The Pitfalls of Value Recovery Instruments in Sovereign Debt Restructuring

Theory and Practice

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The Lab is housed at CEPREMAP, a leading French research institute located within the Paris School of Economics, and is supported by the Bill & Melinda Gates Foundation. Its work is directed by the Steering Committee, a group of about fifteen experts and institutions in Africa, Latin America, and Asia. The founding members are individual experts and the following institutions.

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Abstract

This note[1] explores the theoretical appeal and practical challenges of Value Recovery Instruments (VRIs) in the context of sovereign debt restructurings. While VRIs and other state-contingent debt instruments have the potential to align debt repayment with a country's ability to pay, their actual success has been limited in practice. The note traces the history of VRIs from their origins in the 1989 Brady exchanges to their inclusion in more recent debt restructurings. It delves into the rationale behind VRIs, identifies the main challenges associated with their issuance - particularly their asymmetric structure, and discusses three specific cases. The document concludes by taking stock of the ongoing debate about the future of VRIs.

[1] This note is based on a presentation in an online panel on Innovations in Debt Restructuring Deals co-organized by the International Economic Association and the Finance for Development Lab. I would like to thank Ishac Diwan and Dani Rodrik for inviting me to the panel, panel participants, Lee Buchheit, Ishac Diwan, Mitu Gulati, Michel Habib, Martin Kessler, Theo Maret, Diego Rivetti and Xavier de Regloix for comments and suggestions, and Ishac Diwan for asking me to write this note. The usual caveats apply.

Introduction

The following quote is often attributed to Albert Einstein, Richard Feynman, or Yogi Berra, but it is more likely that it was first used by Benjamin Brewster in 1882: "In theory, theory and practice are the same. In practice, they are not." Regardless of its origin, this quote aptly describes the gap between the theoretical appeal and practical challenges of contingent sovereign bonds and Value Recovery Instruments (VRIs). While these financial tools possess several desirable properties in theory, their practical success has been limited, illustrating one of the Sovereign Debt Puzzles highlighted by Bolton et al. (2023).

State-contingent debt instruments are financial tools where repayment terms are linked to a country's economic performance or other specific criteria. This means that debt obligations, including interest and principal payments, are contingent on economic indicators such as GDP, commodity prices, or other predefined metrics. VRIs, a type of state-contingent debt instrument, are typically used in sovereign debt restructurings with the goal of allowing creditors to recover additional value if the debtor country's economic situation improves post-restructuring.

The first sovereign VRIs were issued over 30 years ago during the Brady exchanges. Mexico's 1989 Brady deal included a Value Recovery Right (VRR) that triggered payments if oil prices exceeded a certain threshold (Bretton Woods Committee, 2024). Similar techniques were applied in the debt exchanges of other oil producers, such as Venezuela in 1990 and Nigeria in 1992. For non-commodity producers like Costa Rica in 1989 and Bulgaria in 1994, the restructured debt included warrants linked to GDP growth (Sgard, 2024). VRIs tied to GDP were also part of debt restructurings in Bosnia Herzegovina (1997), Argentina (2005), Greece (2012), and Ukraine (2015). More recent or planned exchanges that include VRIs involve countries such as Suriname, Zambia, and Sri Lanka.

This note provides a brief overview of the rationale behind VRIs (Section 1), highlights the main challenges related to their issuance (Section 2), and discusses the cases of Argentina, Suriname, and Zambia (Section 3). It concludes by suggesting that to prudently experiment with VRIs and determine their true value, countries should offer investors a choice between a plain vanilla bond and a bond with a VRI. The bond with a VRI should only be issued if investors accept a substantial discount on the non-

VRI component compared to the plain vanilla bond. This approach allows for a safer and more controlled exploration of VRIs' benefits while mitigating associated risks.[2]

1. Rationale

When a sovereign debtor needs to restructure its debts—either preemptively or post-default—it needs to work with its advisors and prepare "Indicative Restructuring Scenarios" that specify both the overall amount of debt relief that the country deems necessary to restore debt sustainability and the methods for delivering such debt relief (Buchheit et al. 2019). These scenarios are usually the starting point of the negotiations between the debtor country and the creditors (both commercial and official). The International Monetary Fund (IMF) plays an important role in these negotiations and its support is often required for the conclusion of the deal.

