VIEWPOINT
Diaspora bonds for funding education

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Abstract

Diaspora bonds represent a debt instrument issued by a country – or potentially a private corporation – to raise financing from its overseas diaspora. They offer governments a flexible mechanism for raising large scale funding to support national budgets and fill financing gaps in development programs, including provision of quality education. However, there is limited awareness about this financing vehicle. While India and Israel have been at the forefront in issuing diaspora bonds, many other nations also have large diaspora communities in the world and could benefit by issuing such bonds. Given the interest of the global education community in innovative approaches to financing, diaspora bonds could be an important source of funding. The paper proposes a pilot program for funding via diaspora bonds a medical school in a developing country with a large and skilled diaspora abroad.

Keywords: Diaspora bonds, funding education, India, Israel.

Introduction

The Millennium Development Goals (MDG) as well as the UNESCO led Education for All (EFA) movement aspire to achieve universal primary education while eliminating the gender gap at all levels of education by 2015. The EFA's Global Monitoring Report (GMR) has identified a funding gap of $11 billion per year if MDGs and EFA goals in basic education are to be met. This funding gap is some three-times the current level of Overseas Development Assistance (ODA) for education.[1] Ultimately, therefore, it will be necessary to adopt innovative approaches for generating funding if governments are to meet the targets for inclusive and quality education. Diaspora bonds represent one such mechanism that can enable developing countries to borrow from their expatriate (diaspora) communities.[2]

A diaspora bond is a debt instrument issued by a country – or potentially a private corporation – to raise financing from its overseas diaspora. They offer governments a flexible mechanism for raising large scale funding to support national budgets and fill financing gaps in development programs. For exam-

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[1] Burnett and Bermingham (2010) provide an excellent survey of financing needs of basic education in developing countries as well as a set of innovative financing mechanisms. They mention diaspora bonds, but without providing any detailed analysis.

[2] See, in particular, Chapter 3 in Ketkar and Ratha (2009a). A broader discussion of innovative market-based financing mechanisms is provided in Ketkar and Ratha (2009b).

ple, Israel annually since 1951 and India on three occasions since 1991 have resorted to issuing diaspora bonds, raising nearly US$44 billion to date. The Government of Israel has offered a flexible menu of diaspora bonds to keep the Jewish diaspora engaged. The Indian authorities, in contrast, have used this instrument for balance of payments support, to raise financing during times when they had difficulty in accessing international capital markets. While India and Israel have been at the forefront in issuing diaspora bonds, many other nations also have large diaspora communities in the world and could benefit by issuing such bonds. Given the success of diaspora bonds in raising large scale funding and the interest of the global education partnership in innovative approaches to financing, diaspora bonds could be an important and innovative source of financing.

The paper is organized as follows. We begin by briefly elaborating on the rationale for countries to issue, and for diaspora communities to purchase, diaspora bonds. We then compare and contrast the Israeli and Indian approaches to the issuance of diaspora bonds and draw lessons for potential issuers of such bonds. Later, we present evidence on the strength of diaspora communities around the world and assess the prospects of various developing countries selling bonds to their diaspora communities. The adaptations needed to raise funding for education via diaspora bonds are taken up in the following section. Before summarizing our conclusions, we present design for one hypothetical education project that we believe will prove attractive to diaspora investors.

Rationale for diaspora bonds

Diaspora bonds can be an attractive vehicle for countries to secure a stable and inexpensive source of external finance. Since diaspora purchases of bonds issued by their country of origin are likely to be driven by a sense of patriotism and the desire to contribute to the development of the home country, such bonds are likely to be in demand in fair as well as foul weather. Indeed, the purchase of bonds issued by Israel rose during the six-day war in 1967. Similarly, India was able to raise funds from its diaspora in the wake of the balance of payments crisis in 1991 and again following the nuclear testing in 1998 when the country faced sanctions from the international community. Also, as discussed further below, the diaspora may provide a "patriotic" discount in pricing these bonds. The Israeli experience, and to a lesser extent the Indian experience, are in keeping with this hypothesis.

