (Citi) was to apply appropriate ‘carrot’ and ‘stick’ features to modify the payoff structure of an ‘uncooperative game’, which resembled The Prisoner’s Dilemma.⁹ In this 2-by-2 game, both the government (prisoner 1) and its creditors (prisoner 2) are better off ex-post to induce a high level of participation in the exchange of existing bonds for New Bonds, as the New Bonds will have a higher market value (see **Table 1**). The dominant non-cooperative solution in this game is one where creditors holdout and the government defaults, which is more expensive for both players as the market value of existing bonds declines and debt dynamics worsen. That is, creditors’ dominant strategy is always ‘holdout’: In the event that the government chooses ‘exchange offer’, creditors face a ‘participate’ payoff of 50 and a ‘holdout’ payoff of 60; alternatively, if the government chooses ‘default’, creditors faces a ‘participate’ payoff of 20 and a ‘holdout’ payoff of 40. By the same logic in this symmetric game, the government’s dominant strategy is always ‘default’: In this case, if creditors choose ‘participate’, the government faces an ‘exchange offer’ payoff of 50 and a ‘default’ payoff of 60; alternatively, if creditors choose ‘holdout’, the government faces a ‘exchange offer’ payoff of 20 and a ‘default’ payoff of 40.

Table 1. Payoffs to (*Government, Creditors*) in the Non-Cooperative Debt Exchange

Government	Creditors	
	Participate	Holdout
Exchange Offer	(50, 50)	(20, 60)
Default	(60, 20)	(40, 40)

According to the principles of cooperative game theory, if the government and creditors could engage in constructive dialogue, prior to the exchange offer, and make *binding commitments* then the expected payoffs would change as they would undertake to share the gains from cooperation and increase the losses from non-cooperation (to deal with potential free riders). The dialogue would entail securing binding covenants between both players in the exchange offer. In this case, the payoff structure could change in which the cooperative solution has a high up-side in bond prices and improved debt dynamics influencing a credit rating upgrade (see **Table 2**). On the contrary, any other strategy would likely translate to severe losses, such as a plummet in bond prices and long-term shutting out of the capital market, especially in the case of a rating downgrade to Default. Exacerbated losses was especially credible in light of the consequences of a collapse in investor confidence following the rejection of an agreement by the IMF and would be reflected in sharp depreciation and higher interest rates which would characterize a failed exchange offer, worsening GOJ debt dynamics. In this case, depending on the size of the haircut, the dominant strategy for the government and creditors is obviously ‘exchange

⁸ Note that the distinction between liquidity versus solvency sovereign debt problems is critical as investor must believe that the government will continue servicing the debt until the maturity of their bondholding as a direct consequence of the fiscal space provided by the proposed exchange.

⁹ See Andritzky (2006) and Reiffel (2003) for examples of carrot and stick features that have been used in previous debt exchange offers.

offer’ and ‘participate’, respectively. The question remains: what is the threshold haircut that would be consistent with the cooperative solution? A framework to guide an answer to this question is developed in Section 5 of this paper.

Table 2. Payoffs to (*Government, Creditors*) in the Cooperative Debt Exchange

Government	Creditors		
		Participate	Holdout
	Exchange Offer	(90, 90)	(10, 10)
	Default	(10, 10)	(10, 10)

This cooperative solution is theoretically possible but the experiences of a number of countries that have undertaken debt exchanges suggest that it is difficult to achieve high participation rates, particularly in the absence of a collective action clause (CAC) and exit consent provisions. The challenge is even more acute in cases where a significant portion of the debt is concentrated in the hands of local institutional investors, as default represents a large contingent liability in the form of a potentially costly bailout. Where the debt is largely held by large institutional investors, a London Club-type arrangement is typically used to effect debt restructuring, as in the case of Russia and Turkey. Where this opportunity is not available, countries generally have to employ some form of ‘hard approach’ to restructuring (e.g. Argentina, Uruguay). That is, it is either legislated or the terms of restructuring are set on a ‘take-it-or-leave-it’ basis and acceptance implies precedence in the order of payment.

However, a strategy of credibly presenting a default option could not be used in Jamaica’s case for three reasons:

1. First, and most convincing, is there is a constitutional restriction on government debt default. Therefore, the Jamaican authorities could not credible convey to bondholders that the alternative to a restructuring was default as creditors would have a prima facie case using litigation to force the GOJ to resume payments if it stopped servicing its debts.
2. Second, as the proposed debt exchanges were not on foreign law bonds, it would not have been triggered by an inability of the GOJ to roll over external debt. However, countries are seldom bankrupt in their own currency as central banks may print currency for the payment of domestic currency debts. Given that the restructuring was primarily on domestic debt denominated in domestic currency and appeared to be prompted by an upcoming large bunching of domestic maturities, arguments surrounding ‘capacity to repay’ would be less credible.¹⁰

¹⁰ Indeed in the months leading up to both debt exchanges when rumours of a restructuring were rampant, the Central Bank extended billions of domestic currency credit to the GOJ, which were later either repaid or converted to marketable securities. The Bank also purchased bonds from Government public offers poorly received by the market. Another point supporting the possibility of the GOJ regaining sustainability of the debt is that Jamaica has a history of sustaining very high primary surpluses even in already difficult times.

3. Finally, although the financial sector could potentially absorb direct losses from the debt exchanges, the financial sector was vulnerable to severe 'knock on' (second-round) effects surrounding even a mild form of debt swap.

So how did the GOJ and its creditors arrive at a cooperative solution?