In principle, the same amount of debt relief can be delivered by reducing the principal amount owed or by extending the repayment period at below-market interest rates. While there is evidence that principal haircuts are better for reigniting growth and addressing debt problems (Reinhart and Trebesch, 2016), most debt restructurings involve maturity extensions. This creates a paradoxical situation in which debt restructuring exercises appear to leave money on the table by not maximizing debt relief for a given level of investor loss—or alternatively, by not minimizing investor losses for a given amount of debt relief. This outcome appears to be driven by the debtor's risk aversion (Sturzenegger and Zettelmeyer, 2007) and the preference of both commercial and bilateral creditors for extending maturities.[3] This preference is partly due to accounting considerations (investors who do not mark-to-market are not always required to recognize losses associated with maturity extensions) and also because the potential for future gains from debt relief through principal reduction is often smaller than relief delivered through a maturity extension (Buchheit et al., 2019). As a result, creditors who agree to significant net present value (NPV) reductions often seek compensation through instruments that include clauses allowing them to recover a portion of their losses if the sovereign debtor's financial condition improves in the future.

[2] For the sake of conciseness, I do not survey the literature on VRIs and state-contingent debt exhaustively. However, a recent report by the Bretton Woods Committee (2024) thoroughly discusses the costs and benefits of state-contingent debt instruments and provides a comprehensive list of references for further reading. Buchheit and Makoff (2024) also offer a concise discussion of VRIs and present an innovative proposal for their design.

[3] The exception is when they opt for face value reduction to facilitate net present value cut targets set by discussion on comparability of treatment among different types of creditors.

These factors suggest that VRIs can be particularly useful in two scenarios: (i) when there is substantial uncertainty surrounding the baseline scenario that determines the required NPV reduction, and (ii) when creditors and debtors hold different opinions on the baseline projections or the likelihood of a positive scenario.

In recent cases, disagreements over IMF assumptions have been key drivers in the push to include VRIs in the restructuring process. The IMF plays a crucial role in debt restructuring, often insisting on a minimum haircut as a condition for supporting a restructuring deal. If creditors are unwilling to accept such a haircut, the country finds itself in a challenging position. On the one hand, it needs a substantial haircut to meet IMF requirements, but on the other hand, it also needs to offer something to convince reluctant creditors to agree to the deal. A VRI can serve as that incentive. For instance, in Suriname, creditors disagreed with the IMF's approach of excluding future oil revenues from the macroeconomic framework (the IMF's position is that these revenues should be included only after the final investment decision has been made). Similarly, creditors believed that the exchange rate and growth assumptions for Ghana and Sri Lanka were too pessimistic.[4]

In summary, while VRIs theoretically have the potential to align the interests of creditors and debtors by enabling deeper haircuts compensated by payments tied to the country's ability to pay, there are significant issues with their current design and performance. These issues contribute to the low liquidity and valuation of VRIs. In the next section, I will present a simple example that illustrates the challenges associated with the asymmetric structure of these instruments.

[4] Despite this disagreement, Ghana successfully resisted including a VRI in its debt restructuring. Future research could explore the conditions under which countries are able to resist pressure to include a VRI in their restructuring deals. It has been claimed that Argentina could have avoided issuing the GDP warrant if it had used an Exit Consent in its 2005 restructuring.

2. An example

To explain how VRIs work in practice, let us consider a simple example. Imagine a hypothetical country, Ruritania, that needs to restructure its debt. In an ideal scenario where future capacity to pay could be accurately estimated and all parties fully agreed on this capacity, it would be relatively straightforward (assuming no holdout creditors or free-riding issues) to reach a consensus among creditors on the necessary haircut and the optimal method to implement it—typically the method that minimizes creditors' losses. In such a scenario, a VRI would not be needed because, as discussed in the previous section, VRIs are primarily useful when there is uncertainty or disagreement about the sustainable level of debt.

Now, let us introduce some uncertainty about Ruritania's future capacity to pay, while still assuming that both creditors and debtors agree on the Debt Sustainability Analysis. Suppose the expected capacity to pay at time *t+1* is 100, but there are three possible economic outcomes—high, normal, and low capacity to pay—each with an associated probability, as described in Table 1.

