

GLOBAL CHINA INITIATIVE



Ying Qian is a freelance consultant and researcher. Prior to his retirement, he was with the Asian Development Bank and worked in countries and subregions of Central Asia, South Asia, Southeast and East Asia. As the Director of Public Management, Financial Sector and Regional Cooperation Division, he and his colleagues implemented programs and projects in areas of public finance, financial market development, trade and investment. Ying also worked at the World Bank and the American Express Co. He has a Ph.D. in Economics from Duke University and an undergraduate degree in Computer Science from Renmin University, China.

Brady Bonds and the Potential for Debt Restructuring in the Post-Pandemic Era

YING QIAN¹

ABSTRACT

Brady-bond-like transactions may be considered for today's distressed debt restructuring in the post-COVID era. The general principles applied in 1990s for Brady bonds, such as granting debt relief in exchange for greater assurance of collectability, linking debt relief to economic policy reforms and making resulting debt highly tradable are still valid today. The recent additional allocation of Special Drawing Rights and expanded lending and guarantee capabilities of the IMF/World Bank are all favorable factors. State contingent debt instruments such as commodity-linked bonds, which serves the needs of both debtors and creditors well thanks to their respective natural hedge positions, can also be introduced under the auspice of the Brady-bond-like restructuring. Lastly, tapping into the available funding for green and climate change finance has great potential, but a lot more work such as policy and institutional development and project pipeline preparation, will be needed to attract investors.

¹ Ying Qian, a freelance researcher, is formerly with the Asian Development Bank and the World Bank. The Author wishes to thank Dr. Yan Wang, Senior Research Fellow at the Boston University Global Development Policy Center for conceptualization and the review for this paper, and the Boston University Global Development Policy Center for sponsoring the preparation of this paper.

INTRODUCTION

The COVID-19 pandemic has led to unprecedented global economic and human crises and many developing countries are facing serious challenges in continuing their sovereign debt servicing. Half of all low-income countries are either already in debt distress or at high risk (Kharas, 2021). Creditors and international communities have been working hard in contemplating various means for debt restructuring and relieve. The Group of 20 (G20) countries established the Debt Service Suspension Initiative (DSSI) to help countries concentrate their efforts and resources on fighting the pandemic. 73 countries are eligible for a temporary suspension of debt-service payments owed to their official bilateral creditors (Annex Table, The World Bank, 2021). The G20 has also called on private creditors to participate in the initiative on comparable terms. The suspension period, originally set to end on December 31, 2020, has been extended through December 2021. More work is being conducted on reforming the IMF's Debt Sustainability Framework (DSF). Additional proposals include debt-forgiveness and "haircuts", asset-based refinance (Gallagher and Wang, 2020), green finance in exchange for debt restructuring and the Brady-bond-like debt restructuring and the use of state contingent debt instruments (SCDI) (Cohen, 2020).

The Brady bond transactions were widely used in distressed debt resolution for developing countries in the 1990s and proved to be successful. The principles and merits of the Brady type restructurings are still valid for today's market. The expected additional allocation of IMF's Special Drawing Rights (SDRs) and expanded lending capacities of IMF/World Bank and other development partners can potentially be used for a new round of Brady bond-like transactions for today's distressed debt resolution.

This paper examines the Brady type debt restructurings of the past, discusses the pros and cons and proposes it be used with modifications in transaction structure to meet both debtor and creditors' requirements in the post-COVID era. Secondly, SCDIs such as the commodity linked bonds (CLBs), can also be introduced as they could take advantage of debtors and creditors' natural hedge positions, lessen the funding requirement for credit enhancement and make the bonds more tradable. Thirdly, the global focus on climate change also offers opportunities for distressed debt resolution through green and climate finance. Billions of dollars of financial resources available globally for climate projects are actively seeking opportunities in green/climate related investment opportunities in developing countries. However, rigorous policy and institutional development work will be needed, and the paper discusses the approaches of utilizing these funds in debt restructuring in the post-pandemic era.

HISTORY OF THE BRADY BOND

Transaction Structure, Role of Each Player and Value-Added

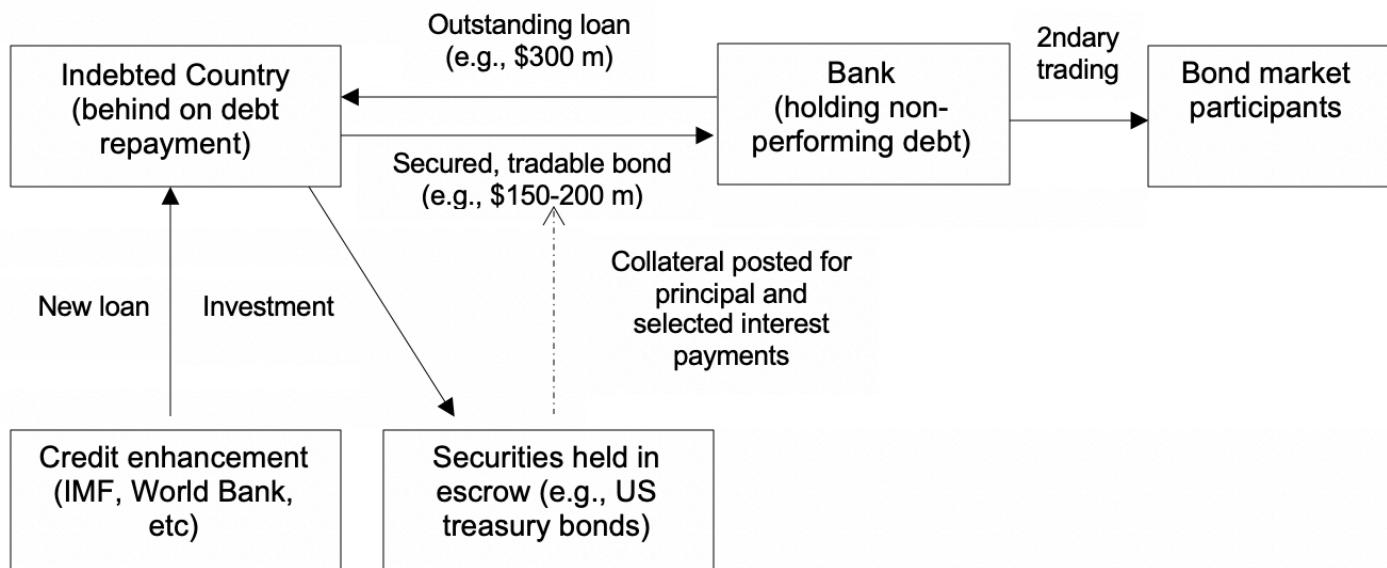
A Brady bond refers to a transaction structure used in the 1980s-1990s as part of a plan to restructure distressed debts in developing countries. The debt crisis emerged first in Latin America, when countries were confronted by high interest rates and low commodity prices. The bonds were named after Nicholas Brady, President George H.W. Bush's Secretary of the Treasury (Chen, 2019).

The basic principles of the Brady bond transactions were simple, namely, (i) bank creditors would grant debt relief in exchange for greater assurance of collectability in the form of principal and interest collaterals; (ii) debt relief needed to be linked to some assurance of economic policy reforms and (iii) the resulting debt should be highly tradable, to allow creditors to diversify risk more widely

throughout the financial and investment community (Trade Association for the Emerging Markets, 2021).

A typical Brady-bond-transaction structure is shown below in Chart 1. Assisted by the International Monetary Fund (IMF) and/or the World Bank, a debtor country initiates a negotiation with creditor banks for restructuring its distressed debt(s) to a secured and tradable bond, usually after a haircut. The principal amount was usually collateralized by specially issued US Treasury 30-year zero-coupon bonds, purchased by the debtor country using proceeds from loans given by the IMF or the World Bank, and the country's own foreign currency reserves. There was also a rolling interest payment guarantee, covering 12–24 months of interest payments using securities of at least double-A-rated credit quality.

Chart 1: A Typical Brady Bond Transaction Structure



Source: Josiah Johnston, Wikimedia Commons, 26 October 2008, with modifications by the author.

Of course, detailed assessments and preparation were needed for the debtor country, creditors and IMF/World before coming to the conclusion that a Brady bond transaction was the best option, together with necessary policy reform measures to regain economic stability. Those would include the IMF Article IV consultation and special sector assessments, etc. However, it wasn't until the later part of the 1990s that those processes were made more transparent and streamlined.

The main type of Brady bond is the collateralized fixed-rate par bond. Par bonds was an exchange of loans for bonds of equal face amount, with a fixed, below-market rate of interest, allowing for long-term debt service reduction and protection from fluctuations in interest rates (Choudhry 2001). There was also collateralized floating-rate discount bonds, which was an exchange of loans for a lesser amount of face value in bonds (generally a 30-50 percent discount), allowing for immediate debt reduction, with a market-based floating rate of interest. Both Par and Discount Bonds were 25- or 30-year collateralized bonds (Trade Association for Emerging Markets. 2021).

Good degrees of flexibilities were given to countries while negotiating with their commercial bank creditors. Some countries issued uncollateralized bonds with shorter tenors (e.g., "Floating Rate

Bonds" and "Front Loaded Interest Reduction Bonds"). Some countries issued bonds in exchange for unpaid interest on defaulted loans (e.g., "Past Due Interest Bonds" or "Interest Arrears Bonds").