3.1 The Strategy in the JDX

The strategy employed by the GOJ to achieve full participation for the JDX was aggressive. Although there was some financial sector consultation on expanding the range of instrument-offering prior to crafting the exchange, the debt transaction offer was unilateral with a 'take-it-or-leave-it' approach. The objectives of the exchange were to: lower initial yield of Jamaica Dollar instruments to near 12.5 per cent; lower USD fixed rate bonds to near 7.0 per cent, and; minimize initial variable exposure through fixing of all VR instruments for 12 months. So as not to increase the risk profile of domestic debt in relation to interest rate and currency risks, the instrument-type mapping rules of the JDX were: fixed rate bonds can only be exchanged for new fixed rate bonds; US dollar bonds can only be exchanged for new US dollar bonds, and; variable rate bonds can be exchanged for new variable rate bonds, fixed rate bonds or the new CPI-linked bonds. Finally, the JDX maturity rules covering the 350 eligible domestic bonds were:

- Bonds maturing in less than 9 months can exchange to any instruments with a maturity two years and longer from the settlement of the transaction other than a defined "short fixed rate package" of 3M, 6M, 1Y, 2Y, 3Y Notes.
- Bond maturing between 9 months and 1.5 years can exchange to any instruments with a maturity of 3 years and longer from the settlement date of the transaction.
- Any instrument maturing longer than 1.5 years will need to be exchanged for an instrument or package with a maturity at least 2 years longer than the maturity of the instrument.

The strategy involved first making a convincing case to the market on the prospect of significant cost savings that would contribute to sustainable debt dynamics from voluntary par-for-par exchange of expensive bonds with low coupon, longer maturity instruments. The operation was significantly based on game theory principles in that threat of the Government exercising the call option embedded in GOJ domestic bonds, which permitted the government to redeem the bonds for cash at par with two months' notice, induced institutions to voluntarily agree to the debt exchange. The fundamental premise of the operation was that institutions would prefer bonds, not cash. The incentive to participate lay in the fact that if institutions did not voluntarily accept the exchange offer before the call was exercised then they would have to later accept cash upon execution without any investment options as the GOJ would exit market for upwards to a year facilitated by multilateral backstop facility ('stick'). Further, if institutions were unwilling to participate in the exchange and decided to holdout for the year while the GOJ was absent from the market they will lose 'participation' yield because official rates will be much lower post-JDX on the promise of greatly improved debt dynamics ('stick').

Multilaterals were on board with the debt operation by funding a Financial Sector Support Fund (FSSF) announced at approximately US\$1.0 billion (almost 10.0 per cent of GDP), which was the 'worse case' liquidity support needed as informed by BOJ financial sector stress tests. Only financial institutions which participated with over 90.0 per cent of eligible bonds could obtain collateralised liquidity support from the FSSF without the application haircuts, which resulted in the market expecting a liquidity premium on the New bonds ('carrot'). In addition, the costly alternative of a repo transaction with a 75.0 per cent haircut on collateral using Old Bonds to obtain discretionary liquidity support from the Central Bank, would result in further illiquidity of these securities ('stick').

Additional JDX sweeteners included:

- Industry consultation allowed for the introduction of a new series of CPI-indexed bonds as part of the exchange offer. In addition, the new fixed rate bonds were offered in a non-callable format whereas the old bonds were callable at par value prior to the JDX. New variable rate bonds on offer also included limited call protection.
- The JDX was used as a linchpin to deepen and strengthen the development of the domestic capital market. Over 350 very small GOJ domestic paper-based securities were dematerialized and replaced by 23 new benchmark bonds in the BOJ's electronic central securities depository: 9 fixed rate (FR) bonds; 9 variable rate (VR); 3 United States dollar (USD) bonds, and 2 CPI-linked bonds. This greatly improved liquidity risk for participants in the JDX as these smaller set of bonds would be traded with much higher liquidity and, hence, better price discovery. The introduction of benchmark securities also allowed for the establishment of a domestic yield curve. Furthermore, the exchange offer preserved the relative term structure along the yield curve (net present value or swap equivalence) consistent with the concept of burden sharing across bond holders.
- Against the backdrop of a staff level agreement on Jamaica's economic programme in December 2009 as well as projected sharp improvement in fiscal and debt dynamics after completion of the debt exchange, the BOJ reduced its 30-day signal rate. Interest rates on GOJ Treasury Bills and the money market also fell. In addition, after the JDX announcement, the BOJ temporarily removed the tenors over 30 days on its open market operation (OMO) instruments to allow for the smooth establishment of a new OMO yield curve following the closure of the exchange.¹¹ Importantly, the BOJ indicated at the launch that lower signal rates were projected post-JDX which would be consistent with the improved fiscal and debt paths of the Government. It was also stated at the launch that the New Bonds were priced on a curve building in the lower rate environment that will apply going forward starting with the short end being priced off of prevailing BOJ 30-day rate (which was lowered before JDX settlement). The result was to incentivize a high level of financial sector participation as lower market rates relative to coupons on the New Bonds would increase the fair value of these bonds which would counter the capital

¹¹ The Bank of Jamaica withdrew its 60-day to 180-day tenors from the market, effective 12 January 2010.

hit from the exchange.¹² Also lower interest rates would reduce interest expenses on the predominately short-term liabilities and so dampen the adverse impact of the exchange on profits.

3.2 The Strategy in the NDX

The failure of the JDX in respect of fully following through with the fiscal and debt reforms presented a significant challenge to a credible strategy to incentivize the 100.0 percent participation needed to satisfy the prior action to lock in savings for GOJ of 8.5 percent of GDP by 2020. Also working against the application of an aggressive JDX-type strategy design was the fact that call options had been removed from GOJ fixed rate bonds in the JDX and hence couldn't be used as a threat to potential free-riders. For these reasons, the strategy was to complete the exchange in incremental steps in order to strengthen support at each stage of the negotiation process. The transaction was discussed initially only with the 3 largest holders of GOJ debt (Big 3) at the end-January 2013. As in the JDX, the transaction was designed to maintain NPV equivalence along a new yield curve. The key commercial features of the initial offer to the Big 3 included:

- VRs exchanged according to: 80% in lower margin longer maturity new VRs and 20% in a 7% 2021 fixed rate bond (average lower 88 bps margin).
- FRs exchanged according to: 80% in lower coupon longer maturity new FRs and 20% in a 7% 2020 fixed rate bond (1.5% lower coupon in most cases).
- Local USD bonds (2013, 2016) exchanged according to: 80% in lower coupon longer maturity new USD bonds and 20% in a 2019 4% USD local bond.
- GoJ Global bonds, Air Jamaica, NROC USD international bonds owned by local institutions privately refinanced into lower coupon, longer maturity USD local law bonds.
- CPI bonds exchanged according to: 80% in existing bonds and 20% in a 7% 2021 FR bond.