Table 1: Maximum Sustainable Debt

State of the Economy	Maximum Sustainable Debt	Probability
High	110	25%
Normal	100	50%
Low	90	25%

Let us further assume that there are significant costs associated with default, prompting the country to always attempt repayment. However, if a default does occur, the resulting economic damage reduces the country's capacity to pay (Collard et al., 2022). For the purposes of this example, we will assume that a default reduces capacity to pay by 20%. Given these assumptions, the market value of a zero-coupon bond with a face value of 100 is as follows:

$$E(V) = 0.75 \times 100 + 0.25 \times (90 \times 0.8) = 93$$

Instead, the value market value of a contingent zero-coupon bond that pays 110 in the "good" state of the world, 100 in the "normal" state of the world and 90 in the "bad" state of the world is 100:

$$E(V) = 0.25 \times 110 + 0.5 \times 100 + 0.25 \times 90 = 100$$

With the contingent bond, the country avoids default entirely (reducing the probability of default from 25% to zero). Instead, it pays less in unfavorable economic conditions and more in favorable ones. The value of the contingent bond is higher because it eliminates the deadweight loss—the reduction in capacity to pay—that would otherwise result from a default.

Investors clearly favor the contingent bond, and if the debtor country is averse to default, it will also prefer this option. However, even if default is not particularly costly for the country and it prefers the first scenario due to the smaller expected outlay, it is possible to design a contingent bond that leaves both parties at least as well off as they would be with a plain vanilla bond—or potentially better off. Ultimately, the outcome will depend on the bargaining power of the two parties, which is influenced by the cost of default to the country. However, if transaction costs are low and property rights are well-defined, the Coase theorem suggests that the contingent bond is the optimal solution, as it avoids the deadweight losses associated with default (Medema, 2020).

VRIs often provide additional payments during economic upturns without offering downside protection during downturns. This asymmetry makes VRIs appealing to the debtor country in debt restructuring negotiations only if they are accompanied by a deeper haircut than would have been agreed upon without the VRI.

Note that the contingent bond in the example above was fully symmetrical, meaning it paid more in good times and less in bad times. However, the typical VRI is not symmetrical. Unlike a symmetric instrument that balances payments across different economic conditions, VRIs often provide additional payments during economic upturns without offering downside protection during downturns.[5] This asymmetry makes VRIs appealing to the debtor country in debt restructuring negotiations only if they are accompanied by a deeper haircut than would have been agreed upon without the VRI. Buchheit's quote on page 1 suggests that this is rarely the case.

To clarify this concept, let us consider a simple example. Maintaining the previous assumptions on the future state of the economy, imagine four possible VRIs with different baseline payments and additional payments if conditions are favorable. In the first VRI, the country pays a baseline of 90 and an extra 10 if economic conditions are either normal or good. In the second VRI, the country pays a baseline of 90 and an extra 20 if conditions are good. In the third VRI, the country pays a baseline of 100 and an extra 10 if conditions are good. In the fourth VRI, the country pays a baseline of 90 and an extra

[5] Setser (2024) discusses asymmetries in the case of Sri Lanka.

20 if conditions are normal or good. Under the first two VRIs, the probability of default is zero, while under the last two, the probability of default is 25% and 50%, respectively. The different instruments and their values are illustrated in Table 2.

Under the assumption that the country wants to avoid default, the country's ranking is: (i) plain vanilla at 90; (ii) VRI 2; (iii) VRI 1; (iv) plain vanilla at 100; (v) VRI 3; and (vi) VRI 4.[6] The creditors' ranking is instead: (i) VRI 1; (ii) VRI 3; (iii) VRI 2; (iv) plain vanilla at 100; (v) VRI 4 or plain vanilla at 90.

Table 2: Asymmetric VRI

	VRI 1	VRI 2	VRI 3	VRI 4
Baseline	90	90	100	90
Extra payment in normal times (wrt baseline)	10	0	0	20
Extra payment in good times (wrt baseline)	10	20	10	20
Value (Bad Time)	90	90	72	90
Value (Normal Time)	100	90	100	80
Value (Good Time)	100	110	110	110
E (V)	97.5	95	95.5	90
P (default)	0	0	25%	50%

Assuming the starting point of the negotiation is the need to reduce debt to 100, with the initial proposal being a plain vanilla bond with a face value of 100, Table 2 demonstrates that at least two VRIs (VRI 1 and VRI 2) offer advantages over the plain vanilla bond for both the debtor and the creditor. However, both of these VRIs have baseline payments that are set equal to the maximum payment in bad times and significantly below the average capacity to pay. While this specific outcome is based on the simple assumptions outlined above, the conclusion that the baseline payment for an instrument with an attached VRI needs to be lower than the expected value of capacity to pay remains robust across a broader set of assumptions, due to the asymmetric nature of the VRI.

The primary purpose of offering a VRI is to incentivize creditors to accept a proposal that includes a substantial face value haircut. The critical issue, however, is that the haircut associated with a VRI must be larger than the haircut without the VRI.

