

# Local Currency Lending is a Double Win: More Sustainability and Lower Financing Costs

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## Introduction

Increasing debt management capacity for sovereigns will be a most crucial development challenge for decades to come. The COVID-19 economic shutdown caused a massive increase in debt and currency risk held by governments (Sikarwar, 2021). A recent study reported that 68 sovereigns received credit downgrades since March 2020 (OECD). Moreover, nations need further financing for SDGs and climate pledges.

One important focus of debt management is to minimize long-term costs of financing, while protecting debt sustainability. This report examines one critical cost element of debt, the credit spread. We compare the credit spreads of debts denominated in local currencies versus debts denominated in foreign currencies (essentially USD). We collected data from 21 governments that issue bonds in local (LC) and foreign currency (FC) and find clear advantages to holding and increasing sovereign debt in local currency. Funding in local currencies not only reduces the FX risk exposure, but LC credit spreads are also lower than FC credit spreads in 20 of 21 countries. Furthermore, LC credit spreads are more resistant to changes in global volatility than FC.

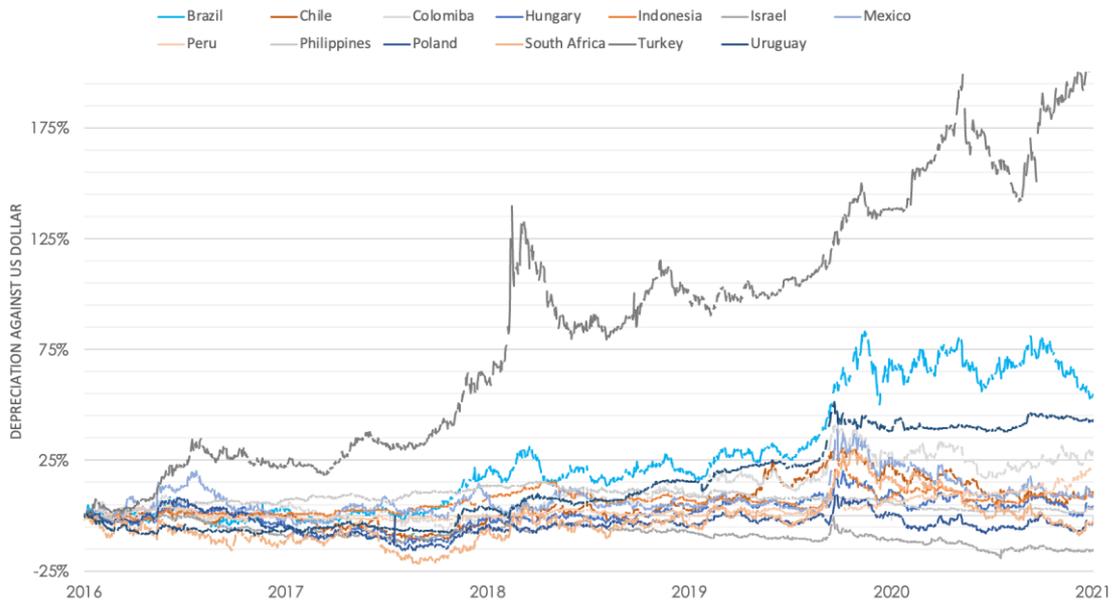
The report is organized as follows: Section 1 presents the dataset and methodology. Section 2 presents credit spreads and yield comparisons for LC and FC debt. Section 3 conducts a risk analysis for LC and FC debt markets. Section 4 concludes with policy implications.