In the intense negotiations which ensued with the Big 3, the GOJ agreed to comprehensively redesign the offer, particularly in two major ways. First, given nervousness surrounding the implications from including foreign law bonds even in a private offer, these bonds were removed from the offer. However, the GOJ indicated the potential for a 'second stage' private trade, whereby GOJ would purchase the foreign law public sector bonds from the largest institutional holders in Jamaica and these holders would subscribe to the new issue for the same settlement date. Important to the strategy, the GOJ indicated that the burden on this set of large bondholders for the second stage of the NDX would depend directly

¹² The fair value increase would apply to fixed rate instruments. However, GOJ variable rate bonds were fixed for one year as a component of the exchange.

on the success of the first phase (stick). Second, the new 7.0 per cent, 2020 and 7.0 per cent, 2021 bonds were removed from the list of options and the reduction in coupons on a NPV equivalent basis along the curve was rejected by the Big 3. Instead, after passing stress testing requirements by the BOJ, a new design was agreed which involved very deep haircuts on coupons on the short end of the curve of up to 500 bps and smaller haircuts of around 100 bps at the long end.

Also, following on market feedback from the JDX, two special features were discussed in the offer. The first was that small retail bondholders were unlikely to participate given that many of them would be unable to absorb further setback on their bond maturities. Therefore, a 1-year fixed rate domestic currency 7.0 per cent bond for very small retail holders (with aggregate holdings of less than J\$25 million) would be offered with respect to bonds maturing in 2013 and 2014 (carrot). Second, to increase the balance of burden on the public sector as endorsed by the Big 3, a special fixed rate accreting bond would be the only option for public sector entities which would have an initial 0.8:1 exchange ratio, but the bond would accrete back to par over 15 years (carrot). This bond offered greater potential savings and hence was less attractive compared to the other bonds on offer in the exchange.

Following on these revisions to the proposed transaction, the Big 3 were then sponsors to the next largest bondholder group of 5 institutional investors to assist the GOJ in gaining their commitment to fully support the transaction and then assist in marketing the NDX in the public launch. However, some design issues including the absence of NPV swap equivalence threatened to derail the pending transaction. After strong resistance initially by a few institutions, the proposed exchange was taken fully on board, perhaps for fear of repercussions from potential public perception that these institutions were not patriotic (as the BOJ had indicated its confidence that the system would remain profitable and the capital adequacy manageable at the launch) or had a particularly fragile capital base (stick).

The GOJ also indicated that the FSSF would be resuscitated following the completion of the exchange, under the same conditions as the JDX (carrot). Further, the GOJ committed that a 'Watchdog' committee of large bondholders and programme implementers would be appointed with unfettered access by the private sector members to data related to the Fund's quarterly performance tests on an ongoing basis and supported by a programme compliance unit to be established in the Ministry of Finance (carrot). As there was not much more to be offered in terms of carrots and sticks when compared to the JDX, the key incentive for participation which was sold to the sponsors was the projected impact from positive investor expectations after success of the NDX on debt sustainability and hence GOJ credit ratings.

Although the NDX drew 99.2 percent participation in the first stage, or 0.36 per cent short of the required 8.5 per cent GOJ savings, the IMF insisted that 100.0 percent participation was required for the transaction to achieve the targeted debt reduction. So the second stage was initiated with the largest 8 institutional investors to scrape an additional US\$1.1 billion per year in savings by purchasing the global and guaranteed bonds at par and refinancing using low cost local USD loans or bonds. Understandable, this final stage was particularly acrimonious given the almost inconceivable near-perfect success of the public offer. Furthermore, the rating agencies, having moved the rating from qualified default category after success of the NDX, were keeping Jamaica at CCC which they indicated could be lowered, rather

than going back to the B- rating as after JDX. Another set of intense negotiations had to be conducted given the large capital hit projected from the private deal. Finally, after getting IMF endorsement, the creditors agreed to swap eligible securities which included global bonds for their choice of two new special bonds designed to substantially lower the capital impairment from the trade. The proposed bonds would be 'puttable' in 5 years at 5 percent coupon that steps up to 11 percent in 2020 for 4.5 and 10.5 years, respectively.

4.0 Potential Consequences of the Debt Exchanges for Jamaica

BOJ's role in the design of the JDX and NDX was to define the boundaries for each of the numerous debt proposals in terms of the financial sector's capacity to absorb the direct and indirect impact. The negotiation with the Fund surrounding the anticipated consequences of the debt exchanges for Jamaica facilitated by the delineation of the various plausible risks attached to the debt exchange proposals as well as contingency planning for a potentially adverse outcome.

For both exchanges the key risk factors underlying the GOJ debt profile made the sovereign debt portfolio of financial institutions severely vulnerable to heightened investor risk aversion. The structure of the sovereign debt portfolio consisted of large exposures to floating interest and foreign currency rates which had serious consequences for GOJ liquidity as well as solvency considerations in the context of a collapse in investor confidence. For example, higher foreign exchange rates and interest rates following the intensification of the 2008 global crisis contributed to the unsustainability of Jamaica's debt by significantly increasing debt servicing costs. The acceleration in the international financial crisis in the last quarter of 2008 influenced a 10.0 percent depreciation in the J\$/US\$ exchange rate and, to curtail significant private capital outflows, the Central Bank increased interest rates by over 500 bps to above 20.0 percent during the quarter. This currency depreciation and increase in interest rates contributed to the foreign currency-related portion of the domestic debt and the weighted average interest rate on new domestic debt both increasing by around 25.0 percent for 2008.