[6] Note that the country ranks VRI3 and VRI4 last because we are assuming that it wants to avoid default, and these are the options with the highest probability of default. So, I am implicitly assuming that the cost of default for the country is higher than the potential savings in payments associated with these two options.

3. Illustrations

This section provides three examples of the practical application of VRIs in sovereign debt restructuring: the GDP warrant in Argentina's 2005/10 debt restructuring; the VRI linked to oil extraction royalties in Suriname's 2023 debt restructuring; and Zambia's 2024 debt restructuring, which includes a VRI linked to the composite indicator of the Bank-Fund Debt Sustainability Framework, as well as the USD value of exports and fiscal revenues.

Argentina

The story of Argentina's 2001 default and the subsequent restructuring has been recounted many times (for a recent and detailed account, see Makoff, 2024). The critical point relevant to this note is that the restructured bonds included a GDP warrant, which obligated Argentina to make additional payments if actual real GDP exceeded the base case GDP and if the actual real GDP growth rate surpassed the growth rate projected in the base case (see Guzman, 2020, for details).

The key question is whether including the GDP warrant enabled Argentina to secure a deeper haircut on the plain vanilla component of the deal (i.e., the bond without the warrant) compared to what would have been needed to make the debt sustainable again. The transcripts of *Palladian v. The Republic of Argentina* suggest that this was not the case. In the words of former Argentine Finance Secretary Guillermo Nielsen:

> **Q: You say you considered that Argentina needed debt reduction close to 70 per cent. That's a very significant haircut for investment, wasn't it?**
>
> A (Guillermo Nielsen): Yes, it was, yes, a very significant reduction, and I would say more than significant, unprecedented. Because in the financial system, certain things are really the result of historical precedents, and there was no historical precedent of a deep haircut or a haircut as deep as that. So, you know, we were against the wall with this. We had -- our econometric studies showed that we needed a deep haircut, but at the same time, the precedents of previous restructurings were not that deep, so we were in trouble. (p 92)
>
> ....
>
> Yes, but, you know, with such a deep restructuring as we had to inflict, and a haircut as we had to inflict, we had to enter new territories and we had to come up with solutions that were not the traditional solutions of the market, simply because we couldn't afford that. So, the GDP unit was a way of assuring those people that thought that we were able to pay more (p 101)[1]

According to Nielsen, Argentina needed a 70% haircut, but the market would have resisted such a large haircut. Therefore, to make the reduction more acceptable, Argentina used the GDP warrant as an incentive. However, following the logic of the example in Section 2 and assuming that 70% was the midpoint of the estimate of the haircut that would have restored debt sustainability, then with the incentive, the haircut should have been even deeper than 70%.

It is possible that Argentina believed it needed a 70% haircut and bondholders thought that debt sustainability could be restored with a smaller haircut (let us say 60%) and the VRI through the GDP warrant was some sort of reversed insurance provided by the bondholders. However, if this is the case, why were bondholders ready to immediately sell the warrant at such a low price?

The issue is that the counterfactual (i.e., what the haircut would have been without the sweetener) is unknown. However, it is reasonable to assume that, at the time of the exchange, creditors would have been indifferent between a plain vanilla bond and a GDP-indexed bond with the same market value. In turn, the market value of the GDP-indexed bond can be decomposed into the market value of a plain vanilla bond plus the market value of the GDP warrant.[7] Therefore, the market value of the GDP warrant at the time of the exchange should provide a good estimate of the additional "bad state of the world" debt relief brought about by the inclusion of the GDP warrant.[8]

Available estimates suggest that, at issuance, the overall market value of the warrant was 10% of the swapped amount (Guzman, 2020). Based on that market value, the early 2005 exchange had a market value of approximately $19 billion (resulting from a 70% haircut applied to the exchange amount of $62.3 billion), and the April 2010 exchange had a market value of approximately $4 billion (resulting from a 70% haircut applied to the exchange amount of $13.2 billion). The total market value of the warrant was around $2.3 billion. Considering the face value of the debt exchanged ($76 billion), the haircut on a plain vanilla bond would have been only 3 percentage points lower than the haircut on the bond issued with the GDP warrant. While this difference is not negligible, it is also not substantial. According to Guzman (2016), Argentina made nearly $10 billion in payments related to the GDP warrant from 2005 to 2011. Given this high ex-post cost, offering a GDP warrant proved to be a risky and expensive strategy.

[7] Note that the market value of the GDP warrant depends on both expectations about the future state of the economy and on the belief that the country cannot manipulate the index which may trigger payments to holders of the GDP warrant. Liquidity can also play a role in determining the value of the GDP warrant.
[8] This is a "bad state of the world debt relief" because this is when the warrant does not pay and thus only the plain vanilla bond matters.