## Dataset and Trends

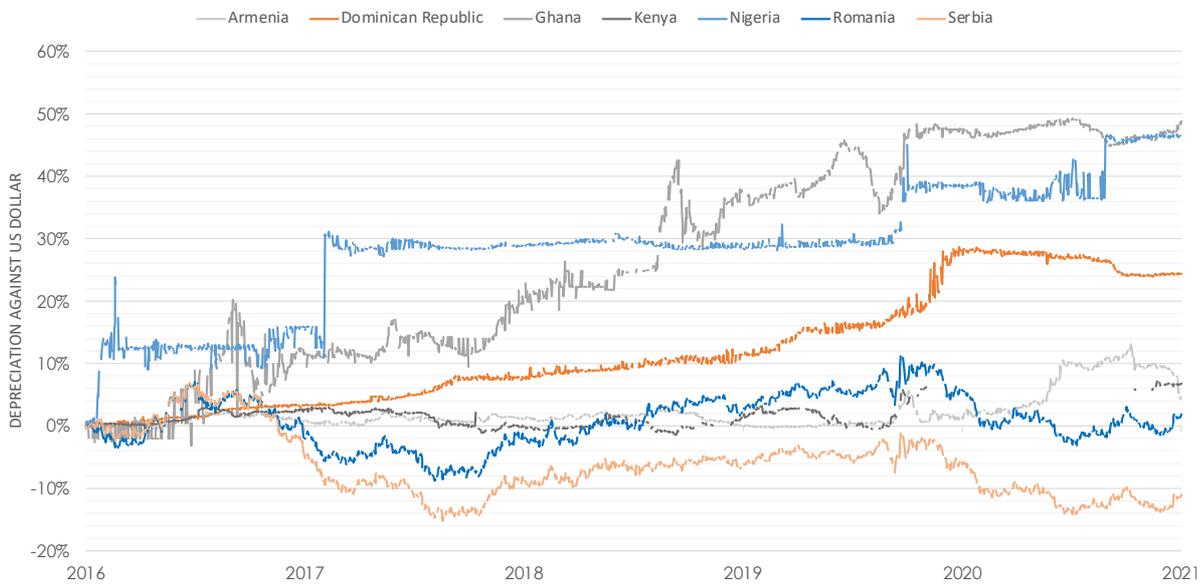
This dataset comprises 14 emerging markets (EMs) and 7 frontier markets (FMs) who issued foreign and local currency bonds from June 2010 until June 2021. Using methodology from Du and Schreger (2016), the local currency credit spread (LCCS) is the LC yield swapped into US LIBOR minus the US treasury yield. The figure allows for direct comparison to foreign currency credit spread (FCCS), the US dollar yield of a country minus the US treasury yield. The LCCS and FCCS are perfectly comparable from the investor's perspective, and the creditor holds no FX risk because NDS contracts hedge the LC bonds.

Figures 1 and 2 show the depreciation of LC against the USD over the past five years. EM currencies depreciated against USD by 13.26% on average (excluding Turkey) and FM currencies by 17.36%. Only Israel, Poland, and South Africa appreciated against the USD.

**Figure 1: Depreciation of Local Currency to USD (Emerging Markets)**



**Figure 2: Depreciation of Local Currency to USD (Frontier Markets)**



**Table 1:** Sample countries, data sources, dates, and the source of the swap market data.

Table 1: Emerging Market Countries					
Country	LC Data	FC Data	NDS Data	Data Available	Market Classification
Brazil	Market	BFV	Market	6/30/10 to 6/30/21	Emerging
Chile	Market	BFV	Market	4/8/11 to 6/30/21	Emerging
Colombia	Market	BFV	Market	6/30/10 to 6/30/21	Emerging
Hungary	Market	NSS	Market	6/30/10 to 6/30/21	Emerging
Indonesia	Market	Market	Market	6/30/10 to 6/30/21	Emerging
Israel	Market	Market	Market	6/30/10 to 6/30/21	Emerging
Mexico	Market	BFV	Market	6/30/10 to 6/30/21	Emerging
Peru	Market	BFV	Market	6/30/10 to 6/30/21	Emerging
Philippines	Market	BFV	Market	6/30/10 to 6/30/21	Emerging
Poland	Market	NSS	Market	6/30/10 to 6/30/21	Emerging
Romania	Market	NSS	Market	2/19/13 to 6/30/21	Frontier
Russia	Market	BFV	Market	12/5/14 to 6/30/21	Emerging
South Africa	Market	Market	Market	6/12/14 to 6/30/21	Emerging
Turkey	Market	BFV	Market	6/30/10 to 6/30/21	Emerging
Uruguay	TCX	BFV	TCX	7/18/14 to 6/30/21	Emerging

Frontier Market Countries					
Country	LC Data	FC Data	NDS Data	Data Available	Market Classification
Armenia	Market	NSS	TCX	8/24/14 to 3/30/21	Frontier
Dominican Republic	Market	NSS	TCX	7/25/14 to 6/30/21	Frontier
Ghana	Market	NSS	TCX	9/14/17 to 6/30/21	Frontier
Kenya	Market	NSS	TCX	7/18/14 to 6/30/21	Frontier
Nigeria	Market	NSS	TCX	7/8/13 to 6/30/21	Frontier
Romania	Market	NSS	Market	2/19/13 to 6/30/21	Frontier
Serbia	Market	NSS	TCX	8/29/14 to 6/30/21	Frontier