Given that Jamaica's financial system held large amounts of government debt (**65.0 per cent** of the domestic debt stock), the expectation was that a collapse in confidence in GOJ solvency would lead to large-scale deposit runs and a credit crunch.¹³ Consequently, as the Russian experience demonstrated, implementing a liability management operation without full support from the financial sector can be catastrophic. In July 1998, Russia attempted a debt swap of short-term Ruble Treasury Bills (GKOs) for new long-term Eurobonds as part of a multilateral rescue programme that included fiscal and structural reforms as well as a substantial liquidity injection. However, the liability management operation triggered a currency and debt crisis. This was in a context where the market realized that the debt swap would not result in transformation to public debt sustainability. Consequently there were sharp jumps in bond yields reflecting significant devaluation and default risks. By August 1998, Russia had defaulted and

¹³ Financial institutions could face the associated risk of deterioration in the credit quality ratio. Some institutions may not be able to make adequate provisions for these risks and would have to curtail lending as their balance sheets shrink.

the Russian Ruble was devalued, given a collapse in market confidence and sharp declines in domestic and dollar-denominated bond prices, triggering margin calls and declining foreign currency reserves. By the time the Ruble was floated in September, speculative attacks had resulted in a depreciation in the exchange rate of the Ruble vis-à-vis the US dollar of over 70.0 per cent since the initial devaluation. For 1998, Russian GDP contracted by almost 5.0 per cent, the 12-month inflation reached 84.0 per cent and the banking system (which held a significant portion of Russian defaulted debt) collapsed. By the end of 1998 Russia had to seek further debt rescheduling of the Paris Club component of its debt and in August 2000 secured a similar agreement on the London Club component.

Another argument against GOJ debt restructuring was that the international credit rating companies clearly indicated prior to both exchanges that any form of distressed debt exchange would be considered as a default, a trigger for further downgrades for Jamaica. The international capital market would therefore be effectively closed to Jamaica as in the case of Ecuador which took five years to re-access the international capital markets following its debt exchange. Seminal research Cruces and Trebesch (2011) covering all sovereign debt restructurings with foreign banks and bondholders between 1970 and 2010, put significant and credible doubt on claims that higher spreads and exclusion from the capital markets following sovereign default is short-lived. This represented the first study that explicitly accounted for the size of the haircut when determining the historical consequences of default. The main conclusions were that deeper haircuts are associated with higher post-restructuring global bond spreads and longer duration of exclusion from capital markets.

Further, if there were a debt restructuring the perception of increased risk of GOJ debt was expected to significantly blunt confidence in the Jamaican economy in general, thereby affecting the creditworthiness of private institutions as well. This would translate into a further cut in credit lines to domestic institutions, which would have grave implications for external trade and the stability of the foreign exchange market. Jamaica had already suffered the effects of cuts in credit lines and margin calls as a result of the international credit crunch in 2008. Further withdrawal of credit lines and margin calls would be devastating to the payments system, financial markets and the economy in general.

There was also a real risk of capital flight and financial market instability associated with these types of liability management programmes. In the case of Uruguay, which undertook similar 'market friendly' debt rescheduling to Jamaica, within six months of the announcement of the restructuring programme in April 2003 capital outflows surged by over 700.0 per cent. The outflows continued into the following year. Although not as severe, Ukraine had a similar experience. Jamaica would not be able to withstand even a mild form of capital flight in the recessionary periods surrounding both exchanges. This would precipitate massive exchange rate depreciation and general macroeconomic instability. The tightening of monetary policy that would be required to restore stability would lead to higher debt service costs to the Government and defeat the main objective of the debt swaps. By the same token, the further weakening of the Jamaican economy would work against any improvement in the country's fiscal and debt profiles.

In terms of the financial sector regulation, the Basle Core Principles recommended specific risk weights to various asset categories, against which proportionate capital is required to be held.¹⁴ Prior to the first debt exchange, the regulatory authorities applied a zero weight (implying zero risk) to domestic and foreign currency GOJ debt on the basis of the Government's strong track record and commitment to debt repayment and the supporting constitutional provisions in this regard. A rating downgrade of GOJ debt to Default would automatically place this debt in the category of impaired and poorly rated assets, thus immediately triggering higher risk weighting and provisioning requirements applicable to such categories of assets. The risk weight normally applicable would be at least 100.0 per cent and would thus require very significant increases in capital of the entire financial system. A further point to note is that the financial sector, especially securities dealers, held a significant level of GOJ debt in the trading book against which it would have to absorb losses from falls in market value consequent on further rating downgrades.

There was also strong evidence that sovereign debt crisis coincides with a banking and/or a currency crisis, resulting in considerable output losses over the medium term. The implication is that it may be less costly to programme a measured amortization of debt than to restructure debt. For example, in the De Paoli, Hoggarth and Saporta (2009) sample of 35 countries and 39 sovereign crisis episodes over 1970 to 2000, less than 10.0 percent contained crises associated with sovereign default only. Moreover, about 50.0 percent of the sample consisted of triple (sovereign, banking and currency) crises.^{15,16,17} In order to compute output losses post-default/restructuring, counterfactual output growth rate in the absence of a crisis is estimated using a two-stage least squares procedure to address endogeneity problems.¹⁸ The results of this exercise, in the case of triple crises, point to lengthy sovereign crisis episodes (12.7 years, on average) and deep recessions (11.1 percent per year of annual pre-crisis GDP in the median case).

4.1 Stress Testing the Financial Stability Implications of Debt Restructuring

A critical deliverable for the central bank for both debt exchanges was the stability and resilience of the financial system during and after the transaction given that financial system held the majority of the

¹⁴ These are the international standards that govern the prudential management of the financial system, to which Jamaica adheres.

¹⁵ Sovereign default is defined as occurring when either (i) the sovereign's arrears on principal are 5.0 per cent or more of the total outstanding debt owed to the external private sector; (ii) arrears on interest payments are 1.5 per cent or more; or (iii) a rescheduling agreement is reached with foreign private sector creditors.

¹⁶ The definition of banking crisis is when 'much or all' of the banking system's capital is exhausted.

¹⁷ A currency crisis occurs when the domestic nominal exchange rate against the dollar depreciates by at least 25.0 per cent in any one year combined with a 10.0 per cent increase in the rate of depreciation.