Specific roles, advantages and benefits for and of each player were the following:

- The indebted country benefits from having their principal, interest payments and interest arrears reduced. The indebted country government played a key role in the whole transaction. To avail the use of Brady bonds, it needed to consider various factors, such as negative market re-actions when inviting the IMF team to conduct the debt sustainability assessment; feasibility of carrying out reform measures while working with IMF/World Bank and/or other multilateral financial organizations on structural adjustment or policy reform loans and programs; and possibility of success while negotiating with creditors collectively on debt restructuring agreements. The indebted country also needed to examine the net effect of Brady bond restructuring on balance of payment (BOP) and liquidity situations to ensure macro-economic stability.
- The creditor would need to consider various restructuring options according to its own financial management strategy and practices. The Brady bond initiative was obviously in favor of a quicker resolution and diversification of exposures against the alternative scenario of lesser write-off but also less options for future diversification.
- For bond investors, Brady bonds were attractive, as they could invest in emerging market debts with improved liquidity and transparency with good quality investment guarantees. Because Brady bonds were denominated in US dollars, they allowed investors to invest in sovereign debts without the currency mismatch. The Brady market was characterized by high yields and liquidity levels ranging from very liquid to illiquid. Many Brady bonds were large size issues and were traded by investors taking a view on the country risk, the yield spread to US Treasury or the volatility level.
- The IMF and the World Bank played a crucial role. On the transaction level, their sovereign loans given to the indebted countries allowed the latter to use the loan proceeds to purchase US treasury bonds and post them as collaterals, thus enhancing the credit worthiness and tradability of Brady bonds they issued. On the policy level, accompanied by structure adjustment and policy reform loans and programs, IMF and World Bank would request the borrowing countries to strategize and implement a series of reform measures aimed at strengthening debt sustainability, improving prudence of the fiscal system, liberalizing and developing financial and capital markets, privatizing state-owned enterprises and establishing social safety nets, etc. On the international level, the IMF and World Bank's involvement provided a forum for creditor-debtor negotiations and incentivized better creditor coordination. The IMF and World Bank financing support was also one of least-cost options for credit enhancement for Brady bonds, as the loan extends to any country within the IMF/World Bank system, carrying the same interest rate of sovereign loans to any member, at e.g., LIBOR + contractual spread + maturity premium without direct reference to the borrowing country's actual debt rating on the international market.²

As a result, the use of Brady bonds changed the landscape of sovereign finance in two fundamental ways. First, sovereign bonds, held by a diverse set of thousands of creditors, became the preferred financing instrument for countries, replacing much of sovereign bank loans. Second, the official sector assumed a central role in sovereign debt restructuring through a set of common practices (Weeks-Brown, 2019). Following the 1989 introduction of Brady bond transactions, a large share of

² In fact, the maturity premium is lower for poor and lower rated member countries.

commercial banks' distressed debts was converted into the bonds, often containing the third-party guarantees. Such conversion greatly improved the liquidity and efficiency of the developing country bond market, as issuing volume increased from \$1.5 billion in 1985 to more than \$200 billion in 1992. The efficiency of the market increased, as measured by bid/ask spreads, fell by more than one-half in a few years (Claessens, 1996).

Evaluation of the Records

Hundreds of billions of dollars of Brady bonds were issued over a decade by dozens of developing countries. Mexico was the first country to restructure its debt under the Brady Plan. Other countries soon followed, including Argentina, Brazil, Bulgaria, Costa Rica, Cote d'Ivoire, the Dominican Republic, Ecuador, Jordan, Nigeria, Panama, Peru, the Philippines, Poland, Russia, Uruguay, Venezuela and Vietnam (Chen, 2019). Table 1 below presents an illustrative set of Brady bond terms. It is common that both Par and Discount bonds were issued by a country at the same time and the coupon tended to have uniform rates for fixed or floating interest rates, as these were collateralized using US treasury bonds.

Table 1: Selected Brady Bond Issues

Country	Bond type	Issue Date	Maturity Date	Issue Amount (USD millions)	Coupon type
Brazil	PAR	15/04/1994	15/04/2024	10,489	Fixed (4 to 6%)
Brazil	DISCOUNT	15/04/1994	15/04/2024	7,286	Libor + 0.8125%
Poland	PAR	27/10/1994	27/10/2024	930	Fixed (3 to 5%)
Poland	DISCOUNT	27/10/1994	27/10/2024	2,970	Libor + 0.8125%
Mexico	PAR	28/03/1990	31/12/2019	17,875	Fixed (6.25%)
Mexico	DISCOUNT	28/03/1990	31/12/2019	11,507	Libor + 0.8125%
Argentina	PAR	30/09/1993	31/03/2023	12,489	Fixed (4 to 6%)
Argentina	DISCOUNT	31/03/1993	31/03/2023	4,136	Libor + 0.8125%
Philippines	PAR	01/12/1992	01/06/2018	1,894	Fixed (4.25 to 6.25%)
Bulgaria	DISCOUNT	28/07/1994	28/07/2024	1,850	Libor + 0.8125%

Source: Gonçalves, 2003.

The Brady Plan did facilitate a return from the rescheduling phase during the debt crisis to a more normalized phase with market-oriented relationships between developing countries and their creditors, despite the fact that in 1999, Ecuador defaulted on its Brady bonds.

Many of the innovations introduced, such as call options embedded in the bonds, "stepped" coupons, pars and discounts etc., were retained in the later sovereign restructurings, although the Brady bond process ended in the 1990s. In 2003, Mexico became the first country to retire its Brady debt. The Philippines bought back all its Brady bonds in 2007, joining Colombia, Brazil, Venezuela and Mexico as countries that have retired their bonds. Table 2 below shows illustrative examples of the terms for three kinds of Brady bonds. Two non-guaranteed bonds demonstrated a higher yield and higher spread according to the credit rating. The guaranteed bonds managed to lower the sovereign spread by half.

Table 2: Illustrative Brady Bond Terms

Type	Argentina Par Bond Par Bond (issued at face value, below-market fixed rate)	Brazil C Bond (aka. capitalization bond)	Bulgaria IAB IAB (aka. interest arrears bond)
Maturity Date	March 2023	April 2014	July 2011
Coupon	(step-up): 4 percent through 1994, 4.25 percent in 1995, 5 percent in 1996, additions of 0.25 percent through 1999, fixed at 6 percent thereafter, semi-annual payments	8 percent, semi-annual payments	6-month LIBOR + 81.25 BPs, grace period ends 2001; semi-annual payments
Guarantees	principal (collateralized by US zeros) plus 6 percent rolling interest guarantee	none	none
Other Features	callable at par		sinking fund
Rating	Baa3, BB	B1, BB-	B2
Blended ¹ / Stripped Yield ²	8.132/10.433	10.277/10.277	10.493/10.493
Sovereign Spread	220	450	476

¹ The internal rate of return of the bond instrument.

² A measure of the non-collateralized, independent return of a bond or warrant after all the monetary incentives and features have been removed.

Source: New York University, "Debt Instruments- Emerging Markets," Backus/December 2, 1998.

A Case Study: Mexico

Mexico's Brady bonds were initiated even earlier than the Brady bond itself. President Carlos Salinas of Mexico, in his inauguration speech on December 1, 1988, noted to external creditors that while wishing to avoid confrontation, Mexico expected the creditors to contribute to a medium-term solution of its debt problem. At the same time, the IMF and the World Bank took a more flexible approach to debt management in their annual meetings in Berlin that year. The Brady plan came to shape when Brady, then Secretary of the Treasury in the US, spoke at the US Department of State on March 10, 1989, effectively legitimized the concept of debt relief. The policy reforms undertaken by Mexico in areas of trade liberalization, foreign investment, taxation and financial market liberalization (Wijnbergen, 1991).

Mexican Brady bonds were one of the most actively traded and most liquid of Brady bonds. The two Mexican bonds listed in Table 1 above issued in March 1990 were converted from approximately \$40 billion of commercial bank loans - a par bond with a principal equal to its original face value of loans but having a low, fixed interest rate of 6.25 percent, and a discount bond with a principal discounted to equal to 65 percent of its original face value and having a floating interest rate of LIBOR plus 13/16. In addition, both bonds included a value recovery clause, e.g., an "oil price recapture" clause that gave creditors a share in Mexico's oil export revenue if oil prices increased by a certain percentage in 1997 and the years after. Both bonds have an original maturity of 30 years and their principals fully collateralized by the 30-year US Treasury zero coupon bonds. The bonds came further with the credit enhancement of a rolling guarantee covering three semi-annual (18 months) interest payments, collateralized by an escrow account at the Federal Reserve Bank of New York. Mexico's Brady bonds were rated by Moody at Ba3 and were traded in a very liquid and efficient market with bid/ask spreads around 25 cents, or 0.4 percent of the price.

The increase of new bonds issued by developing countries and the variation in their terms makes the pricing of bonds an important issue. Research demonstrated that the estimate of a country's

repayment capacity, taking into account the values of interest and principal guarantees of the Brady bonds, can be applied to the price of other (sovereign) bonds. References from pricing and active trading of Brady bonds can provide a useful benchmark for pricing of other bonds and thus support the development of a bond market for developing countries (Claessens, 1996).

Mexico bought back its Brady bonds in 2003. According to the IMF (Köhler, 2003), reform measures such as fiscal prudence, flexible exchange rate, inflation targeting, labor market reform and further structural reforms of institutions and business environment, helped Mexico achieve macroeconomic stability and regain investment grade status in the early 2000s. Its foreign direct investment also rose sharply in those years.