## Credit Spreads

Table 2 presents LCCS, FCCS, LCCS-FCCS, the correlation of spreads, and depreciation of LC against USD. average LCCS is 0.70% for EMs, while the average FCCS is 1.55%. All nations display a positive LCCS. All countries, apart from Brazil, show a negative LCCS-FCCS. Brazil carries debt almost exclusively in LC, and previous studies have cited significant capital controls and jurisdiction risk (Du & Schreger 2016) as the cause of the high LCCS. Six of fourteen sample countries have an LCCS above one standard deviation, and all fourteen have FCCS above one standard deviation. The correlation remains positive between LCCS and FCCS for 12 countries. Positive correlation shows a similar movement in the spreads. The two countries with negative correlation, Turkey, and Indonesia, are also the two with deflationary pressure, i.e., the LCCS and FCCS move inversely.

**Table 2:** Emerging Market Statistics

Country	LCCS	FCCS	LCCS-FCCS	Depreciation	Country	LCCS	FCCS	LCCS-FCCS	Depreciation
Brazil	2.479	1.749	0.73	54.68%	Peru	0.264	1.074	-0.954	17.61%
Chile	0.492	0.745	-0.253	10.73%	Philippines	0.888	1.09	-0.211	3.61%
Colombia	0.993	1.5	-0.506	28.51%	Poland	0.418	1.484	-1.086	-3.22%
Hungary	0.812	2.133	-1.321	4.22%	Russia	0.727	1.777	-1.105	14.33%
Indonesia	0.053	1.659	-1.685	9.68%	South Africa	0.266	2.403	-2.119	-3.21%
Israel	0.631	0.874	-0.233	-15.64%	Turkey	0.324	3.109	-2.817	202.77%
Mexico	0.549	1.223	-0.674	9.12%	Uruguay	0.895	0.942	-0.047	43.00%
<b>Average (All countries)</b>	<b>0.699</b>	<b>1.554</b>	<b>-0.877</b>	<b>13.26%</b>					

The average LCCS in a previous study (Du and Schreger) was 1.45% from 2004-2014. In fact, of the ten countries studied in an earlier sample, every single LCCS has decreased. The same decrease did not happen for FCCS. Brazil and Turkey experienced an increase in FCCS. Overall, the experience over the past ten years is a positive one for borrowing sovereigns. After the Global Financial Crisis (GFC) a prolonged period of low interest rates forced many investors to EMs and FMs. The decrease in interest rates allowed many countries to issue debt at a lower cost, and increase the stock of LC debt (IMF, 2018). Most countries in the sample had a decrease in LCCS and FCCS, interpreted as a decrease in default risk. Hedging against FX risk will lower the yield of LC and FC debt and increase the debt capacity of the issuing sovereign.

Thus, a positive feedback loop can occur. The difference in spread over the past ten years could be explained by the increased liquidity of the market and demand for LC denominated bonds, forcing rates down. Hungary, Poland, and Russia are great examples of this trend (see appendix A).