Yet another factor that might play into the calculus of a diaspora bond-issuing nation is the favourable impact it would have on the country's sovereign credit rating. By making available a reliable source of funding that can be availed in good as well as bad times, the nurturing of the diaspora bond market may improve a country's sovereign credit rating. Credit rating agencies believe that Israel's ability to access the worldwide Jewish diaspora for fund-

ing has undoubtedly supported its sovereign credit rating.[3] But the rating agencies do not view this source of funding as decisive. Standard and Poor's (S&P), for example, cites Israel's inability to escape painful adjustment program in the 1980s in reaching this conclusion.[4] In other words, the availability of financing from the Jewish diaspora did not allow Israel to avoid a crisis rooted in domestic mismanagement. While the Jewish diaspora investors have stood by Israel whenever the country has come under attack from outside, they have not been as supportive when the problems were home-grown.

India's access to funding from its diaspora did not prevent the rating agencies from downgrading the country's sovereign credit rating in 1998 following the imposition of international sanctions in the wake of the nuclear explosions. Moody's downgraded India from Baa3 to Ba2 in June 1998 and S&P cut the rating from BB+ to BB four months later in October 1998. But the excellent reception which Resurgent India Bonds in 1998 and India Millennium Deposits in 2000 received in difficult circumstances has raised the relevance of diaspora funding to India's creditworthiness. Unlike Israel, however, India has not made diaspora bonds a regular feature of its foreign financing. Instead, diaspora bonds are used as a source of emergency finance. While not explicitly stated, India has tapped this funding source during times of balance-of-payments difficulties. India's ability to do so is now perceived as a plus.

Why would investors find diaspora bonds attractive? Patriotism and the "desire to give back" certainly play a role in investors purchasing diaspora bonds. The discount from market price at which Israel and India have managed to sell such bonds to their respective diaspora is reflection of the charity implicit in these transactions. Up to the end of the 1980s, Israel sold bonds with 10 to 15 year maturities to Jewish diaspora in the United States (and Canada to a lesser extent) at a fixed rate of roughly 4 per cent without any reference to changes in US interest rates. US 10-year yields over the same time period averaged 6.8 per cent, implying a significant discount to market. It is only in the 1990s that interest rates paid by Israel started to rise in the direction of market interest rates. While Indian diaspora offered little patriotic discount, it is important to note that they provided funding when the ordinary sources of finance had disappeared following the balance of payments crisis in 1991 and the nuclear testing in 1998.

Several other factors may also help explain diaspora interest in bonds issued by their country of origin. The principal among these is the opportunity such bonds provide for risk management. A significant risk associated with diaspora bonds is that the issuing country may be unable to make debt service payments in hard currency. But its ability to pay interest and principal in local currency terms is perceived to be much stronger. This can be an attractive feature of such bonds for diaspora investors. Typically, diaspora investors

[3] See the reports by Fitch (March 18, 2009), Moody's (January 2009) and Standard and Poor's (March 13, 2009).

[4] Conversation with S&P's credit analyst David Beers.

have current or contingent liabilities in their home country and hence may not be averse to accumulating assets in local currency. Consequently, they view the risk of receiving debt service in local currency terms with much less trepidation than purely dollar-based investors. Similarly, they are also likely to be much less concerned about the risk of currency devaluation.

Furthermore, the well documented home-bias which keeps investors' portfolios heavily concentrated in their home country assets (see French and Poterba, 1991; Tesar and Werner, 1998; and Ahearne *et al.*, 2004) is likely to apply to the case of diaspora investors. Since restrictions on international capital flows driving home-bias have lost much of their relevance in recent years, analysts have focused on alternative hypotheses. One such hypothesis contends that home investors have superior access to information about domestic firms or economic conditions (Pastor, 2000; Brennan and Cao, 1997; and Portes *et al.*, 2001). For members of the diaspora, such informational asymmetry may actually imply superior knowledge of firms and economic conditions in their countries of origin. In addition, diaspora members may have a comparative advantage in acquiring information about their countries of origin (Van Nieuwerburgh and Veldkamp, 2009).