Suriname

In the summer of 2020, Suriname was unable to meet its external debt obligations and defaulted. At that time, the total amount of external public and publicly guaranteed debt was around $2 billion. This included a $125 million Eurobond that was due in 2023 with a 9.875% coupon, and a $550 million Eurobond due in 2029 with a 9.25% coupon. In May 2023, Suriname reached an agreement with bondholders for a bond exchange, but this was contingent on reaching a Staff-Level Agreement with the IMF. The agreement with the bondholders was finalized in November 2023 and achieved a pre-CAC[9] participation rate of over 96 percent and a post-CAC participation rate of 100 percent (IMF).

The agreement involved replacing the two old bonds with a new bond totaling $650 million, along with an additional $10 million to cover fees and expenses of the bondholder committee. Interest payments commenced in 2024, featuring a 4.95 percent cash coupon and a 3 percent capitalized coupon until January 2026, after which point the coupon rate will rise to 7.95 percent. The bonds will be paid off in 14 semiannual installments starting in 2027, with each installment equaling 1/14th of the outstanding principal. The bond also includes a VRI contingent on new revenue streams from an oil development project currently under appraisal (Block 58). After earmarking $100 million for the government, the annual allocation to the VRI is capped at 30% of the royalty revenues from the oil project and to a total amount of $787 million.[10] The initial prospect also included a call option allowing the government to prepay the instrument without penalty or premium, and the requirement that the entirety of Suriname's royalty payments from Block 58 be deposited in an offshore payment account. If Suriname does not set up the escrow account, pay the royalties, or if the country fails to deliver on other contractual obligations, investors can exercise a put option and sell the VRI back to Suriname using funds from this offshore account.

Maret (2023) pointed out that delays in reaching the deal and significant capitalized past-due interest led to a debt reduction much lower than originally envisioned by the IMF. Specifically, IMF estimates suggest that the deal lead to a Net Present Value (NPV) reduction for external commercial creditors of around 21% at a 5% discount rate and 40% at a 10% discount rate (IMF, 2023a). This is significantly lower than what the IMF expected in 2022 when the baseline scenario envisioned a NPV reduction for external commercial creditors ranging from 45% at a 5% discount rate to 58% at a 10% discount rate (IMF, 2022).

[9] Collective Action Clauses (CAC)
[10] This large amount and the high nominal interest rate will create incentives for the government to buyback the VRI. This action will lead to fiscal savings but will also result int a drain of reserves.

The calculation of the haircut assumes that the VRI does not pay out—if it does, creditors can receive up to $787 million, which would result in a haircut of zero.

Returning to our example, early IMF (2022) estimates indicated that restoring debt sustainability would require a haircut of 45% (at a 5% discount rate). Therefore, a restructuring that included a VRI should have resulted in a pre-VRI haircut greater than 45%. However, the actual haircut ended up being significantly smaller, around 15% at a 5% discount rate, suggesting that Suriname did not gain any additional benefit from attaching a VRI to the restructured bonds.[11] It appears that bondholders, who held bonds with very high interest rates (reflecting their high ex-ante default risk), were able to secure a favorable deal. Maret (2023) suggests that bondholders had strong bargaining power because a small group of five investors held 75% of the outstanding debt. Moreover, these bondholders were in no rush to expedite negotiations because they were accruing past due interest at rates well above any plausible exit yield. Suriname's urgency to finalize the deal quickly—to avoid the continued accumulation of high-interest past due interest and to attract the FDI necessary for future oil exploration—contributed to the reduced haircut.

This favorable treatment might raise issues for comparability of treatment with bilateral debt which also include contingencies related to the macro framework and oil revenues.[12] A more general issue is that, so far, there is no systematic approach for incorporating VRIs in comparability of treatment calculations.[13]

[11] The 2023 IMF Review (IMF 2023b) incorporated significantly more favorable macroeconomic assumptions compared to the 2022 Review. The Review did not provide estimates for the NPV reduction necessary to restore sustainability, but concluded that the restructuring scenario agreed upon with bilateral and commercial creditors would be sufficient to achieve this goal. However, it also cautioned that "even after restructuring, public debt would remain high (above 100 percent of GDP) until 2024 and highly vulnerable to macro-fiscal shocks" (IMF 2023b, p. 46). It appears that the VRI was deemed essential by the parties to unlock the negotiations.