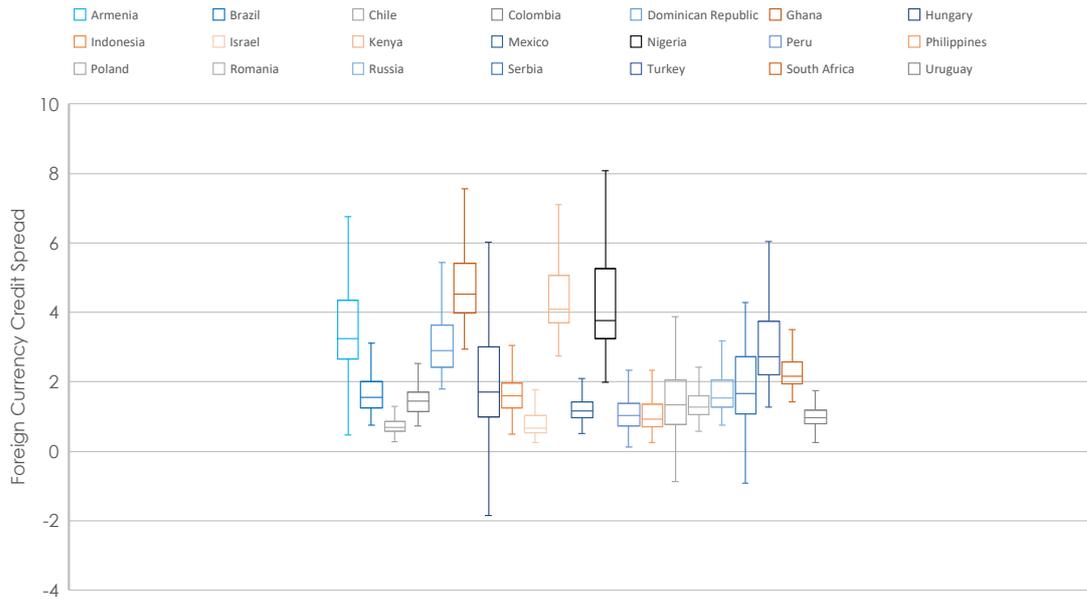
Table 3 presents the results from FMs. The average LCCS is 0.16%. FCCS is 3.3%. The average depreciation is 17.4%. Ghana, Kenya, and the Dominican Republic, the only three sovereigns in the dataset with a positive LCCS, have an FCCS of more than twice as high. When compared to EMs, the gap between LCCS and FCCS is more than triple. For nations where LCCS is positive, the opportunity to issue a greater share of LC with hedging against FX risk and increasing debt capacity is possible.

**Table 3:** Frontier Market Statistics

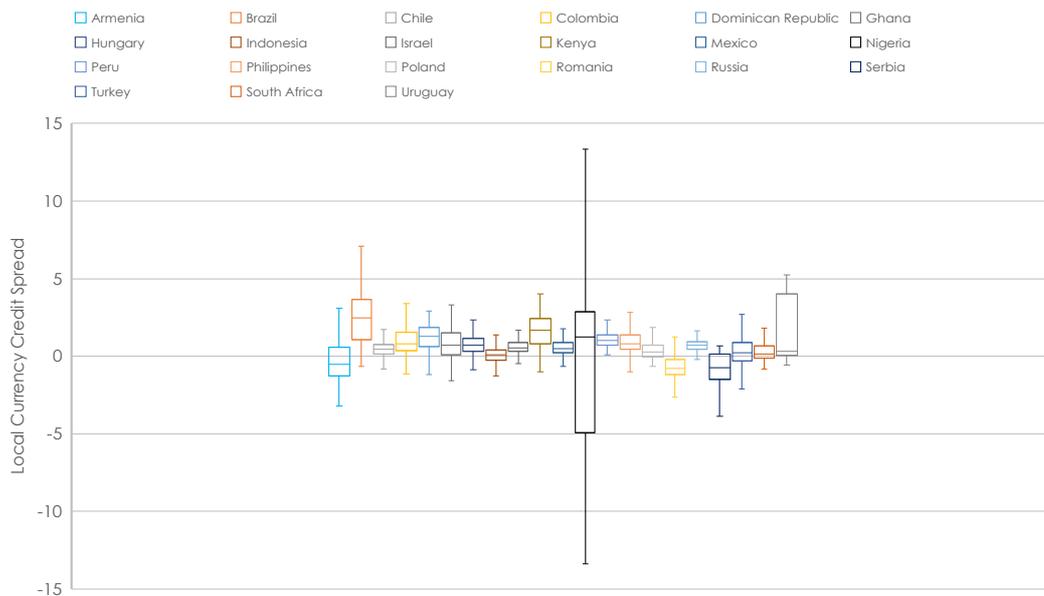
Country	LCCS	FCCS	LCCS-FCCS	Deprecation	Country	LCCS	FCCS	LCCS-FCCS	Deprecation
Armenia	-0.335	3.495	-3.811	4.17%	Nigeria	-0.666	4.299	-4.96	46.38%
Dominican Republic	1.044	2.9	-1.859	24.41%	Romania	-0.678	1.427	-2.01	1.92%
Ghana	1.003	5.033	-3.641	48.80%	Serbia	-0.849	1.84	-2.647	10.94%
Kenya	1.599	4.498	-2.903	6.77%	Average	0.16	3.356	-3.119	17.36%

Figures 3 and 4 give a visual of the distribution of LCCS and FCCS over the past 10 years. Most sample countries have averages and the majority of datapoints above zero, except for Nigeria. The data shows that for many EMs and FMs, returns are predictable and mostly above zero. Negative spreads occurred from 2013-2014 and during the 2020 COVID-19 pandemic because of a drop in nominal interest rates well below the average inflation rate. Negative credit spreads are uncommon, especially in more developed markets, but within this sample, they occurred during sudden stops of capital flows, currency devaluation (these are generally correlated events) and the COVID-19 shock.