Debt relief can generate large efficiency gains when the indebted countries suffered from a debt overhang. It was found that when debt distressed countries announced debt relief agreements under the Brady Plan, their stock markets appreciated by an average of 60 percent in real dollar terms and in contrast, there was no significant stock market increase for a control group of countries that did not sign Brady agreements. The results persisted after controlling for availability of IMF programs and policy reform measures, such as trade liberalizations, capital account liberalizations and privatization programs. Creditors also benefited from the Brady Plan and stock prices of US commercial banks when significant developing country loan exposures rose by 35 percent (Arslanalp, 2004).

DISTRESSED DEBT RESTUCTURING IN THE POST-PANDEMIC ERA

The New Market Landscape for Brady Bonds

Today's debt market for developing countries is much deeper and more diversified, thanks in part to the financial market development effects in major developing countries, supported by programs such as the Financial Sector Assessment Programs implemented by the IMF, the World Bank and corresponding investment and technical assistance projects and programs led by development institutions. Figure 1 below shows the developing country (a.k.a. emerging market) Eurobond issues, which saw close to ten-fold growth from 2000-2020.

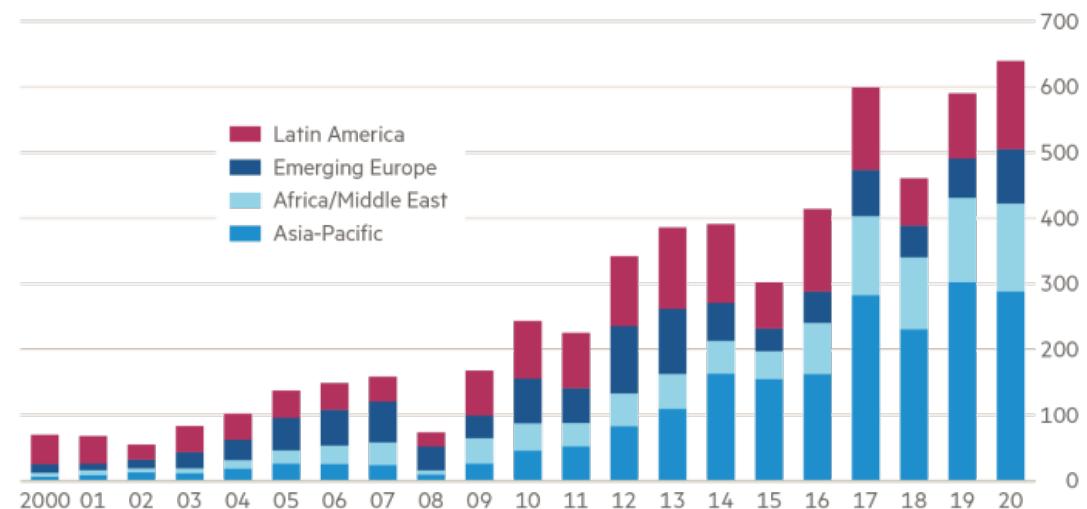
Brady-type debt restructuring can be designed and experimented with in today's market. Although investors are more familiar with bonds issued by developing countries now, the facilitative role of Brady bonds for bond market development may not be that significant. Haircuts and reforms applied under Brady bond transactions will help put countries concerned back on a sustainable path, and the specific bond structures and terms can help enhance credit ratings, reduce cost of issuance and improve tradability.

The bond market for developing countries is more developed as compared with the 1990s, albeit that many countries have been downgraded following the COVID-19 pandemic related economic slowdowns. Figure 2 below shows percentages of sovereigns being downgraded since last year by the big three rating companies (Jones, 2021). Sub-Saharan African and Latin America and Caribbean are two regions seeing the most downgrades. According to Fitch (Fitch Ratings, 2021), COVID-19 resulted in an increase in unemployment, deterioration in social indicators and a rise in income inequality in many developing countries, with many of them now (29 sovereigns) on a negative outlook at the beginning of 2021, up from 13 at the end of 2019, signaling that further downgrades are likely in 2021. In 2020, there were 45 downgrades of Fitch-rated sovereigns (across 27 different entities). A record of five Fitch-rated sovereigns defaulted in 2020, and 11 were rated below 'B-', which is another record. The key issue for a successful Brady-bond-like transaction is still about how to efficiently design a credit enhancement mechanism to bring the bonds up to investment grade level.

Figure 1: Emerging Markets EuroBond Issues

Emerging markets break records in 2020

Gross eurobond issuance (\$bn)



Both rated and unrated eurobonds issued by EM sovereigns, sub-sovereigns, local authorities, financial institutions, non-financial companies and asset/mortgage backed entities are included

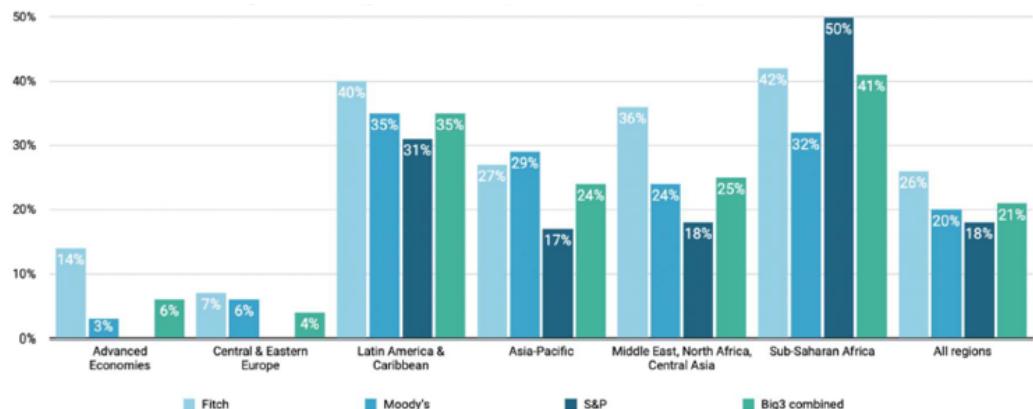
Sources: Dealogic; Moody's Investors Service

© FT

Source: Financial Times, January 28, 2021.

The proposed new Special Drawing Rights (SDRs) allocation of \$650 billion by the IMF can help low-income and other developing countries boost their foreign reserves, likely in the amount of \$21 billion and \$212 billion respectively (Lawder, 2021). It was estimated that the increase will more than double Zambia's reserves, and countries like Argentina, Turkey, Sri Lanka, South Africa, Pakistan and Nigeria, will also see a 10 to 20 percent boost to their foreign exchange reserves (Jones, 2021). The amount could be higher if developed countries, which will receive around \$400 billion from the allocation, lend on, or donate some of their new SDRs. The market is eager to see the plan for the new allocation of SDRs, with experts recommending that at least half of existing and unused SDRs be used to swap with the debt that developing countries have acquired.

Figure 2: Percentages of Sovereigns Being Downgraded



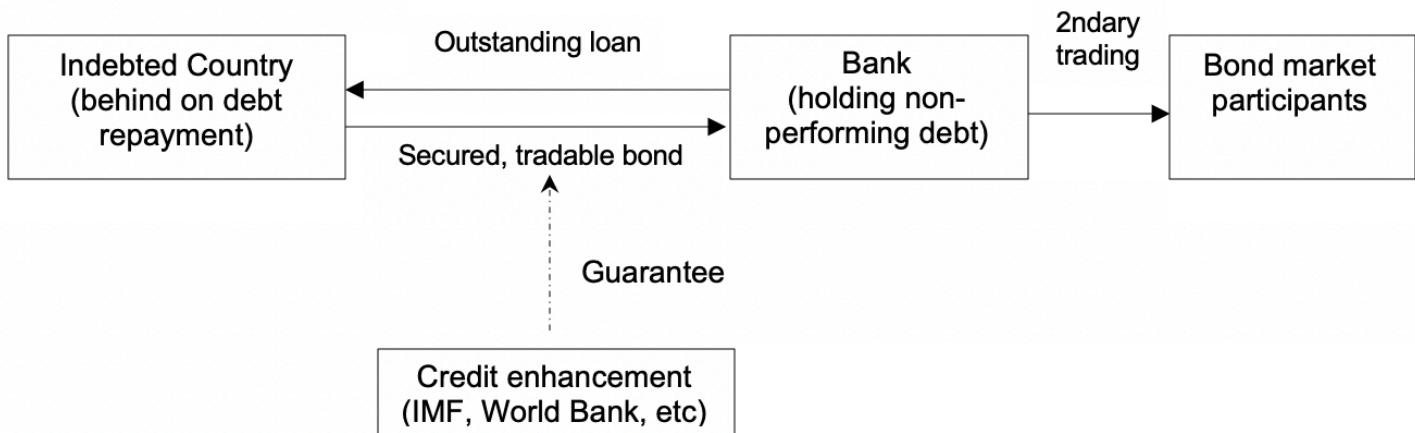
Source: CountryRisk.io.