Yet other factors supporting purchases of diaspora bonds include the satisfaction that diaspora investors gain from contributing to the economic development of their home country. Diaspora bonds offer investors a vehicle to express their desire to do "good" in their country of origin through investment. Furthermore, diaspora bonds allow investors the opportunity to diversify their assets away from their adopted country. Finally, diaspora investors may also believe that they have some influence on policies at home, especially on bond repayments. Whether such influence is real or imaginary is irrelevant. Diaspora members will be motivated to purchase diaspora bonds as long as they believe to have influence on policies.

Issuance of diaspora bonds: Israel versus India

Israel's diaspora bonds differ from India's in several ways (Table 1). Israel views its diaspora as a reliable source of external capital, and has tapped their wealth and goodwill year after year on a regular basis. Issuance over the past decade has averaged just over US$1 billion per year. India, however, has used diaspora funding only opportunistically when the balance of payments came under pressure. While Israel established the Development Corporation for Israel (DCI) to issue diaspora bonds, India relied upon the government-owned State Bank of India (SBI). Israel has always viewed DCI's diaspora bond issuance as a catalyst for economic development and growth.

Over US$32 billion in proceeds from such issuance has been used in transportation, energy, telecommunications, water resources, and other essential infrastructure projects. In contrast, India has turned to SBI to raise funding from Indian diaspora in times of weakness in the balance of payments. Thus, the SBI has tapped diaspora for funding on three separate occasions –

India Development Bonds (IDBs) following the balance of payments crisis in 1991 (US$1.6 billion), Resurgent India Bonds (RIBs) following the imposition of sanctions in the wake of the nuclear testing in 1998 (US$4.2 billion), and India Millennium Deposits (IMDs) in 2000 (US$5.5 billion).

Table 1: Comparison of diaspora bonds issued by Israel and India

Israel	India
Annual issuance since 1951	Opportunistic issuance in 1991, 1998 & 2000
Development oriented borrowings	Balance of payments support
Large though declining patriotic discount	Small patriotic discount, if any
Fixed, floating rate bonds and notes	Fixed rate bonds
1 to 20 year maturity with bullet repayment	Five year maturity with bullet repayment
Targeted towards but not limited to diaspora	Limited to diaspora
Direct distribution by DCI	SBI distribution in conjunction with international banks
Registered with U.S. SEC	No SEC registration

Source: Authors

The 4 per cent coupon as well as the yield on DCI's fixed-rate bonds from 1951 to 1989 was often far below the yields on 10-year UST notes. Thus, the Jewish diaspora initially provided a large patriotic discount to DCI. But the patriotic discount has dwindled in recent years. This is perhaps owed to the fact that younger Jewish investors are seeking market-based returns. More importantly, the decline in patriotic discount is also due to the availability of other Israeli bonds which trade in the secondary market and provide alternative avenues for acquiring exposure to Israel (Rehavi and Asher, 2004). In contrast to the Jewish diaspora, Indian investors provided little overt discount - interest rates and yields on the SBI-issued bonds were about the same as comparably rated U.S. corporate bonds. But the fact that the Indian diaspora purchased these bonds when India had lost its access to international capital markets suggests that the Indian diaspora in reality offered a large discount.

The Israeli and Indian approaches to diaspora bonds differ regarding the variety of instruments that were made available to the respective diaspora. SBI's Indian diaspora bonds were non-negotiable fixed-rate bonds with a five-year maturity. The minimum investment amount was US$2,000. While Israel's DCI also offered non-negotiable bonds, it provided a large menu of options-fixed and floating rate bonds and notes in denominations ranging from a low of US$100 to a high of US$1 million with maturities ranging from 1 year to 20 years. This is due in large measure to Israel's desire to build ties with the Jewish diaspora that go beyond raising development finance. While the DCI marketing efforts were targeted towards but not limited to the Jewish diaspora, the SBI restricted access to RIBs and IMDs to investors of Indian origin.