[12] See https://x.com/TheoMaret/status/1744706045857935367 and https://clubdeparis.org/en/traitements/suriname-22-06-2022/en .

[13] VRIs have either been (i) excluded from the calculations and managed through non-financial provisions, such as requiring bilateral creditors to adjust their treatment retrospectively if a bondholders' trigger event occurs (as seen in Suriname), or (ii) considered comparable despite differing trigger events (as in Zambia). In ongoing discussions in Ghana and Sri Lanka, there is also consideration of assigning probabilities to potential upward or downward VRI scenarios. For a discussion of comparability of treatment see Rivetti (2023).

Zambia

In November 2020, Zambia defaulted on its external debt and subsequently requested debt treatment under the G20 Common Framework in February 2021 (for details see Kessler, 2024). By the end of 2022, Zambia's foreign currency external debt stood at $18.3 billion (IMF 2023b). This included $6.7 billion owed to commercial creditors, $3.6 billion to multilateral lenders, and $6.3 billion to bilateral creditors (of which $4.2 billion was owed to China). The debt owed to commercial creditors was made up of $3.5 billion in three Eurobonds ($3 billion face value plus PDI) and $3.2 billion to commercial banks (with about $2 billion owed to a Chinese bank).[14] Additionally, non-residents held $2.6 billion in domestic currency bonds.

Several factors make Zambia's debt restructuring particularly noteworthy. These include its role as a test case for the G20 Common Framework and the significance of domestically issued debt held by external creditors. This note focuses on the VRI embedded in the restructuring.

> One interesting feature of the Zambian restructuring process is that the VRI was first embedded in the Memorandum of Understanding with the Official Creditors Committee (OCC) signed in June 2022: official creditors represented by the G20 Common Framework OCC have reached an agreement on a debt treatment for Zambia that is in line with the financing assurances provided in June 2022, agreement that has been embedded in a Memorandum of Understanding that was signed by all parties. This agreement entails a fully quantified two-stage approach that includes a state contingent treatment with a trigger linked to Zambia's debt carrying capacity (DCC). In the base case that is consistent with Zambia remaining assessed as having a weak DCC, official creditors will significantly lengthen the maturity of their claims and reduce their interest costs consistent with the parameters of the ECF-arrangement. The state-contingent clause will be evaluated at end-2025. If, at this stage, the assessment of Zambia's economic performance and policy making warrants an upgrade to a medium DCC, the upside treatment will be triggered and there will be some acceleration of principal payments and higher interest payments to official creditors. This treatment will remain anchored in the LIC-DSF and meet the corresponding DSA thresholds at medium DCC, i.e., the PV of external debt-to-exports at "substantial space to absorb shocks" threshold at 108 percent by 2027 and maintaining the external debt service-to-revenue ratio at or below the 18 percent threshold over 2026-31. (IMF 2024, p. 10).

Zambia reached an initial agreement in principle with holders of Eurobonds in October 2023 and another one in November 2023. However, these agreements were not met with enthusiasm by the IMF and official creditors (Maret, 2023b) and were eventually rejected by these groups (Maret, 2024). A third agreement, reached in March 2024, was

[14] The first bond was a ten-year bond issued in 2012 with a face value of $750 million and a coupon of 5.375%, the second was a ten-year bond issued in 2014 with a face value of $1 billion and coupon 8.5%, and the third was a bond with an average maturity of 11 years issued in 2014 (with three principal payments over 2025-27) with a face value of $1.25 billion and a 8.97% coupon (see Table 1 in Kessler 2024).

better received by official creditors.[15] At that time, the value of the Eurobonds was $3.89 billion ($3 billion face value plus $890 million PDI). Possibly for comparability of treatment with the official sector, the exchange also included a VRI. Specifically, the agreement envisions the issuance of a fixed income instrument (Bond A) with a face value of $1.7 billion maturing in 2033 and a contingent instrument (Bond B) with a face value of $1.35 billion.

The contingent bond is initially designed as a zero-coupon bond due in three equal $450 million installments over 2051-2053. However, its financial features "will be improved through an accelerated payment schedule and higher interest rates" under an "Upside Case" linked to an improvement in the IMF's assessment of Zambia's debt-carrying capacity or an improvement over an "observation period" that goes from January 2026 to December 2028. Specifically, the Upside Case is triggered irrevocably if one of the following two conditions is met:[16]

- Zambia's Composite Indicator of the Bank-Fund Debt Sustainability Framework (IMF, 2018) reaches or surpasses a score of 2.69 for two consecutive semi-annual reviews leading to an improvement of Zambia's debt carrying capacity from "Weak" to "Medium".
- The 3-year rolling average of the USD value of exports and the USD equivalent of fiscal revenues (before taking into consideration grants) exceeds the IMF's projections in the Second Review of the IMF's Extended Credit Facility Arrangement (IMF, 2023).