¹⁸ Sovereign debt crises in the sample could have been caused by recessions. Hence, if endogeneity is not controlled for in estimating potential output, growth could be overstated.

domestic debt. The financial statements of deposit-taking institutions (DTIs), securities dealers (SDs) and insurance companies (ICs) were carefully stress-tested on the basis of the potential consequences of restructuring highlighted in the previous section to evaluate the susceptibility of capital adequacy ratios (CARs) to risks emanating from the debt exchange. Stress testing was conducted in an iterative manner to determine a final proposed transaction that would achieve the targeted GOJ savings with the least impact of financial stability. Specifically, detailed inventories of these institutions' GOJ bond holdings were utilized in the stress tests to compute expected income and fair value losses by financial institutions as well as other potential 'knock-on' effects or 'tail events' associated with the transaction.

Tail events were simulated pertaining to liquidity pressures or 'runs', credit quality deterioration and sharp exchange rate depreciation. The regulatory response to curb the depreciation envisaged significant monetary tightening thereby causing a large upward shift of the yield curve. Based on these 'worst case' scenarios, some institutions could experience material combined losses from the transaction and second-round shocks with potential for capital shortfall below minimum regulatory requirements inclusive of insolvency. The potential impact on liquidity and capital arising from an extremely adverse hypothetical outcome following the transaction informed the size of the large multilateral (IMF) support to ensure the availability of a sufficient official backstop FSSF against a sudden stop or reversal in liquidity flow to institutions by creditors.

It was accepted by all stakeholders that a downgrade of GOJ debt to Default by rating agencies could result in marginalization of financial institutions from local and international money markets given their high exposure to GOJ debt. On the other hand, it was possible that given the positive impact of the debt transaction and strong fiscal consolidation, market prices could rebound in hand with ratings upgrade of GOJ debt instruments, curtailing loss on the books of financial institutions.

The assumptions underlying each debt exchange arising from the anticipated downgrade to Default are set out below. The institutional CAR impact from these shocks was used by the BOJ to justify an aggregate quantitative estimate for multilateral support to avoid meltdown of the system.

In the case of the JDX the broad assumptions arising from a GOJ rating downgrade to Default were:

- I. Income (6mths) & fair value losses on GOJ securities (marked-to-market) from the coupon cut and maturity extensions of the debt exchange.¹⁹
- II. Income (6mths) & fair value losses on GOJ securities arising from second round effects from an increase in the BOJ signal rate if an adverse economic scenario were to unfold; it was assumed that institutions can renegotiate the terms of their liabilities within 6 months with the implication that for the year following the transaction, interest spreads would have been cut by a half.
- III. Depreciation in the exchange rate.

¹⁹ Interest margins were assumed to adjust after six months given evidence of a very short-term liability profile especially in the case of SDs.

- IV. Cancelled margin/repurchase agreements.
- V. A partial loss of liquid liabilities/ funds under management.
- VI. A market price decline in domestic currency GOJ securities applied to bonds held as available for sale (AFS).
- VII. New provision for public sector exposure including GOJ securities held to maturity (HTM).
- VIII. New risk weights on domestic currency and foreign currency GOJ securities.

For the NDX stress tests, the benign market response experienced at the completion of the JDX did not justify the inclusion of a market price decline. In addition, margin arrangements with investment institutions overseas were almost non-existent at the time of the NDX. Furthermore, the 100.0 per cent risk weighting on foreign currency GOJ exposures that was introduced after the JDX was agreed with the IMF to be an adequate regulatory response, so additional provisioning and risk weighting were not included in the stress tests. However, a new stress factor of a spike in non-performing loans was incorporated given the deterioration in credit quality observed since the JDX. Against this backdrop, as well as some conservative refinements arising out of the JDX stress tests, the following shocks were incorporated in the NDX stress tests:

- I. Income (6mths) & fair value losses on GOJ securities (marked-to-market) from the coupon cut and maturity extensions of the debt exchange.
- II. Income (6mths) & fair value losses on GOJ securities arising from second round effects from an increase in the BOJ signal rate if an adverse economic scenario were to unfold. However a non-parallel shift in the domestic yield curve was assumed when calculating second round fair value losses with the greater shift at the short end (less than one year) of the yield curve. Also only a partial pass-through to rates on short-term liabilities was assumed following the increase in the BOJ signal rate.
- III. Depreciation in the exchange rate.
- IV. A partial loss of liquid liabilities/ funds under management.
- V. One third of past due loans less than 90 days overdue migrating to nonperforming loans (greater than 90 days past due).

Importantly, for both exchanges, the main source of the simulated losses was not from the debt swap itself but rather due to the possible second-round impact, in particular from a sharp increase in BOJ interest rates if an adverse macroeconomic scenario were to develop.

5.0 Policy Lessons from Both Debt Exchanges

A critical policy lesson from both debt exchanges is that only the stick of ‘high minimum participation threshold set effectively at 100.0 percent by the IMF’ could be claimed to be strong enough to almost guarantee participation, arising from the implications of a failed exchange on GOJ credit ratings and the wider economy. In fact for both exchanges, there were material holdouts prior to the original exchange settlement dates which could have derailed the transactions. Hence, the settlement dates for both exchanges were extended to allow for holdouts to reconsider as the failure to reach the minimum participation threshold of 100.0 per cent would result in a failed exchange with no IMF support and likely rating downgrade. Importantly, the Fund did not budge on its pre-commitment, which was particularly evident in the case of the NDX whereby it insisted that the outstanding 0.36 percentage points of the 8.5 per cent GOJ targeted saving, after the first stage of the exchange, had to be completed to satisfy the prior action. So without the 100.0 minimum participation threshold, the non-cooperative solution to the 2-by-2 game presented in Table 1 of Section 3 of this paper would, with high probability, have led to significant additional losses for GOJ creditors and the GOJ from the sharp-depreciation-high-interest-rate nexus that would undoubtedly characterize the local markets following the rejection of an agreement by the IMF. **Table 4** presents a matrix of the ‘carrots’ and ‘sticks’ applicable for both debt exchanges as well as the strength of each to engender a high probability of a successful exchange, particularly from the perspective of the individual bondholder.