There are several possible explanations for limiting the size of the market. First, restricting the RIB and IMD sales to the Indian diaspora may have been a marketing strategy introduced in the belief that Indian investors would be more eager to invest in instrument that are available exclusively to them. Second, the SBI perhaps believed that the Indian diaspora investors would show more understanding and forbearance than other investors if India encountered a financial crisis. Having local currency denominated current or contingent liabilities, the Indian diaspora investors might be content to receive debt

Table 2: Countries with large diasporas abroad (sorted by high-skilled migrants)

		High-skilled emigrant stock (thousand)	Total emigrant stock (thousand)
1	Philippines	1,126	3,631
2	India	1,038	9,987
3	Mexico	923	11,503
4	China	817	7,258
5	Vietnam	506	2,225
6	Poland	449	2,316
7	Iran, Islamic Rep.	309	970
8	Jamaica	291	1,038
9	Russian Fed.	289	11,480
10	Ukraine	246	6,082
11	Colombia	234	1,969
12	Pakistan	222	3,416
13	Romania	176	1,244
14	Turkey	174	4,403
15	Brazil	168	1,135
16	South Africa	168	713
17	Peru	164	899
18	Dominican Rep.	155	1,069
19	Haiti	153	834
20	Nigeria	149	837
21	Egypt, Arab Rep.	149	2,399
22	Serbia	148	2,298
23	Morocco	141	2,719
24	Lebanon	138	622
25	El Salvador	128	1,129

Source: High-skilled migrants abroad in high-income OECD countries as of 2000 from Docquier and Marfouk (2004), and total migrants abroad in 2005 from Ratha and Shaw (2007).

service in rupees. A third explanation rests on the know-your-customer (KYC) principle: SBI concluded that it knew its Indian diaspora investor base well enough to feel comfortable that the invested funds did not involve money laundering.

A final difference between the Israeli and Indian approaches to diaspora bonds has to do with the US SEC registration. The DCI decided to seek SEC registration. But India went out of its way to avoid SEC registration even though it meant losing access to the retail US investor base. Generally, high costs, stringent disclosure requirements and lengthy lead times are cited as the principal deterrents to SEC registration. But these were probably not insurmountable obstacles for SBI. Perhaps an argument can be sustained, as in Chander (2001), to make SEC registration optional. Investors who value such registration highly will then be prepared to pay a price premium while unregistered bonds fetch lower prices (higher yields). In other words, the law and forum would then become another attribute of the security, which will influence its market price. Giving investors the choice of law and forum can be supported on efficiency grounds. Proposals giving such a choice to investors were floated towards the end of the 1990s (Romano, 1998; Choi and Guzman, 1998). But there is little chance of regulators allowing issuers to opt out of SEC registration. The inability to register with the SEC may, therefore, selectively limit the ability of some developing countries in placing diaspora bonds.

One common thread in DCI's and SBI's success with diaspora bonds was the in-house marketing capability. DCI sold its bonds directly to the Jewish diaspora. Its employees in the United States who maintain close contacts with Jewish communities in the various regions of the country so as to understand investor profiles and preferences. They host investor events in Jewish communities with the express purpose of maintaining ties and selling bonds. SBI's presence in the United States helped marketing of RIBs. Furthermore, where the Indian diaspora was known to favour specific foreign banks, such as the Citibank and HSBC in the Gulf region, SBI out-sourced to them the marketing of RIBs and IMDs. Not having their own marketing and distribution channels may, however, hamper the efforts of other countries in issuing diaspora bonds.

Potential for diaspora bonds to finance development

According to the World Bank statistics, the stock of emigrants from all developing countries stood at 145 million in 2005. High-income OECD countries (41.5%) and high-income non-OECD countries (11.5%) were destinations for 53% of all immigrants from developing countries (Table 2).