Some amount from the increased SDR allocation can be used for credit enhancements for Brady-bond-like transactions. Further to the traditional Structured Adjustment Facilities and Development Policy Loans that the IMF and the World Bank used for Brady bond credit enhancement transactions in 1990s, the IMF and the World Bank now have more facilities and loan products under different rules and procedures, concessional or non-concessional, to be used for credit enhancement, including, among others, the Poverty Reduction and Growth Trust, the Rapid Credit Facility and the Rapid Instrument of the IMF (IMF, 2021), the Disaster Risk Financing and Insurance Program, the Crisis Response Window, the Immediate Response Mechanism and the World Bank's Crisis Expedited Loans (World Bank, 2021). Other regional development banks also have similar tools applicable to different borrowers in crisis, some with higher interests and shorter tenures. The World Bank and other regional development banks can also deploy their policy-based guarantee products, which are more efficient from capital charge point of views (The World Bank, 2021).

Since the start of the COVID-19 pandemic, the World Bank Group has committed over \$125 billion to fight the public health, economic and social impacts of the pandemic, and helped more than 100 countries strengthen their pandemic preparedness, protect the poor and jobs and jump start a climate-friendly recovery. The World Bank is also providing \$12 billion to help low- and middle-income countries with COVID-19 vaccination, tests and treatments. The IMF recently released a \$50 billion roadmap to accelerate the equitable distribution of medical equipment to help end the health crisis. Since the start of the pandemic, the IMF has approved over \$109 billion in financing to 84 countries, of which 52 are low-income countries. In addition, debt relief under the IMF's Catastrophe Containment and Relief Trust has been extended to 29 of the IMF's poorest and most vulnerable members, covering \$700 million of eligible debt service due to the IMF through mid-October 2021 (IMF, 2021).

Given the additional allocation of SDRs, debtor countries could request that a third party, such as the IMF and the World Bank, design a Brady-like approach, which could be based on a similar transaction shown above in Chart 1, or using sovereign guarantees from the IMF or the World Bank, such as the 'Alternative 1' shown in Chart 2 below, where instead of using collaterals, third parties such as the IMF or the World Bank can also issue sovereign guarantees for the repayment of principal plus selected interest rates payments (World Bank, 2018). Such guaranteed options have the potential to lower the overall transaction cost, as the IMF and the World Bank are AAA-rated and the guaranteed premium is charged on the net-present-value amount, instead of the whole amount of the bond principal.

Chart 2: Alternative A: An Illustrative "Brady-like" Bond Transaction Structure Using Guarantees



Source: Author, modified based on Josiah Johnston, Wikimedia Commons, October 26, 2008.

The approach and process of addressing debt vulnerability and distress for developing countries is now much more streamlined and transparent as compared with 30 years ago. The IMF, the World Bank and other regional and bilateral development agencies regularly monitor concerned developing countries' debt sustainability, issue early warnings, provide timely assistance and coordinate among creditors. Developing countries may from time to time hesitate about inviting the IMF or the World Bank for fear of quick and negative reactions in the international financial markets, but experiences have shown that earlier and preemptive actions are always better than denial and delay.

A recent IMF Policy Paper (IMF, 2021) indicated the Fund will launch a new Debt Sustainability Framework for market access countries. It will include a broader and more consistent debt coverage, a longer projection horizon, new tools at multiple horizons which account for countries' structural characteristics and enhanced transparency in the bottom-line assessments. Such a Debt Sustainability Framework would be helpful in structuring the distressed debt resolution, including deciding the most suitable haircuts, credit enhancement arrangement, coupon rates and terms for the bond issued and expected pricing. The goal will be to help debt distressed countries get back on track with debt sustainability and stable economic growth, while minimizing the cost to all parties involved.

State-contingent instruments

Economic growth in many developing countries is subject to boom-bust cycles. During the boom period, financial prudence was often overlooked, resulting in unsustainable external borrowings. However, bust does frequently happen, some due to internal factors and many due to external ones, such as the global financial crisis and the COVID-19 pandemic. During the bust period, drastically reduced external demand for a country's main exports reduces economic growth, cuts government revenue and leads to difficulties in sovereign debt servicing and potential default. Default on an individual sovereign debt may lower a country's credit rating and trigger wide-spread acceleration of repayments on all its debt and lead to a down-spiral of government finance, economic growth and people's livelihood in the concerned country.

However, a recent IMF paper (Cohen, 2020) suggested the pandemic might be the opportunity for long overdue innovations in the sovereign debt market to facilitate less protracted and simpler restructurings and to help avoid pitfalls in the future. One such innovation is State-contingent debt instruments (SCDIs), which adjusts future payouts to creditors contingent on the sovereign's economic and financial health —measured either by GDP, exports, wages, or commodity prices. Such innovations could help break this boom-bust cycle (Anthony, 2017).

The variables the interest payments of SCDIs are contingent upon are pro-cyclical, thus when the economy is doing well, measures such as GDP, stock index, wages, SOE revenues etc., are going up, and issuing countries will be obligated to make higher interest payments to investors; fortunately, they can afford to do so given the increases in fiscal revenue following better economic performances. Vice versa, when the economy is not doing well, most economic indicators are going down and the issuing countries will not need to make higher interest payments, lessening their debt service expenses. Thus, the SCDIs can be seen as a counter-cyclical instrument. Table 3 below shows examples of SCDIs issued in the recent past.

Comparing with the bonds contingent on economic variables such as GDP, interest rates, employment rates etc., CLBs can be a good choice for SCDIs, as they are not subject to reporting errors and moral hazards (e.g., to willingly let the economy perform badly to avoid high payments). Many developing countries are crucially dependent on primary commodity production and export. For

Table 3: Selected Examples of Debt Instruments with State-Contingent Features

Instrument	Country (period)	Adjustment: Discrete/ Continuous	Currency	Tenor (years)	State/ trigger variable	Payout / deferral type	Tradeable/ Non-tradeable
Guaranteed equity bond	UK (2002-2009)	Continuous (with principal cap/floor)	Local currency (LCY)				
	5	Equity index	Payout at redemption linked to FTSE 100 level	Non-tradeable (retail)			
Gold bond	India (2015-)	Continuous	LCY	8 (redeemable at 5)	Price of gold	Principal linked to price of gold	Non-tradeable (retail)
Nominal wage linked bond	Uruguay (2014)	Continuous (with coupon floor)	LCY				
	30	Nominal wage index	Principal linked to level of nominal wage Index	Tradeable			
GDP-linked treasury certificates	Portugal (2013-)	Continuous (with coupon floor)	LCY	5	Real GDP growth	Coupon linked to GDP growth (in final 2 years only)	Non-tradeable. (retail)
Revenue indexed bond	Turkey (2009-12)	Continuous (with coupon floor)	USD /LCY	3	Gov't SOE revenues	Coupon linked to income from SOEs	Tradeable
Oil-linked bond	Mexico (1977-1980)	Continuous (with coupon floor)	LCY	3	Export price of oil in \$	Principal linked to local currency price of oil	Tradeable
Petrocaribe loans from Venezuela	Petro-caribe members1 (2005-)	Hybrid	USD/LCY	25	Price of oil in USD	Down payment share, interest rate, and grace period linked to price of oil & exchange rate	Non-tradeable (Official)
AFD Counter-cyclical loans	5 countries (2007-)	Discrete	EUR	25 (with 5-year grace)	Export earnings	Maturity and grace period extended by up to 5 years	Non-tradeable (Official)
Extendible municipal paper	USA muni-cipalities (2000-)	Discrete	LCY	180-270 days	Issuer's discretion	90-day Maturity extension if triggered (from 180 to 270 days)	Tradeable

Source: (Anthony, 2017).

example, copper comprises more than 70 percent of Zambia's exports. Coffee, cocoa, bananas, etc., are also dominant on many countries' major export lists. CLBs can be used as a counter-cyclical tool for primary commodity producing and exporting countries because of their natural hedge.

CLBs are bonds whose yield depends on the price of a specific commodity, or a commodity price index. There are various ways of indexation linkage. An example was an CLB linked to West Texas Intermediate (WTI) Crude Oil, in which the term sheet said that at maturity, investors would receive the principal amount of the notes and in addition, may receive a "Supplemental Redemption Amount," per a specific set of formulas subject to ceiling and floors, depending upon the price of WTI Crude Oil over the term of the notes.

CLBs can be effective in dealing with distressed debt due to the unprecedented global downturns and the boom-bust cycles, both ex-post and ex-ante. From the ex-post angle, when debtors are entering into the default stage, one common resolution method is debt-equity swap, effectively switching for creditors from a fixed-income instrument to a variable one, with the latter contingent on the debtor's economic and/or financial performance. Compared to equity holdings, which are illiquid and highly volatile in value, CLBs have the advantage of being more standardized, transparent and having reliable historical data and well-defined pricing methodologies. On the other hand, comparing with acquisition and liquidation of collaterals of actual assets, such as mines and stockpiles of commodities, CLBs embody smaller and much more manageable transaction costs and political risks.