It is possible to construct a framework to determine the parameters which would influence the bondholder’s decision to participate in the exchange offer. Gulati and Zettelmeyer (2012) present an elegant model of a bondholder’s decision problem with sovereign risk, designed to create a risk-return tradeoff. The key assumptions of the model are: (a) a holdout will not necessarily result in a failed exchange as the individual bondholder is small enough to free ride (that is, only if the bondholder were very large would non-participation trigger default) and; (b) the sovereign can be downgraded post-exchange whether or not the bondholder participates. Thus, consider the possible payoffs faced by the individual bondholder in the debt exchange who must make a decision between two alternatives at $t=0$ of participate or holdout before the settlement of the debt exchange at $t=1$ (see **Figure 1**). If he chooses to participate, he receives one of two possible payoffs at time $t=1$, depending on the credit rating received by the sovereign: if the sovereign is not downgraded, he receives a payoff of $1-h$ with probability p , where h denotes the NPV haircut on the old bond in the exchange, and; if the sovereign is downgraded, he receives a payoff (recovery value) of $0 \leq v^n \leq 1$ with probability $1-p$. Alternatively, if the bondholder chooses to holdout he receives: a payoff of 1 with probability p or $0 \leq v_0 \leq 1$ with probability $1-p$, where $v^n > v_0$. Then the decision rule for participating becomes:

$$p(1 - h) + (1 - p)v^n \geq p + (1 - p)v_0$$

which reduces to:

$$p \leq (v^n - v_0)/(v^n - v_0 + h).$$

Thus, the bondholder may accept the debt exchange if: (1) p is sufficiently low, and; (2) v^n is sufficiently high relative to v_0 .

Table 4. Matrix of Carrots and Sticks for the JDX and NDX

Carrots	JDX	NDX	Provides Strong Incentive to Participate by Individual Bondholder?	Sticks	JDX	NDX	Provides Strong Disincentive for Holdout by Individual Bondholder?
1. Goodwill from announcement of sponsors at public launch	Yes	Yes	No	1. Negative market perception of institutional holdouts	Yes	Yes	No
2. Access to FSSF for liquidity and solvency support	Yes	Yes	No	2. Call option in Old Bonds	Yes	No	No
3. Financial sector consultation on exchange structure	Yes	Yes	No	3. Lower coupon instruments on offer post-exchange relative to coupon offered in exchange	Yes	Yes	No
4. Fair value gains and lower interest expenses from reduction in BOJ signal rate	Yes	Yes	No	4. Deep haircut for LOLR support from BOJ for holdout institutions	Yes	Yes	No
5. Increased liquidity of New Bonds and establishment of a yield curve	Yes	No	No	5. Two-stage negotiation structure	No	Yes	No
6. Special lower coupon short-term instrument for retail investors	No	Yes	No	6. 100% minimum participation threshold set	Yes	Yes	Yes
7. Greater public sector burden relative to private sector bondholders	No	Yes	No				
8. Formal private sector governance arrangement	No	Yes	No				
9. Put option in New 'Special' Bonds for large bondholders	No	Yes	No				

Figure 1. Decision Tree for the Individual Bondholder in the Gulati and Zettelmeyer (2012) Model

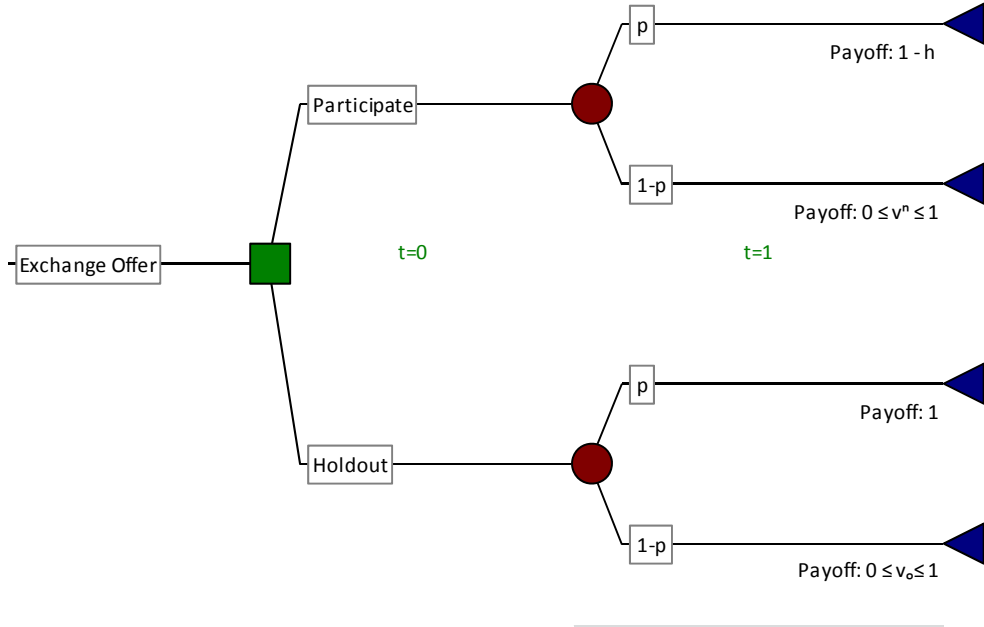
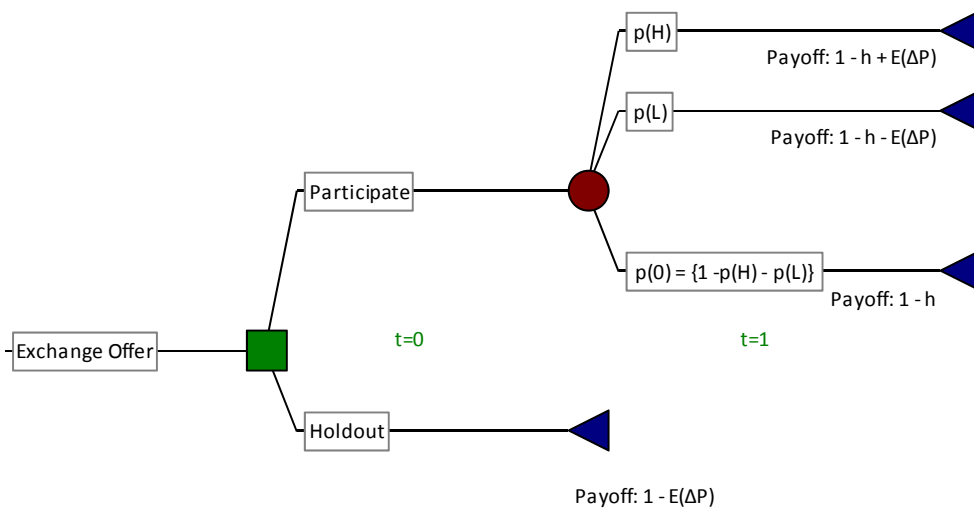