**Figure 3:** Foreign Currency Credit Spread



**Figure 4:** Local Currency Credit Spread

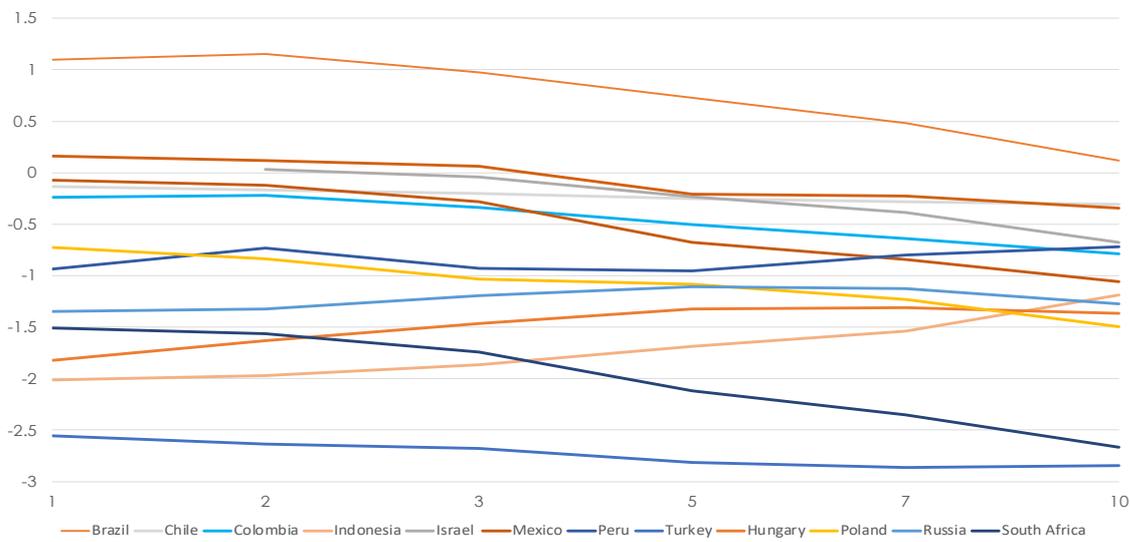


Figures 5 and 6 show LCCS-FCCS across bond maturities. For each country, the difference in spreads depends upon the maturity of the bond. Because the LCCS-FCCS is a function of two numbers, and each value can have upward and downward pressures, it is difficult to determine the changes without more significant analysis. The three nations whose currencies appreciated relative to the USD (Israel, Poland, and South Africa) see a continued decrease in LCCS-FCCS as maturity increases. In other words, the appreciation of LC decreases the real cost of debt, and debt capacity rises.

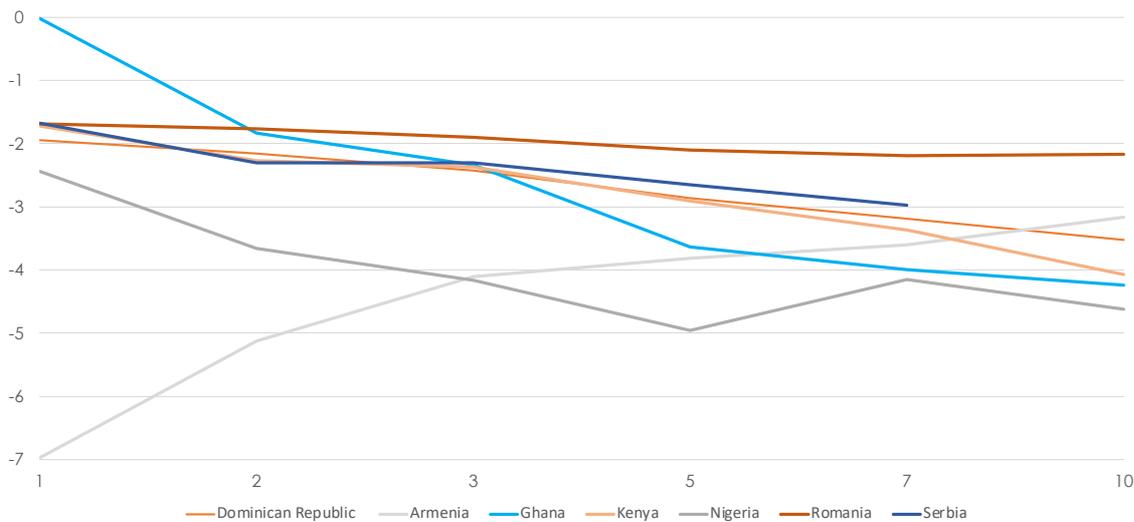
These figures should be of particular interest when examining new debt issuances or debt restructuring. Understanding which tenors will be best for issuing LC versus FC can lower the overall cost of debt. LC debt hedges against FX risk; however, any nation will still require a