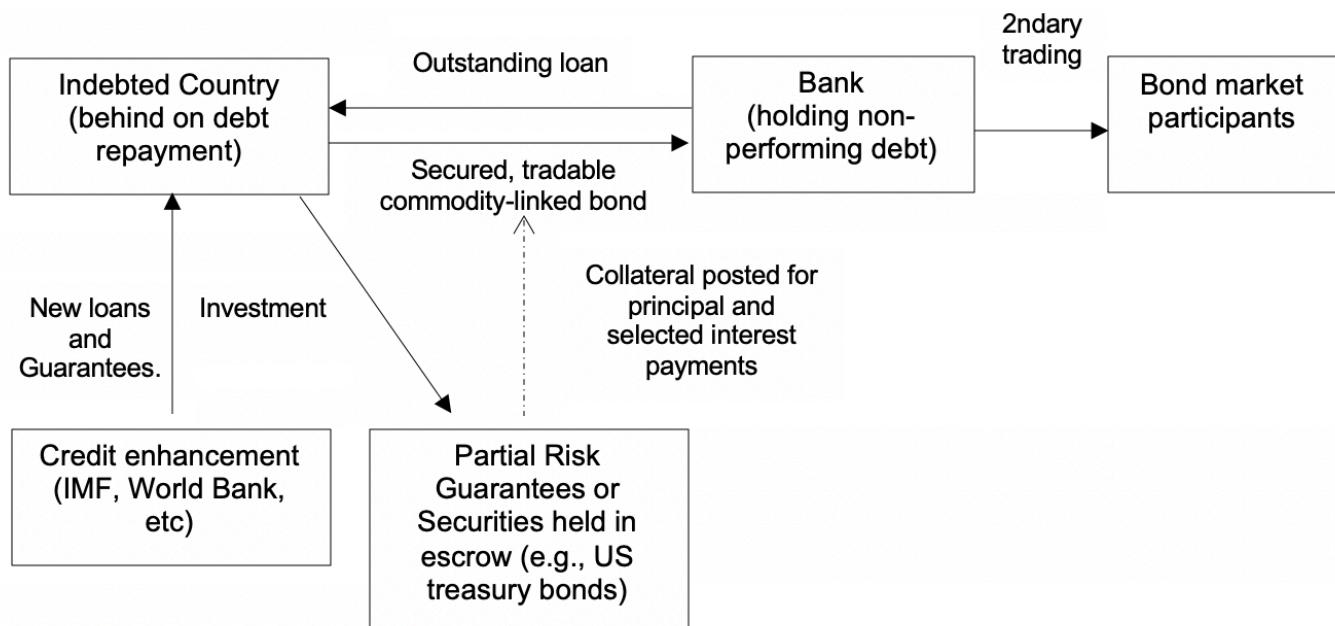
A creditor country may also enjoy a natural hedge if the concerned primary commodity used for the CLB is a major cost factor for their economic activity and revenue. Rising commodity prices will raise the final cost of production using the commodity as input, hence lowering revenue to producers. However, rising commodity prices will lead to higher interest income from the CLBs producers invested in, and thus net out the revenue loss from production. CLBs can also be an attractive alternative for many types of investors to alter their portfolio mix given its different repayment profile and acceptable credit rating.

Chart 3 below provides an illustrative transaction structure for CLBs, Alternative B for debtor countries. Structure-wise, there is virtually no difference from the regular Brady bond illustration except that the bond the indebted country issues is linked to commodity prices. Since the credit risk of issues will be lowered with the natural hedge, the degree of credit enhancement needed from the IMF or the World Bank can be less. In fact, both the Par and Discount Brady bonds Mexico issued in the 1990s could be seen as CLBs, as they had recapture clauses linked to oil price.

Without the distressed debt situation, from the ex-ante angle, CLBs' "counter-cyclical" nature matches a primary commodity producing country's ability to service the debt, thus reducing the credit risk for the creditor. For creditors, CLB can help investors with a natural hedge. For example, airlines and power utility companies have reasons to go long on oil, steelmakers have reasons to go long on iron ore, chocolate makers go long on cocoa, and so on (Frankel, 2017). The currency-plus-commodity basket offers good options a country could use to optimize its debt portfolio (Frankel, 2018). A CLB can also be an attractive alternative for a broader array of investors to improve their portfolio mix, given its different country and repayment profile and acceptable credit rating.

In fact, CLBs have been repeatedly brought up in Africa's debt management discussion in the past several decades. Theoretically, a risk-minimizing debt portfolio for Sub-Saharan Africa should have comprised only about 30 percent of general-obligation debts, and about 70 percent for which, repayment obligations should be indexed to the price of Sub-Saharan Africa's most important exports: cocoa, coffee, cotton, copper and oil (Claessens, 1991). This portfolio reduces by about 90 percent of the volatility of Sub-Saharan African countries' fiscal resources available for imports and the risk-reduction benefits were stable for the specific period for which it was estimated. Another example

Chart 3: Alternative B: An Illustrative State Contingent Instrument (CLB) Structure



Source: Author, based on Josiah Johnston, Wikimedia Commons, October 26, 2008.

was Papua New Guinea (PNG), which had poorly balanced assets and liabilities for debt servicing. An optimal debt portfolio including the use of CLBs and conventional debt denominated in different currencies could play an important role in the country's risk management strategy (Colemen, 1991 and Duncan, 1994).

Commodity futures and/or options contracts are often used by primary commodity producers and buyers to manage risks, particularly for the short term. But there are limitations for a country to significantly rely on such instruments for its sovereign debt management, partly due to term mismatches and partly due to incentive mismatches for government officials. The design features of the CLBs can achieve a good hedging ratio and address debtor and creditor's concerns through features, such as ceilings, floors, etc., and the pricing of CLBs can take all of these features into account (Claessens, 1995).

CLBs have not been used sufficiently in the market for managing developing countries' sovereign debt, because of the difficulty to find the right timing when debtors and creditors are both properly incentivized to use CLBs. Debtor countries would be reluctant when commodity prices are high, and vice-versa for creditor countries when commodity prices are low. However, now the market is at a rare situation where both debtors and creditors are properly incentivized to use CLBs, as debtors need to restructure their distressed debt to avoid defaults with the help of haircuts and credit enhancements and creditors are looking for better hedge and returns when primary commodity prices are raising fast. Even the IMF, which was often negative on CLBs, is changing its position and encouraging the exploration of using SCIDs.

Potential with green finance

Addressing climate change is becoming a global mandate. Impacted by the COVID-19 economic slowdown, greenhouse gas emissions receded by -6.4 percent in 2020. Maintaining this trajectory could turn the tide on global warming. 110 countries have pledged carbon neutrality by 2050-2060: 50 percent of global GDP is committed to it, representing half of global carbon emissions.

It is estimated that trillions of dollars of financial resources are available on the international level for climate projects. Several green funds have been launched for climate mitigation and adaptation. In 2020, the Green Climate Fund secured a pledge for \$10.3 billion from 45 countries. Green exchange-traded funds have attracted private capital: the Luxor Green Bond UCITS³ Fund grew from EUR 5 million in February 2017 to EUR 549 million in December 2020. Several development finance institutions have launched funds specifically for climate finance, like the IFC/Amundi Emerging Green One Fund, with \$1 billion of capital, or the Asian Development Bank's ASEAN Catalytic Green Finance Facility (ADB, 2020), with \$1 billion of capital mobilized from various concessional sources. Both provide a dedicated technical assistance program to prepare and structure green infrastructure projects.

Even though there is ample cash available for investment globally, developing countries are confronted with a limitation on the amount of capital available for financing green projects, and they are struggling to access global capital, despite the thematic attraction of green and sustainable investment opportunities, because of (i) weak pipelines of bankable projects, weak analysis of credit risk, risk of convertibility and capital transfers; (ii) heavy indebtedness without more room for additional borrowing ; and (iii) low disclosure standards and transparency.

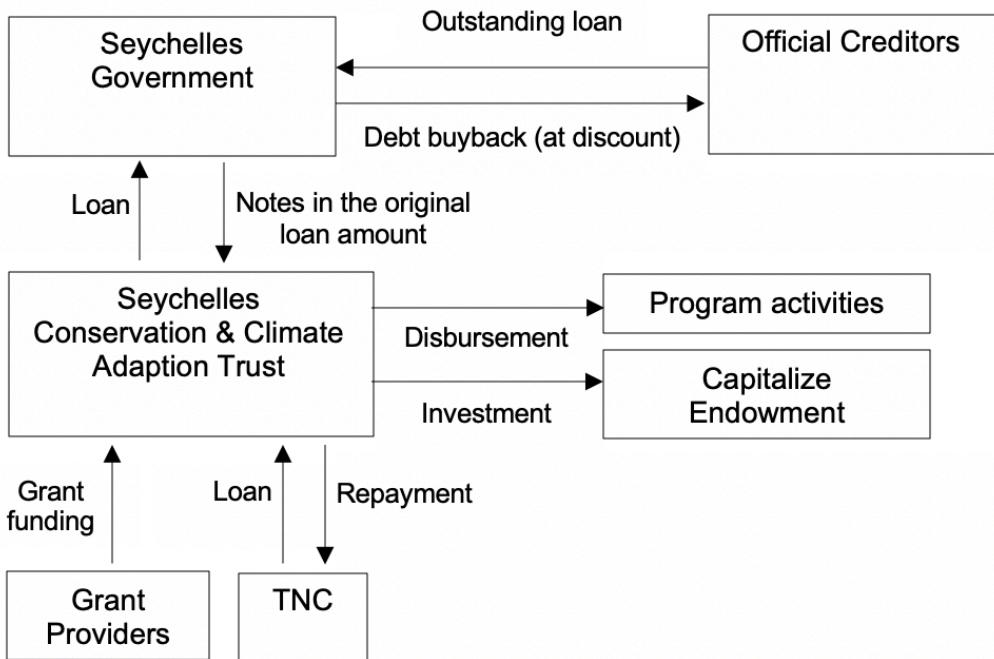
1. Development agencies are helping developing countries strengthen their institutional capacity and develop project pipelines to attract global green capital. There are proposals for developing countries to leverage their existing assets for new borrowings (Wang, 2021). There were successful cases where developing countries as part of the distressed debt resolution process, exchanged their debts for green finance focusing on specific areas, such as nature conservation. Chart 4 below presents an illustrative example, namely the Seychelles debt conversion for marine conservation and climate adaptation project (NatureVest, 2017).