Figure 2. Decision Tree for the Individual Bondholder with Binding Constraint of 100.0 per cent Minimum Participation Rate



Now consider the case wherein the key assumptions of Gulati and Zettelmeyer (2012) are modified to fit the circumstances of the JDX and NDX (see **Figure 2**). First, no holdouts are allowed. Second, sovereign rating may increase, decrease or stay the same post-exchange when all bondholders participate. Given these assumptions: if the bondholder chooses to participate, he receives one of three possible payoffs at time $t=1$, depending on the credit rating received by the sovereign after settlement of the exchange: (1) if the sovereign is upgraded, he receives a payoff of $1-h+E(\Delta P)$ with probability $p(H)$, where $+E(\Delta P)$ is the expected premium on the price on the new bond consistent with the rating upgrade;²⁰ (2) if the sovereign is downgraded, he receives a payoff of $1-h-E(\Delta P)$ with probability $p(L)$, where $-E(\Delta P)$ is the expected decline in the price on the old bond consistent with the rating downgrade;²¹ (3) finally, if the sovereign maintains the same rating after the exchange, the payoff to the bondholder is $1-h$ with probability $p(O)=1-p(H)-p(L)$.²² Alternatively, if the bondholder chooses to holdout he receives a payoff of $1-E(\Delta P)$ with probability $\pi(L)=1$, arising from a definite rating downgrade given the binding commitment that the exchange offer would be withdrawn if the participation rate is below 100.0 per cent and there would be no IMF agreement.

The decision rule for participating in the exchange when accounting for sovereign risk is:

$$p(H)(1 - h + E(\Delta P)) + p(L)(1 - h - E(\Delta P)) + (1 - p(H) - p(L))(1 - h) \geq (1)(1 - E(\Delta P))$$

which reduces to:

$$h \leq (1 + p(h) - p(L))E(\Delta P)$$

So the intuitive result from the decision rule for the bondholder to participate in the exchange is the probability of a rating downgrade must be less than 1 for the bondholder to participate with a haircut above 0. For the debt exchange to be voluntary then the range of values for h must lie in the interval $[0, 2E(\Delta P)]$.²³ That is, the NPV haircut must be below an upper bound of $2\Delta P$ to be consistent with the cooperative solution as presented in Table 2 of Section 3 of this paper. Note, however, that that if the bondholder holds debt which is close to maturity then $E(\Delta P) \approx 0$ which suggests that the bondholder is better off holding out if $h > 0$. Hence, it is clearly critical from a policy perspective to complete negotiations with bondholders on the exchange with a sufficient lead time before their bonds are due to mature. In other words, the closer the old bonds are to maturity is the smaller the acceptable NPV haircut in a voluntary exchange.

Another important policy lesson is that potential fallout from the debt exchanges was effectively mitigated by critical preemptive actions by the Central Bank. The perception of game-changing stability

²⁰ As occurred following the JDX.

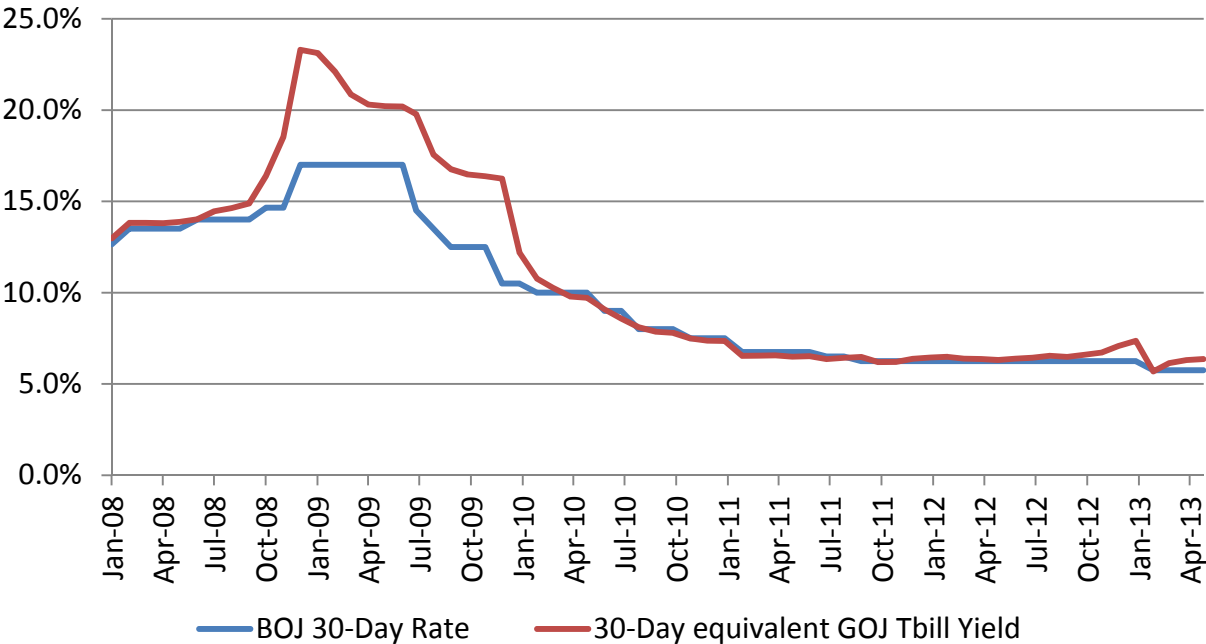
²¹ As occurred following the NDX.

²² For simplicity, this analysis assumed the incremental expected change in bond price is the same for a rating upgrade and downgrade.