These assessments will be made at each semiannual payment date of Bond A, and the enhanced terms will be applicable from the date of the trigger and payable from the next payment date. According to IMF (2024b) estimates, Zambia's debt indicators in a scenario where the enhancement is not triggered (in terms of the present value of debt-to-GDP and debt-to-exports and the ratio between debt service and each of exports and revenues; these are the red lines in Figure 1) outweigh Zambia's debt indicators in an optimistic baseline scenario in which the enhancement is triggered.[17]

While the VRI has appealing risk-sharing properties—allowing Zambia to pay more when its economic conditions improve—the fact that debt indicators tend to deteriorate under the upside scenario

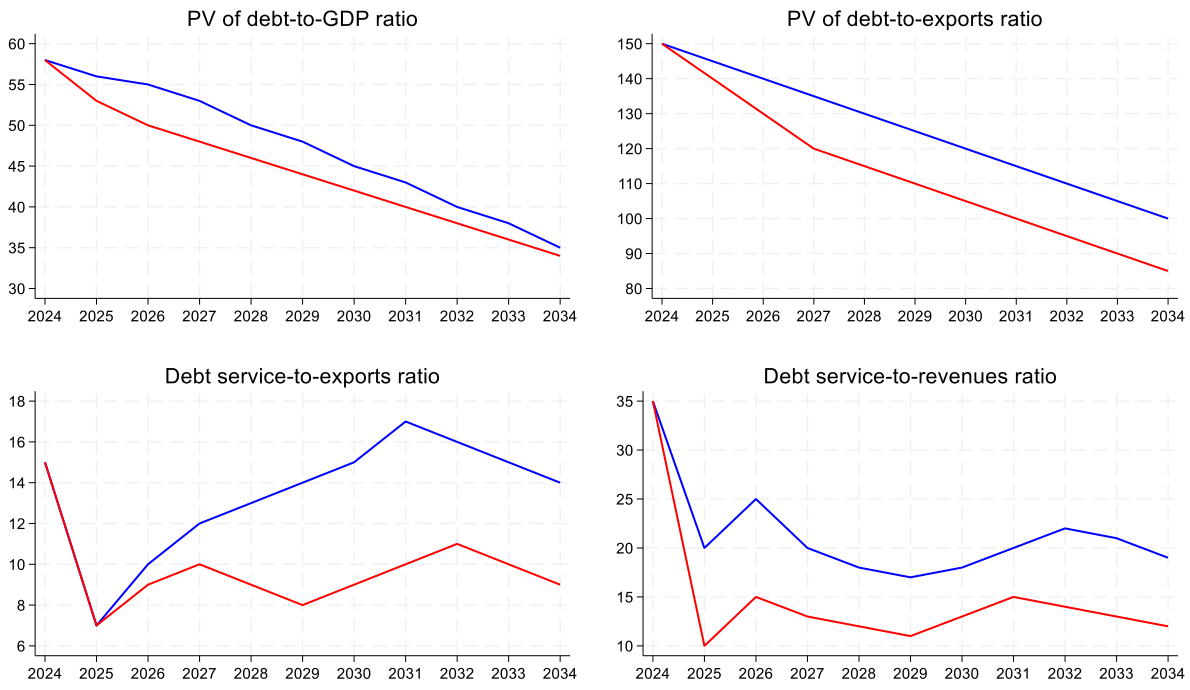
[15] The agreement is available at https://www.londonstockexchange.com/news-article/32BT/statement-re-restructuring-of-eurobonds/16393988
[16] See https://www.londonstockexchange.com/news-article/32BT/statement-re-restructuring-of-eurobonds/16393988
[17] Note that this discussion is based on current available information. The 2024 updated DSA will incorporate revised macro-fiscal conditions and trends for the debt sustainability indicators.

suggests that most of the benefits in this scenario accrue to bondholders. Paradoxically, Zambia could end up worse off in terms of debt sustainability indicators in the upside case.

The situation could be even more problematic considering Zambia is currently experiencing an extreme drought, which may have long-term implications for economic activity. However, the IMF is treating this as a temporary shock and not factoring its effects into long-term forecasts. Since the composite indicator that can trigger Zambia's VRI is partially based on these forecasts, there is a risk that the VRI could be triggered even as economic activity is collapsing. A key lesson from the Zambian case is that VRIs should include protective clauses to prevent extra payments from being triggered during times when the country is facing significant economic challenges.