The project is structured by the NatureVest, the conservation investing unit of The Nature Conservancy (TNC) together with the Seychelles government. TNC set up a special purpose vehicle, the Seychelles Conservation and Climate Adaptation Trust, to raise grant and loan capital for the debt conversion and, in exchange, the Seychelles government committed to improved policies and increased investment around marine conservation and climate adaptation. The trust extended a loan to the Seychelles government to purchase a certain amount of its sovereign debt at a discount. The debt conversion redirects the Seychelles' debt payments from official creditors to the trust at more favorable terms (i.e., longer term and partial conversion to local currency). The trust uses the Seychelles' debt repayments to (i) repay the initial capital raised, and (ii) fund ongoing marine conservation and climate adaptation programming. The project itself is to create the Indian Ocean's second largest marine reserve.

Instead of directly financing the nature conversation project, such distressed debt transaction incentivizes the Seychelles government to embark on climate projects and to implement a set of supporting policies, thus, to ensure the impact and sustainability not only for this project, but also for future projects. Through mobilization of grant funding, agreed haircuts in debt buy-back and recycling debt repayments to match the timing of nature conservation disbursement and investment, TNC was able to find the win-win solution for green and climate change finance. Similar approaches through distressed debt restructuring, policy reforms and project design and implementation assistance, have also been adopted by TNC to create incentives and improve readiness of developing countries for green and climate projects.

³ Undertakings for Collective Investment in Transferable Securities

Chart 4: Alternative C: An Illustrative Transaction Structure for Distressed Debt Buybacks with Green Finance



Source: Author's modification based on NatureVest, 2017.

Although the example presented is not a Brady-bond-like transaction, it does indicate that there are opportunities to promote green and climate finance when resolving distressed debts. In addition to debt sustainability and macroeconomic stability, much more work needs to be done to help debt distressed countries build capacities, develop project pipelines and improve disclosure for green and climate change finance.

Theoretically, it is also possible for debt distressed countries to issue green and climate bonds instead of straight vanilla bonds. These green bonds will need to meet global standards. The Green Bond Principles, introduced by the International Capital Markets Association, set the conditions for the selection and management of green projects, while the Climate Bonds Standard offers criteria to identify sectors aligned with the objectives of the Paris Climate Agreement. The EU Taxonomy for Sustainable Activities is aligned with these and can be used as a good reference. The Science-based Target Initiative offers scientists to contribute to verifying that projects are aligned with the latest scientific developments.

More careful work needs to be done to ensure debt distressed developing countries have the proper policies and institutions for issuing green and climate bonds and implementing green and climate positive projects. The countries should also have good disclosure standards and verifiers to ensure standards are being met.

The Climate Bond Initiative maintains a database of certificated bonds as the result of its Climate Bonds Standard and Certification Scheme. Rigorous scientific criteria ensure that it is consistent with the goals of the Paris Climate Agreement to limit warming to under 2 degrees. The Scheme is used globally by bond issuers, governments, investors and financial markets to prioritize investments that genuinely contribute to addressing climate change (Climate Bond Initiative, 2021). As of March 31,

2021, there were 339 certified debts in the database for a total amount of \$170 billion. Most countries in the DSSI program have not issued climate bonds capable of being certified by the Climate Bond Initiative, except that Kenya had one bond issued by a private sector entity in October 2019 for \$41.5 million to finance low carbon buildings.

SPECIFICS FOR CHINA'S OVERSEAS LOANS AND THE NEED FOR RESTRUCTURING

It was estimated that total debt outstanding by developing and emerging countries to China was \$380 billion in 2019 (Horn et al, 2019) although many consider this number an overestimate. The World Bank's debt statistics show 72 low-income countries are eligible for temporary suspension of debt-service payments owed to their official bilateral creditors and indicated that as of 2018, these 72 countries combined had a total outstanding debt of \$104 billion to Chinese creditors, or about 20 percent of the countries' public external debt, among which 62 percent, was disbursed in Africa, or 22 percent of respective group's public external debt (Huang & Brautigam 2020). It is also estimated that China holds 13 percent of public and public guaranteed debt in Africa in 2019 (Brautigam, 2021).

The expected additional SDR allocation is welcomed, although some developing countries say that it should come earlier and most agreed that such liquidity support should not be the substitute for debt restructuring in countries where debt trajectories are on unsustainable paths (Smith, 2021).

The additional SDR allocation for debt distressed countries, loans and guarantees from the IMF, the World Bank and other development partners may make billions of dollars available for guarantees and credit enhancement. But the amount of funds available for a specific debt distressed country might not be sufficient, due to country ceilings and other limitations. Additional funding from bilateral sources might be possible, particularly if there is an IMF-led debt restructuring process, but the total amount may still be limited.

It is possible for Chinese financial institutions to use Brady-bond-like transactions to convert impaired loans to tradable bonds in the post-pandemic era. For Chinese creditors, the traditional mechanism under Brady bond transactions using longer term US treasury bonds as collateral and establish escrow accounts in the Federal Reserve Bank of New York for rolling interesting guarantees might not be the most convenient option. There are discussions of substituting US treasury bonds with the global bonds, either with or without the pandemic recovery theme, denominated either in US dollars or SDRs, issued by the Chinese government or the China Development Bank. But given China's A+ sovereign rating, which is about two notches lower than the US's AA+ rating, the collateral using bonds issued by China might potentially require a higher yield, hence the higher cost for the developing country.

It will be important for China to coordinate closely with the IMF, G20 and other international organizations for consistent approaches. The three basic principles of the Brady-bond-like transactions, namely, (i) debt relief in exchange for collectability; (ii) debt relief linked to economic policy reforms and (iii) the resulting debt to be highly tradable; should be maintained. The roles of the IMF, the World Bank and other regional development partners continue to be important, especially on policy reforms for debt sustainability and economic stability, efficient credit enhancement and broader international partner coordination.

Unconventional approaches using SCDFs, particularly CLBs, can be considered. Certain features of CLBs can be introduced to Brady-bond-like transactions. Thanks to natural hedges for debtor countries, the need for collaterals to achieve the same credit enhancement for CLBs hopefully can be reduced. CLBs can serve China's needs well from the commodity-price risk's point of view, because

of its position of a natural hedge. China is a major importer in the global markets for several primary commodities, such as copper, aluminum, nickel, coal, iron ore, oil and gas, cotton, soybeans, wheat, etc. Chinese companies with the natural hedges will be interested to invest in CLBs, thus making the CLBs easily tradable. From the ex-ante angle, CLBs, combined with the optimal portfolio of debt in different currencies, can help developing countries reduce vulnerability to boom-bust cycles and improve debt sustainability and economic stability in the long run.

Chinese creditors can potentially liaise with TNC and similar organizations to work together on the distressed loan buy-back initiatives. At the same time, there might be opportunities for Chinese climate change financers to join forces with TNC on some of these projects. The proposed swap between distressed debt for carbon neutrality bonds, etc., might be possible, but a lot more work needs to be done to qualify those bonds as green or climate change bonds by global certification bodies. Otherwise, the bonds will not be easily tradable and the creditability of the bonds may also be impaired.

CONCLUSION

This paper reviews the historical context of the Brady bond -- its transaction structure, value-added by respective partners, different variants of applications -- and case studies, as well as a summary of results. The paper highlights the key considerations of applying the Brady-bond-like transactions in today's post-pandemic era, identifies similarities and differences of the market environment and potential implications and suggests that it is possible to structure Brady-bond-like transactions for distressed debt resolutions, specifically pertaining to China's loans to developing countries. The paper also considers potentially innovative approaches, including the use of SCDIs, particularly CLBs, and distressed debt buy-backs with green and climate change finance.

Chinese creditors have significant exposures in DSSI countries and other developing countries. The prolonged contraction of the global economy due to the pandemic will make it difficult for many countries to timely service their debts. Timely and efficient resolution of distressed debts will help developing countries regain their footing in debt sustainability and creditors to minimize losses, while continuing to work with debtor countries and international financial partners for future international cooperation and growth.

The good news is that there will be strong willingness, available funding and institutional arrangements globally to tackle distressed debt situation in developing countries in the post-pandemic era. These include additional SDR allocations; expanded lending and guarantee facilities made available by the IMF, the World Bank, regional development banks and other multilateral and bilateral agencies; funds made available for green and climate change finance; and coordination mechanisms for developing country debt problems.

Brady-bond-like transactions are possible in today's post-pandemic era for debt distressed countries.