certain amount of FC within the balance of payments to purchase goods from international markets. Debt issuance in short or long tenors should depend upon the relative spread of LC and FC. If managed properly, a nation can receive FC at its lowest possible cost of borrowing while not overexposing its portfolio to FX risk. Data from previous studies shows that LC bonds are typically issued in shorter tenors, and smaller in value, however, for most countries, the LCCS-FCCS is at its lowest in later tenors. The additional discount occurs because LC borrowing hedges against FX risk, and, in longer tenors, this hedges a more significant amount of FX risk. Thus, LC debt in the long term is enormously beneficial. Thus, many countries should consider issue in longer tenors, despite what trends in the market have indicated.

**Figure 5:** Emerging Market – Local Currency Discount Across Tenors (%)



**Figure 6:** Frontier Market – Local Currency Discount Across Tenors (%)



This report provides further evidence of the benefits of issuing debt in LC because of the lower observed yield and hedging FX risk. However, recent studies have shown that increasing LC debt has also caused adverse effects, namely, significant fluctuations in capital flows and increased volatility caused by the increase in foreign investors (Bertaut et al., 2021) (Lizarazo, 2013). LCCS and FCCS were subject to regression analysis with a measure in global volatility (VIX) and principal component analysis to test these claims. In sum, the evidence suggests that large capital fluctuations can occur in EMs; however, issuing LC debt can reduce exposure to global volatility. In FMs, the benefits are more significant. LC debt reduces exposure to global volatility, and LCCS is less sensitive to global shocks.

Table 4 shows that for EMs, LCCS is more isolated from changes in global risk than FCCS. The VIX has a more significant impact on FCCS (23.49% on average) than LCCS (5.08%) for 13 of 14 EMs; Poland was the only exception. A 1% increase in global volatility is associated with an average 0.03% decrease for LCCS and a 0.37% increase for FCCS. Brazil and Poland were the only markets in which LCCS increased more than FCCS with a rise in volatility. Table 5 shows that for FMs, LCCS is also more isolated from global risk than FCCS. A 1% increase in volatility is associated with a 0.05% decrease in LCCS, and the FCCS increases by 0.06% with each 1% increase in the VIX. The VIX had a more significant impact on FCCS (24.15%) than LCCS (6.31%). For both EM and FM countries, LCCS does not rise due to an increase in volatility.

**Table 4:** Regression Against the VIX Index (\* denotes statistical significance)

Country	LCCS	LCCS R <sup>2</sup>	FCCS	FCCS R <sup>2</sup>	Country	LCCS	LCCS R <sup>2</sup>	FCCS	FCCS R <sup>2</sup>
Brazil	0.0327*	0.0241	0.0264*	0.0747	Peru	0.0201*	0.0578	0.0293*	0.2958
Chile	0.0138*	0.0364	0.0251	0.4609	Philippines	0.0041	0.0014	0.0354*	0.2457
Colombia	0.0416*	0.1172	0.043	0.4207	Poland	0.0328*	0.0599	0.0287*	0.0564
Hungary	-0.0103*	0.0105	0.0406*	0.0375	Russia	0.005*	0.0079	0.0162*	0.0228
Indonesia	0.0012	0.0002	0.0249*	0.0849	South Africa	0.0328*	0.1848	0.0654*	0.4553
Israel	0.0212*	0.1043	0.0225*	0.1391	Turkey	0.0101*	0.005	0.0901*	0.2763
Mexico	0.0118*	0.0387	0.0413*	0.5184	Uruguay	-0.642*	0.0635	0.0218*	0.1998