A key lesson from the Zambian case is that VRIs should include protective clauses to prevent extra payments from being triggered during times when the country is facing significant economic challenges.

Figure 1: Indicators of PPG External Debt, 2024–2034



Source: Figures 3 and 4 in IMF (2024b) The red lines are based on the baseline estimates of Figure 3 and the blue line are based on the baselines estimates of the upside treatment in Figure 4.

4. Taking Stock

While VRIs and contingent debt instruments have desirable theoretical properties, their practical application has often fallen short.

Six reasons why VRIs have so far proven to be problematic

1. Market participants tend to undervalue VRIs, leading debtor countries to offer a valuable option without receiving adequate debt relief in return.
2. It is challenging to find observable measures of a country's ability to pay. As a result, VRIs are sometimes triggered when the country is facing economic difficulties; most VRIs do not provide protection against this scenario.
3. The presence of VRIs can create perverse incentives for the reporting of macroeconomic indicators.[1]
4. VRIs could potentially be overly generous due to either the strong negotiating power of creditors or the influence of short-sighted politicians eager to expedite the restructuring process, who may not fully consider future payment burdens that will fall on their successors.
5. Creditors, even when they hold similar instruments, are heterogeneous in their expectations and preferences for debt instruments. A menu approach could help address this heterogeneity and provide a better measure of how much the market truly values the VRI.
6. The presence of different types of creditors (commercial, bilateral, and multilateral), each holding different types of instruments (bonds and loans), complicates the comparability of treatment and the sharing of upside potential among stakeholders.

So, what can be done? Given that VRIs have the potential to significantly improve the outcomes of sovereign debt restructurings (Cohen et al., 2020; Bretton Woods Committee, 2024), we should not abandon them due to past failures. After all, every attempt at building heavier-than-air flying machines failed until the Wright brothers succeeded in December 1903. However, we should proceed cautiously: Orville and Wilbur tested the Wright Flyer on a sand dune in Kitty Hawk, not by leaping from the Grand Canyon.

The Bretton Woods Committee (2024) and Buchheit and Makoff (2024) offer valuable suggestions for improving VRIs. Specifically, the Bretton Woods Committee (2024) highlights the importance of improving valuation and liquidity through standardized documentation, payment mechanisms that accurately reflect the debtor's payment capacity, structures that allow VRIs to be included in market indices, and increased collaboration between the public and private sectors.

Buchheit and Makoff (2024) propose a more radical reform in the design of VRIs. They suggest that the most effective way for a debtor to benefit from an upside scenario is by triggering partial prepayment of the restructured debt.[18] This approach can create a win-win situation because it enhances the market value of creditors' holdings while simultaneously reducing the outstanding stock of debt.[19]

These are valuable proposals, but they do not address a critical issue: How much additional debt relief does a country actually obtain by agreeing to a VRI? Additionally, how can countries protect themselves from the excessive bargaining power of creditors?

A prudent approach to experimenting with VRIs and determining their true value is to offer investors the choice between a plain vanilla bond and a bond with an attached VRI. The country should then agree to issue a bond with a VRI only if investors are willing to accept a substantial discount on the non-VRI component of the bond-cum-VRI compared to the plain vanilla bond. This strategy allows for a safer and more controlled exploration of VRIs' potential benefits while mitigating the risks associated with their implementation.

The status quo creates significant uncertainty, making it challenging to assess comparability. Therefore, it would be beneficial to develop guidelines on the structure of VRIs. A set of straightforward principles could help bring clarity and order and could be incorporated into debt sustainability analysis criteria. These guidelines should be practical, directly operational, and applicable to all types of creditors, not just bondholders, ensuring consistency and fairness across the board.

[18] This suggests that VRIs should not be detachable from the underlying bonds. Stumpf (2021) also suggests that valuation is further complicated by VRI that can trade separately and Bretton Woods Committee (2024) indicates that VRIs that trade separately from the underlying asset cannot be included in indexes and thus suffer in terms of liquidity.

[19] One possible issue with this strategy is that creditors will benefit from a prepayment only if debt is trading below par. Thus, creditors will benefit more if the debtor country is just above the threshold that triggers the prepayment and less if the country greatly outperforms the baseline scenario (because such a performance will lead to an increase in the valuation of the outstanding bonds). This issue could be potentially addressed (at the cost of complexity) by including multiple triggers that lead to different prepayment shares.

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