It is recommended that:

- The general principles, such as debt relief in exchange for greater assurance of collectability, linking debt relief economic policy reforms and making resulting debt highly tradable, should still be applied in today's market conditions. However, there will not be a standard, quick and easy solution in most situations, careful case-by-case analysis and deliberation will be needed for deciding the best transaction structure;
- Both debtors and creditors will need to carefully consider all possibilities and work to find and implement efficient, yet timely solutions. Modifications may be needed to meet needs

of debtors and creditors, including the guarantee mechanisms for both principal and interest, and themes and terms of the bonds to be issued by the developing country;

- Using SCDIs, such as CLBs, in distressed debt resolution under the auspice of Brady-bond-like transactions can be beneficial for both debtor and creditor when they have natural hedge positions. The timing of the post-pandemic era is good, as both parties are sufficiently incentivized given today's market condition;
- A good understanding of debtor and creditor situations would be a good start. Close coordination with the IMF, the World Bank and other development agencies, as well as international forums and groups, will be needed to structure sustainable and executable transactions for distressed debt resolution while minimizing potential risks.
- Straight vanilla Brady type bonds, SCDIs, CLBs, green and climate finance and other options are all possibilities. Green and climate bonds have great potential, as evidenced by existing swaps of distressed debt to green finance. But a lot more work needs to be done to qualify bonds as green or climate finance bonds by global certification bodies and to ensure good tradability;
- Chinese creditors should not look at distressed debt resolution as a one-shot deal, but to collaborate with other partners to engage and work with debtor countries in broader policy and institutional development issues to help them regain stable economic growth and become a contributing factor in the global drive for sustainable growth.

Annex Table 1: Debt Service Suspension Initiative (DSSI) Countries

Country	DSSI Participation	Risk of external debt distress	Risk of overall debt distress	Date of DSA Publication	Potential DSSI Savings May-December 2020		Potential DSSI Savings January-June 2021	
					% of GDP	USD millions	% of GDP	USD millions
Afghanistan	Yes	High	High	20-Nov	0.2	39.3	0.2	36.7
Angola	Yes	...	...		1.9	1734.9	1.4	1292.8
Bangladesh	No	Low	Low	20-May	0.1	331.9	0.1	290.8
Benin	No	Moderate	Moderate	20-Dec	0.1	16.1	0.1	15.2
Bhutan	No	Moderate	...	18-Oct	5.8	145.4	10	248.2
Burkina Faso	Yes	Moderate	Moderate	20-Nov	0.2	24.2	0.1	12.7
Burundi	Yes	High	...	15-Mar	0.2	4.5	0.1	2.8
Cabo Verde	Yes	High	High	20-Oct	0.9	18	0.8	15.8
Cambodia	No	Low	Low	19-Dec	0.8	219.2	0.8	209.2
Cameroon	Yes	High	High	20-Oct	0.9	337.3	0.7	271.9
Central African Republic	Yes	High	High	21-Jan	0.3	7.4	0.4	8.7
Chad	Yes	High	High	20-Jul	0.6	65.4	0.4	43.9
Comoros	Yes	Moderate	Moderate	20-Apr	0.2	2.3	0.2	1.9
Congo, Dem. Rep.	Yes	Moderate	Moderate	20-Apr	0.3	156.3	0.2	105.9

Country	DSSI Participation	Risk of external debt distress	Risk of overall debt distress	Date of DSA Publication	Potential DSSI Savings May-December 2020		Potential DSSI Savings January-June 2021	
					% of GDP	USD millions	% of GDP	USD millions
Congo, Rep.	Yes	In distress	In distress	20-Jan	1.4	181.8	1.5	190.5
Côte d'Ivoire	Yes	Moderate	Moderate	20-Dec	0.4	224	0.1	67.7
Djibouti	Yes	High	High	20-May	1.7	56.8	2	66.7
Dominica	Yes	High	...	18-Jun	0.7	4.3	0.6	3.7
Ethiopia	Yes	High	High	20-Apr	0.5	472.9	0.4	359.6
Fiji	Yes	...	...		0.2	13.4	0.2	13.3
Gambia, The	Yes	High	High	21-Jan	0.6	10.2	0.4	6.4
Ghana	No	High	High	20-Apr	0.6	377.9	0.3	180.2
Grenada	Yes	In distress	In distress	20-Apr	0.7	8	0.4	5.1
Guinea	Yes	Moderate	Moderate	20-Dec	0.5	70.6	0.2	29.2
Guinea-Bissau	Yes	High	High	21-Jan	0.1	2.1	0.1	1.7
Guyana	No	Moderate	Moderate	19-Aug	0.3	16.9	0.3	13.6
Haiti	No	High	High	20-Apr	0.5	76.2	0.4	59.6
Honduras	No	Low	Low	20-Jun	0.4	102	0.1	27.5
Kenya	Yes	High	High	20-May	0.7	630.8	0.7	620.3
Kiribati	No	High	High	19-Jan				
Kosovo	No	...	...		0.1	7.5	0	3.9
Kyrgyz Republic	No	Moderate	Moderate	20-Mar	0.6	52.1	0.6	49.5
Lao PDR	No	High	High	19-Aug	1.7	315	1.5	277.6
Lesotho	Yes	Moderate	Moderate	20-Jul	0.4	9.8	0.3	5.9
Liberia	Yes	Moderate	High	20-Dec	0.1	2.3	0.1	2.2
Madagascar	Yes	Moderate	Moderate	21-Mar	0.2	35.5	0.1	8.5
Malawi	Yes	Moderate	High	20-Oct	0.2	17.4	0.2	16.7
Maldives	Yes	High	High	20-Apr	0.9	50.7	1.1	61.3
Mali	Yes	Moderate	Moderate	21-Feb	0.5	82.5	0.3	46.3
Marshall Islands	No	High	...	18-Sep				
Mauritania	Yes	High	High	20-Sep	1.1	90.8	1.3	102.5
Micronesia	No	High	High	19-Aug				
Moldova	No	Low	Low	20-Apr	0.2	23.2	0.2	19.9
Mongolia	No	...	...		0.5	69.9	0.4	60.4
Mozambique	Yes	In distress	In distress	20-Apr	1.9	292.6	1.6	250.2
Myanmar	Yes	Low	Low	21-Jan	0.6	379.9	0.5	359.3
Nepal	Yes	Low	Low	20-May	0.1	24.8	0.1	21.3

(continued)

Annex Table 1: Debt Service Suspension Initiative (DSSI) Countries (continued)

Country	DSSI Participation	Risk of external debt distress	Risk of overall debt distress	Date of DSA Publication	Potential DSSI Savings May-December 2020		Potential DSSI Savings January-June 2021	
					% of GDP	USD millions	% of GDP	USD millions
Nicaragua	No	Moderate	Moderate	20-Nov	0.3	33	0.2	20
Niger	Yes	Moderate	Moderate	20-Oct	0.2	26	0.2	24
Nigeria	No	...	...		0	123.5	0	155.2
Pakistan	Yes	...	...		1.3	3645.4	0.9	2487.8
Papua New Guinea	Yes	High	High	20-Jun	1.3	326.9	0.1	26.3
Rwanda	No	Moderate	Moderate	20-Dec	0.1	13.2	0.1	11.7
Samoa	Yes	High	High	21-Mar	1.1	9.5	1	8.4
Sao Tome and Principe	Yes	In distress	In distress	21-Feb	0.4	1.6	0.7	2.8
Senegal	Yes	Moderate	Moderate	21-Jan	0.6	139.2	0.4	97.7
Sierra Leone	Yes	High	High	21-Mar	0.2	8.1	0.2	6.9
Solomon Islands	No	Moderate	Moderate	20-Jun	0.1	1.5	0	0.7
Somalia	No	In distress	In distress	20-Nov	0	1.7	0	1.4
South Sudan	No	High	High	21-Mar				
St. Lucia	Yes	...	...		0.2	5.2	0.1	3.1
St. Vincent and the Grenadines	Yes	High	High	20-May	0.5	4.1	0.4	2.9
Tajikistan	Yes	High	High	20-May	0.8	63.8	0.6	50.3
Tanzania	Yes	Low	...	18-Jan	0.2	138.6	0.2	109.6
Timor-Leste	No	Low	Low	19-Mar	0	0	0	0
Togo	Yes	Moderate	High	20-Apr	0.4	26.6	0.3	23.9
Tonga	Yes	High	High	21-Jan	1.2	6.3	1.2	6.2
Tuvalu	No	High	...	18-Jun				
Uganda	Yes	Low	Low	20-May	0.2	91.1	0.3	107
Uzbekistan	No	Low	Low	20-May	0.4	257.3	0.4	217.5
Vanuatu	No	Moderate	Moderate	19-Jun	0.7	6.2	0.7	6.1
Yemen, Rep.	Yes	...	...		0.9	211.5	0.6	137.7
Zambia	Yes	High	High	19-Jul	0.7	165.4	0.8	184

Source: The World Bank, COVID-19: Debt Service Suspension Initiative. Reproduced from the table "How DSSI Benefits Low-Income Countries (current as of May 20, 2021, to be updated once a week.)".

REFERENCES

Asian Development Bank, "ASEAN Catalytic Green Finance Facility", January 2020, <https://www.adb.org/publications/asean-catalytic-green-finance-facility>.

Anthony, Myrvin L., Narcissa Balta, Tom Best, Sanaa Nadeem, Eriko Togo "What history tells us about state-contingent debt instruments," 06 June 2017, <https://voxeu.org/article/what-history-tells-us-about-state-contingent-debt-instruments>.

Arslanalp, Serkan, Peter Blair Henry, "Is Debt Relief Efficient?" Working Paper 10217, National Bureau of Economic Research, January 2004. <http://www.nber.org/papers/w10217>.

Brautigam, Deborah, "Trends in China's Lending to Developing Countries" Presentation to the G24, March 18, 2021, China Africa Research Initiative, Johns Hopkins University, School of Advanced International Studies.

Chen, James, "Brady Bonds", Investopedia, <https://www.investopedia.com/terms/b/bradybonds.asp>, 2019.