Table 3 presents data from the United States on the median annual income of employed immigrant adults of age 25 to 55 in 2008 sorted by their countries of origin. Immigrants to the United States from the listed 18 countries earned in 2008 median incomes above US$40,500. Their median incomes also exceeded the median income of employed prime working age *native born* adults in the United States.

Furthermore, preliminary World Bank estimates, based on bilateral migrant stocks for 2010 and conservative assumptions about migrant incomes

and saving rates, suggest that annual diaspora savings of developing countries could be in the range of US$400 billion in 2009 (Tables 4 and 5). Latin America and Caribbean generate the largest amount of savings, estimated at US$116 billion, followed by East Asia and Pacific at US$83.9 billion, Europe and Central Asia at US$72.9 billion, South Asia at US$53.2 billion, and Sub-Saharan Africa US$30.4 billion. The savings of diasporas from low-income countries amounted to US$34.4 billion, with Bangladesh, Haiti, Afghanistan and Ghana each generating estimated savings of US$2 billion or more in 2009.

Table 3: Median annual income of employed adults in US, aged 25-55, 2008

India	$61,103	Egypt	$42,772
South Africa	$61,103	Pakistan	$41,754
Sri Lanka	$56,011	Macedonia	$40,736
Iran	$50,919	Bulgaria	$40,736
Lebanon	$49,188	Belarus	$40,736
Malaysia	$48,883	Philippines	$40,736
Croatia	$43,791	Syria	$40,736
Romania	$42,772	Nigeria	$40,736
Turkey	$42,772	Ukraine	$40,532

Note: Includes only countries for which a sufficient sample is available and those above the median annual income of employed prime working age native born adults.
Source: Migration Policy Institute analysis of 2008 American Community Survey data.

Table 4: Estimated diaspora savings, developing regions

	Diaspora stock (millions)	Diaspora savings, 2009 ($ billions)	Diaspora savings as % of regional GDP
Diaspora savings of developing regions			
East Asia & Pacific	21.7	83.9	1.3%
Europe & Central Asia	43	72.9	2.8%
Latin America-Caribbean	30.2	116	2.9%
Middle East	9.3	18.9	3.5%
North Africa	8.7	22.3	4.3%
Sub-Saharan Africa	21.8	30.4	3.2%
South Asia	26.7	53.2	3.3%
Developing countries (total)	*161.5*	*397.5*	*2.4%*
Low income countries	*27.7*	*34.4*	*9.0%*
Middle income countries	*133.8*	*363.1*	*2.3%*

Source: Ratha and Mohapatra (2011).

Table 6 rank orders 55 developing countries by the volume of remittances received in 2009. Additionally, figure 1 shows that remittances from 32 countries exceeded $2,500 per emigrant that year. These 32 countries include 8 from Latin America and the Caribbean, 7 from Europe and Central Asia, 5 from East Asia and Pacific, and 4 each from South Asia, Sub-Saharan Africa, and North Africa and Middle East.