²³ Note that if: $p(L) = 1$ then $h = 0$; $p(h) = p(L) = 0.5$ then $h \leq E(\Delta P)$, and; $p(H) = 1$ then $h \leq 2E(\Delta P)$.

in the bond market was considered a major prerequisite to sustainable debt dynamics as well as improved growth prospects by the financial sector and the wider public. Managed by the lowering of signal rates by the Bank during the JDX, market interest rates declined to historic low levels and have remained stable (see **Figure 2**). In fact, the market continued to finance the GOJ at low rates even when the SBA went off track, reflecting the game-changing nature of the JDX. The Bank also signaled that interest rates should be lower after the success of the NDX, underpinned by the signing of a new Fund agreement, which was shadowed in market rates reflecting continued investor buy-in to favourable trajectories for debt and growth.

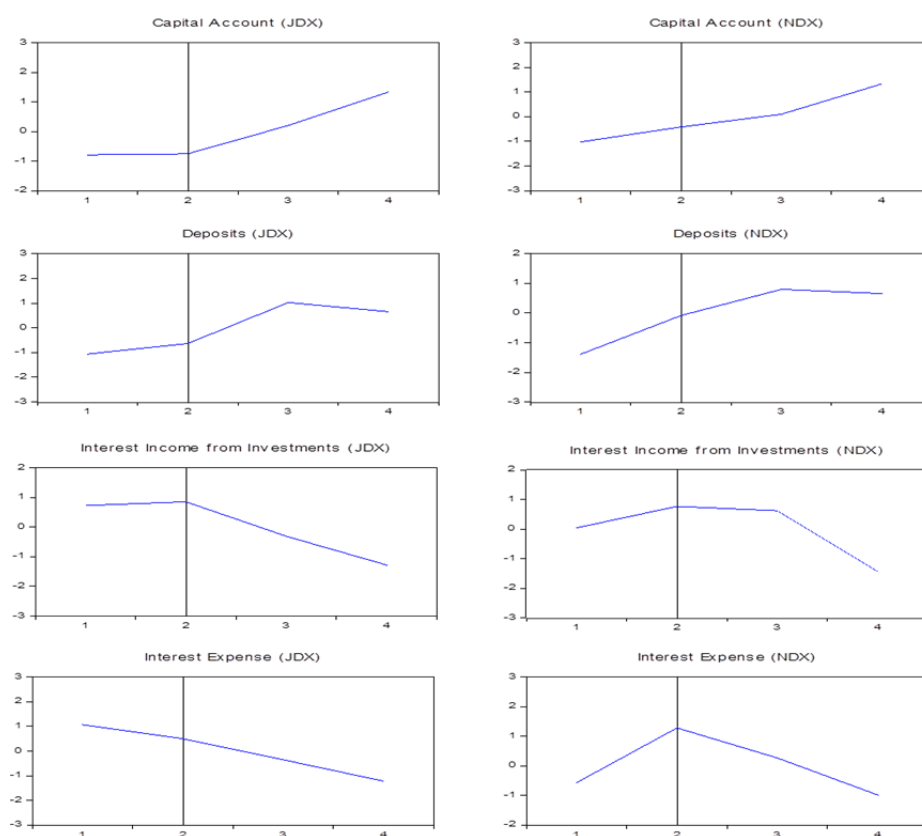
Figure 2. Evolution of BOJ OMO and GOJ Treasury Bill Rates (2008:01 to 2013:04)



Importantly, the lowering of signal rates by the Central Bank also contributed significantly to the favourable trajectories of key financial variables following both debt exchanges instead of the adverse movements simulated in the Bank’s stress tests. As reflected in the normalized commercial banking sector variables in **Figure 3**, the lower interest rates influenced by the Bank’s stance resulted in fair value gains on the New Bonds which countered the capital losses from the transactions.²⁴ Consequently, there were buildups in deposits consistent with positive investor sentiment as opposed to the deposit runs simulated in the stress tests. Also, the decline in market rates dampened the impact of the coupon haircuts on bank profitability as institutions were able to reduce the rates on their largely short-term liabilities. This evidence runs counter to the view that the benefits from the JDX have been ephemeral as posited in Grigorian *et al.* (2012).

²⁴ The post-JDX sovereign rating upgrade to a higher level than pre-JDX also contributed to fair value gains on GOJ bonds.

Figure 3. Evolution of Key Variables for Commercial Banks around the JDX and the NDX²⁵



The Way Forward

Both debt exchanges, underpinned by strong fiscal consolidation, were necessary to reverse the adverse fiscal dynamics and reduce the debt overhang that has plagued Jamaica for the past two decades. These significant efforts to reduce fiscal dominance were aimed at encouraging private sector investment in order to catalyse the underlying conditions for robust economic growth.

The experiences of many of the countries that have undertaken some form of debt restructuring suggest that the transformation to virtuous cycle of sustained macroeconomic improvement hinged strongly on a substantially improved external environment which facilitated an export-led recovery. Russia (1999, 2000) and Ecuador (2000), for example, benefited from the dramatic rise in oil prices following their restructuring. Similarly, Uruguay (2003) and Argentina (2001) had significant positive terms of trade windfalls arising from commodity prices with average growth rates of about 8.0 per cent between 2004 and 2008. Ukraine's post-crisis recovery was primarily driven by a rapid expansion in exports to Russia

²⁵ The x-axes in the graphs depict quarters, where quarter 2 coincides with the debt exchanges.

and China as well as buoyant international liquidity conditions in 1999. However, the global conditions to reinforce a meaningful post-restructuring recovery did not exist at the end of both debt transactions for Jamaica especially given its very narrow export base.

Notwithstanding the absence of a favourable external economic climate, a depreciated but stable real exchange rate is a critical component of Jamaica's economic programme which will increase profitability of the tradable sector. This boost in competitiveness is expected to catalyze strong GDP growth, reduce unemployment and strengthen the current account which should result in a more sustainable reduction in Jamaica's debt-to-GDP. In addition, the continuation of robust fiscal consolidation supported by counter-cyclical fiscal policies will constrain the influence of stronger global demand on appreciating the REER, further supporting declining debt ratios.

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