**Table 5:** Frontier Market Against the VIX Index (\* denotes statistical significance)

Country	LCCS	LCCS R <sup>2</sup>	FCCS	FCCS R <sup>2</sup>	Country	LCCS	LCCS R <sup>2</sup>	FCCS	FCCS R <sup>2</sup>
Armenia	-0.0352*	0.0544	0.0408*	0.0976	Nigeria	-0.2102*	0.1052	0.1550*	0.5076
Dominican Republic	-0.0493*	0.1655	0.0800*	0.4340	Romania	0.0265*	0.0390	0.0221*	0.0790
Ghana	-0.0446	0.0084	0.0626*	0.2563	Serbia	-0.0444*	0.0669	0.0079*	0.0026
Kenya	-0.0072	0.0022	0.0869*	0.3133					

Evidence from the dataset does confirm that LC debt markets tend to move in greater unison than FC. Thus, in the face of global booms or busts, LC markets are procyclical in EMs. The procyclical nature coincides with previous studies measuring increased capital flows in LC debt markets. Similar cross-country movements in EMs occurred for 70.15% of the total data. By contrast, for FCCS, this is 61.37%.

FMs have flipped results. In these markets, insulation is greater for LC debt. Cross-country movement for LC debt occurred for 75.43% of the data. FC debt moved similarly for 85.19% of the data. FMs have an overall increased risk compared to EMs. However, LC debt seems to be a better choice to avoid large fluctuations in capital flows and movement in credit spread.

## Policy Implications and Conclusions

We document empirical evidence that points towards opportunities for sovereign debt management offices (DMOs) by increasing the share of LC in debt portfolios which is likely to decrease the overall yield and reduce exposure to global volatility. This also has powerful side effects:

1. It creates a deeper market for the sovereign's debt and currency and increases liquidity. Lowering FX risk can cause positive feedback loops by further improving debt capacity, reducing the cost of issuing debt in LC and FC. This in turn gives greater flexibility to the exchange rate and supports floating exchange rate and inflation targeting.
2. Carrying debt in both LC and FC can reassure investors of a commitment to low inflation and stable exchange rates. Inflation would cause the FC debt stock to become more expensive, while any significant appreciation of the exchange rate will cause LC debt to become more expensive and depreciation will increase FC debt costs.



Currency risk markets have an important role to play in offering additional policy and risk management options. TCX Fund offers NDS contracts in over 75 currencies. These instruments allow for investors to invest in FC and the borrowing nation to receive in LC. Sovereigns can receive all the benefits of LC debt issuance outlined in this paper, while investors have a perfectly hedged investment. The decrease in risk held by investors will make large movements in capital less likely. Other than the reduction in risk, NDS contracts 'lock' both parties into the contract, thus imposing an alternative 'capital control' of sorts.

DMOs, central banks, and finance ministries face a complex market with an increasing role on external factors causing currency and economic crises. This report shows issuing LC debt is an important tool for managing FX risk, while also decreasing exposure to global volatility. This is especially true for LC debt with longer maturities. Expansion of these markets can be done from a supply-and-demand point of view. Many countries examined do not offer LC debt beyond 10 years, and most of the debt is denominated in much shorter tenors than that. Supply to the market is the first step, this involves gaining the technical capacity to manage FX risk. Second, working with multilaterals and various development funds of the demand side. The fact that debt investors can take perfectly hedged positions and remain profitable is remarkable. These risk-free opportunities should be very attractive to development banks, NGOs, and multilaterals. DMOs should encourage international investors towards these longer maturity LC securities, via tax policy or capital controls on inflows.

Significant risks remain in international finance. This report indicates that LC debt moves in greater unison than FC. As financial markets become more integrated and exogenous shocks have big implications for small, previous insulated nations, this is of big concern. Capital controls and the use of NDS contracts can certainly help mitigate some of these risks. However, the significance of these controls is extremely dependent upon the context of the country. It does seem possible, at least in theory, to have all the benefits of an integrated financial market with access to long term borrowing, without bearing increased foreign exchange and capital flow risk.

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## Author Details:

Toph Cottle is a master's Student at Johns Hopkins SAIS and University of London SOAS. He is focusing his students on international finance, particularly capital flows, and sovereign debt management. Contact details are found below for any inquiries concerning the dataset, methodology, or results.

Toph Cottle

1631 east 1030 north

Logan Utah, 84341 USA

[tophqcottle@gmail.com](mailto:tophqcottle@gmail.com)

+1-435-294-6007