Table 5: Estimated diaspora savings, developing countries

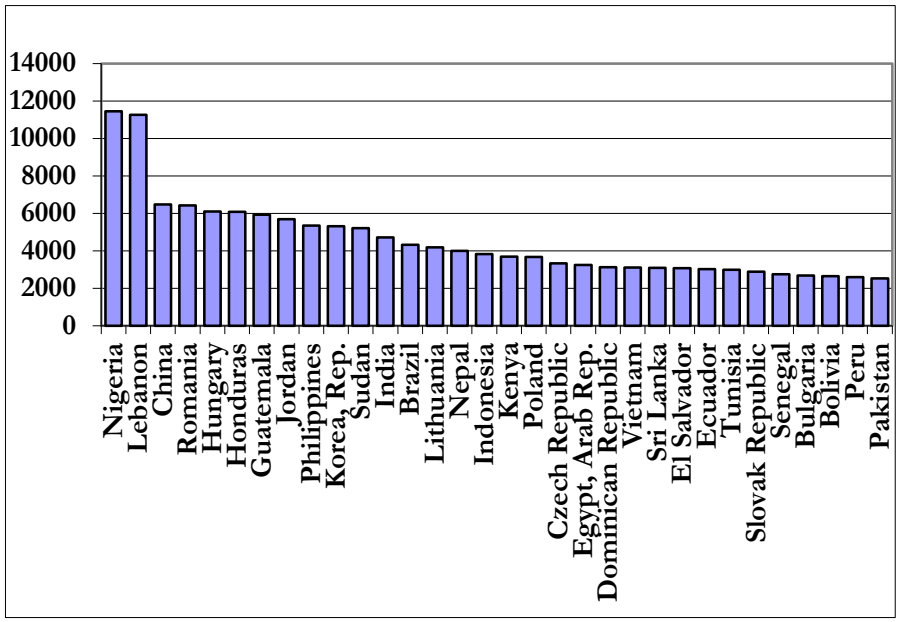
Low-income	Diaspora stock (mil.)	Diaspora savings, 2009 ($ bil.)	Diaspora savings as % of domestic saving
Bangladesh	5.4	4.6	29.9%
Haiti	1	3.7	..
Afghanistan	2.4	2.6	..
Ghana	0.8	2	85.4%
Ethiopia	0.6	1.9	157.1%
Kenya	0.5	1.8	78.1%
Somalia	0.8	1.8	..
Zimbabwe	1.3	1.6	..
Korea, Dem Rep.	0.3	1.4	..
Cambodia	0.4	1.3	73.4%
Lao PDR	0.4	1.3	..
Congo, D.R.	0.9	1.1	59.2%
Nepal	1	1	98.9%
Myanmar	0.5	0.8	..
Uganda	0.8	0.6	31.9%
Kyrgyz Republic	0.6	0.6	..
Liberia	0.4	0.6	..
Mozambique	1.2	0.6	264.6%
Tajikistan	0.8	0.5	..
Tanzania	0.3	0.5	..

Source: Ratha and Mohapatra (2011).

Table 6: Workers' remittance receipts of developing countries, 2009 (est.) (US$ mil).

India	47,000	Guatemala	4,065	Thailand	1,845
China	46,989	Jordan	3,650	Tajikistan	1,815
Mexico	22,870	El Salvador	3,460	Kenya	1,572
Philippines	19,411	Dominican Rep.	3,344	Croatia	1,572
Bangladesh	10,431	Ecuador	3,078	Slovakia	1,500
Nigeria	9,585	Sudan	3,059	Albania	1,495
Pakistan	8,619	Nepal	3,010	Moldova	1,491
Poland	8,500	Korea, Rep.	2,924	Yemen	1,413
Romania	8,000	Sri Lanka	2,892	Czech Rep.	1,395
Egypt	7,800	Hungary	2,872	Israel	1,363
Lebanon	7,000	Bosnia and Herzegovina	2,627	Lithuania	1,339
Vietnam	6,901	Honduras	2,525	Turkey	1,336
Indonesia	6,639	Bulgaria	2,503	Senegal	1,276
Morocco	5,720	Peru	2,328	Haiti	1,220
Russian Fed.	5,506	Algeria	2,193	Bolivia	1,109
Serbia	5,438	Jamaica	1,921	Azerbaijan	1,087
Brazil	4,910	Malaysia	1,900	Iran	1,072
Ukraine	4,472	Tunisia	1,860	Kyrgyzstan	1,011
Colombia	4,273				

Figure 1: Countries with remittances exceeding $2,500 per emigrant, 2009



Source: Migration and Remittances Database, World Bank. Updated data can be accessed at the Bank's latest Migration and Remittances Factbook 2011.