Choudhry, Moorad, "Brady Bonds", Emerging Bond Markets and Brady Bonds, 2001.

Claessens, Stijn and Ying Qian, "Bootstrapping Options: An Application to Recapture Clauses," Economics Letters, pp. 377-384, Vol 47, Issue 3-4, March 1995.

Claessens, Stijn and Ying Qian, "Risk management in sub-Saharan Africa," World Bank Policy Research Working Paper No. 593, February 1991.

Climate Bond Initiative, Database of Certificated Bonds, [https://www.climatebonds.net/certification/certified-bonds?field_certgb_sector_criteria_value_op=contains&field_certgb_sector_criteria_value=&field_certgb_country_value_op=starts&field_certgb_country_value=malaysia&field_certgb_issuer_value_op=contains&field_certgb_issuer_value=&field_certgb_verifier_approved_value_op=contains&field_certgb_verifier_approved_value="](https://www.climatebonds.net/certification/certified-bonds?field_certgb_sector_criteria_value_op=contains&field_certgb_sector_criteria_value=&field_certgb_country_value_op=starts&field_certgb_country_value=malaysia&field_certgb_issuer_value_op=contains&field_certgb_issuer_value=&field_certgb_verifier_approved_value_op=contains&field_certgb_verifier_approved_value=), accessed May 2021.

Claessens, Stijn, and George Pennacchi. "Estimating the Likelihood of Mexican Default from the Market Prices of Brady Bonds." The Journal of Financial and Quantitative Analysis, vol. 31, no. 1, 1996, pp. 109-126. JSTOR, www.jstor.org/stable/2331389. Accessed 26 May 2021.

Coleman, Jonathan, and Ying Qian, "Managing Financial Risks in Papua New Guinea: An Optimal External Debt Portfolio," World Bank Policy Research Working Paper No. 739, 1991.

Cohen, Charles, S. M. Ali Abbas, Myrvin Anthony, Tom Best, Peter Breuer, Hui Miao, Alla Myrvoda, Eriko Togo, "The Role of State-Contingent Debt Instruments in Sovereign Debt Restructurings", Staff Discussion Notes No. 2020/006, November, 2020, <https://www.imf.org/en/Publications/Staff-Discussion-Notes/Issues/2020/11/13/The-Role-of-State-Contingent-Debt-Instruments-in-Sovereign-Debt-Restructurings-49732>.

Duncan, Ronald, and Ying Qian, "Optimal Hedging Strategy Re-visited - Acknowledging the Existence of Non-stationary Economic Time Series," World Bank Policy Research Working Paper No. 1279, March 1994.

Financial Times, <https://www.ft.com/content/1a7e3490-be2d-4630-8999-59316db02b22>.

Financial Times, by Tommy Stubbington and Colby Smith, "Emerging markets borrowers sell debt at record rate in January - Issuance 'tsunami' comes as governments and companies seek to lock in low interest rates", January 28, 2021, <https://www.ft.com/content/1a7e3490-be2d-4630-8999-59316db02b22>.

Fitch Ratings, "Non-Rating Action Commentary - Emerging-Market Sovereign Credit Outlook Remains Challenging," Wed 20 Jan, 2021, <https://www.fitchratings.com/research/sovereigns/emerging-market-sovereign-credit-outlook-remains-challenging-20-01-2021>

Frankel, Jeffrey, "How to Cope with Volatile Commodity Export Prices: Three Proposals," Mimeo," February 2018.

Frankel, Jeffrey, "Four Proposals to Help Commodity Exporters Cope with Price Volatility," Mimeo, October 2017.

Gallagher, Kevin and Yan Wang, "Sovereign Debt Through the Lens of Asset Management: Implications for SADC Countries", GEGI Working Paper 042, 11/2020, Global Development Policy Center, Boston University.

Gonçalves, F. O. D., L. Calôba, "The Dynamics of the Option-Adjusted Spread of Brady Bond Securities", Brazilian Review of Finance, 2003.

Horn, Sebastian, Carmen M. Reinhart, Christoph Trebesch, "China's Overseas Lending", National Bureau of Economic Research, Working Paper 26050, July 2019 <http://www.nber.org/papers/w26050>

Horst Köhler, "Mexico - Marking the Retirement of its Brady Bonds", June 2003, address as the Managing Director of the IMF.

Huang, Yufan and Deborah Brautigam, "Putting a Dollar Amount on China's Loans to the Developing World - At long last, we now know how much poor country governments owe China," the Diplomat, June 2020, <https://thediplomat.com/2020/06/putting-a-dollar-amount-on-chinas-loans-to-the-developing-world/>.

IMF, "IMF Lending," February 22, 2021, <https://www.imf.org/en/About/Factsheets/IMF-Lending>

IMF Policy Paper, "Review of the Debt Sustainability Framework for Market Access Countries," January 2021, <https://www.imf.org/en/Publications/Policy-Papers/Issues/2021/02/03/Review-of-The-Debt-Sustainability-Framework-For-Market-Access-Countries-50060>.

IMF, "World Bank, IMF Launch High-Level Advisory Group on Sustainable and Inclusive Recovery and Growth" June 15, 2021, IMF Press Release, <https://www.imf.org/en/News/Articles/2021/06/14/pr21175-world-bank-imf-launch-hlag-sustainable-inclusive-recovery-growth>.

Jones, Marc, "Explainer: Which countries will benefit most from an IMF SDR increase", April 7, 2021, <https://www.reuters.com/article/us-imf-sdr/explainer-which-countries-will-benefit-most-from-an-imf-sdr-increase-idUSKBN2BU1BQ>.

Jones, Marc, Reuters, Emerging Market, "COVID-19 has caused rich-poor split in sovereign rating cuts, study shows", March 17, 2021, <https://www.reuters.com/article/us-ratings-sovereign/covid-19-has-caused-rich-poor-split-in-sovereign-rating-cuts-study-shows-idUSKBN2B92OY>.

Kharas, Homi and Meagan Dooley "Debt distress and development distress: Twin crises of 2021", Brookings Institution, Global Development Working Paper #153, 2021, www.brookings.edu/global.

Lawder, David, Andrea Shalal, "IMF's \$650 billion liquidity boost could happen in August -U.S. Treasury officials", Reuters, April 1, 2021, <https://www.reuters.com/article/us-usa-treasury-imf/imfs-650-billion-liquidity-boost-could-happen-in-august-u-s-treasury-officials-idUSKBN2BO669>.

NatureVest, "Case Study - Seychelles Debt Conversion for Marine Conservation and Climate Adaptation", The Nature Conservancy, March 2017.

New York University, "Debt Instruments- Emerging Markets," Backus/December 2, 1998, <http://pages.stern.nyu.edu/~dbackus/dbtl11.pdf>.

GLOBAL CHINA INITIATIVE



The Global China Initiative (GCI) is a research initiative at Boston University's Global Development Policy Center. The GDP Center is a University wide center in partnership with the Frederick S. Pardee School for Global Studies. The Center's mission is to advance policy-oriented research for financial stability, human wellbeing, and environmental sustainability.

www.bu.edu/gdp

The views expressed in this Working Paper are strictly those of the author(s) and do not represent the position of Boston University, or the Global Development Policy Center.

Smith, Elliot, CNBC, "Debt-distressed countries will not be saved by the IMF's \$650 billion currency boost, economist says", APR 8 2021, <https://www.cnbc.com/2021/04/08/imfs-650-billion-currency-boost-wont-save-debt-distressed-countries-economist-says.html>.

The World Bank, "Guarantees Program," 2021, <https://www.worldbank.org/en/programs/guarantees-program>.

The World Bank, "Policy-based Guarantees", 2015, <https://pubdocs.worldbank.org/en/920781440595372327/PolicyBasedGuarantees.pdf>.

The World Bank, "Disaster Risk Financing and Insurance (DRFI) Program", 2021, <https://www.worldbank.org/en/programs/disaster-risk-financing-and-insurance-program>.

The World Bank, "Crisis Response Window (CRW)," 2021, <http://ida.worldbank.org/financing/crisis-response-window>.

The World Bank, "Immediate Response Mechanism (IRM)", 2021, <http://ida.worldbank.org/financing/immediate-response-mechanism>.

The World Bank, "World Bank Financial Products", 2021, <https://thedocs.worldbank.org/en/doc/e8c47b-ba4e03a0ffc0b829574b4b8275-0340012021/original/Overview-of-WB-Financial-Products.pdf>.

The World Bank, "Guarantees Program", 2018, <https://www.worldbank.org/en/programs/guarantees-program#5>.

The World Bank, "COVID-19: Debt Service Suspension Initiative", <https://www.worldbank.org/en/topic/debt/brief/covid-19-debt-service-suspension-initiative>, Accessed in May 2021.

Trade Association for the Emerging Markets, "The Brady Plan," 2021, <https://www.emta.org/em-background/the-brady-plan/>.

Wang, Yan, "Debt Restructuring in the post pandemic era in Africa: An Asset plus approach", mimeo, July 2021.

Weeks-Brown, Rhoda, and Martin Mühleisen, "The IMF 30 Years After Brady", IMF Blog: Insights and Analysis on Economics and Finance, 2019, <https://blogs.imf.org/2019/04/11/the-imf-30-years-after-brady/>.

Wijnbergen, Sweder van, Mervyn King, Richard Portes, "Mexico and the Brady Plan", Economic Policy, Vol. 6, No. 12, Apr. 1991, pp. 13-56.