All in all, emigrants from developing countries appear to possess the ability to purchase bonds issued by their countries of origin. But leaving aside Israel and India, the actual issuance of diaspora bonds remains meagre to date. At least two factors contribute to this outcome. First, there is limited awareness about this financing vehicle. Governments and other entities are often deterred by the complexities of bond instruments.[5] In view of this, many developing country policymakers would certainly benefit from technical assistance aimed at improving their understanding of structuring diaspora bond offerings, registering them with regulatory agencies such as the US SEC, and whether or not such instruments need to be rated by rating agencies. Not only are potential issuers uninformed about diaspora bonds, market players and regulators in the developed destination countries are also unfamiliar with these bonds. Second, many countries still have little concrete appreciation of the capabilities and resources of their respective diaspora. As a recent World Bank

[5] Lacking the capacity to undertake bond issuance, they take the easy way out of depending upon national banks to generate local and foreign currency deposits (LCDs and FCDs) from diaspora investors. While FCDs attract foreign currency inflows, these can be withdrawn at any time. Therefore, FCDs are likely to be much more volatile, requiring banks to hold much larger reserves against their FCD liabilities, thereby reducing their ability to fund investments. All bonds, including those targeted at the diaspora, in contrast, are long-term (until maturity) in nature. Hence, the proceeds from such bonds can be used to finance investment with some predictability.

survey by Plaza (2009) pointed out, few governments have a complete mapping of their diaspora. Data on diaspora are mainly based on those who register with embassies. But such registration is incomplete, at best. Furthermore, there is little coordination at the embassy/consular level when dealing with diaspora. As a result, many governments do not know where their diaspora live. They also have little knowledge of how much their diaspora earn, save and invest. But this is beginning to change. With remittances becoming an increasingly important source of finance, countries are now becoming more and more interested in tracking their diaspora.

Adapting diaspora bonds for funding education

The presence of large numbers of highly skilled and well off diaspora in high-income destinations from many developing countries should allow them to consider the issuance of diaspora bonds. But persuading diaspora investors to purchase such bonds for funding education may require building several credit enhancements and/or investor protections in the bond structures, especially if investors lack faith in the developing country governments' ability to spend wisely and earn an adequate return on investment. When investors harbour concerns about a country's ability to service debt in a timely fashion, appropriate credit enhancements may be required. Such enhancements could come in the form of securitization of existing or future flow assets.[6] They could also incorporate partial (or total) guarantees from a reputable donor agency that the bond holders will receive coupon payments and principal repayments on time. Investor concerns about governance could be addressed by including conditions on how educational investments are managed as well as by providing incentives for countries to produce the desired results. The extent of necessary credit enhancements and investor protections would depend upon the degree of concerns harboured by potential diaspora investors. Thus, a country with poor governance record (particularly in post conflict and fragile states) may need many more protections than a country with better governance track record.

Lacking existing assets to securitize, several developing countries have securitized future-flow receivables, though not specifically to support the issuance of diaspora bonds. Data compiled from the three rating agencies (i.e. Fitch, Moody's and Standard and Poor's) show that developing countries have raised more than US$80 billion over the past twenty years using future-flow securitization. State-owned and private banks in countries such as Brazil, Mexico, Turkey and others have accounted for about 45% of this total by securitizing workers' remittances, credit card vouchers, and diversified payment rights (DPRs) which include all hard currency receivables that come through

[6] Securitization allows issuers of debt to provide existing or future-flow assets as collateral for debt thereby giving investors an additional degree of comfort. Future-flow assets can be, for instance, hard currency receivables from exports of goods and services. For details on the use of securitization, see Ketkar and Ratha (2009b).

the Society for Worldwide Interbank Financial Telecommunication system. Oil companies like Mexico's Pemex and Venezuela's PDVSA, among others, have made up another one-third of the total issuance. It should be possible to use similar future-flow securitizations specifically in support of diaspora bonds to enhance their creditworthiness.

The partial (or total) servicing guarantees could come from multilateral or bilateral donor agencies, or from foundations. Such donor guarantees would permit leveraging of small amounts of donor contributions into much larger diaspora bond issuance.

Note that global private aid to developing countries amounted to US$19.6 billion in 2008, according to the Center for Global Prosperity (2010). Of this amount, some US$4.3 billion came from independent, community, and grant-making operating foundations in the United States; the rest from non-U.S. private donors. Health and medical services accounted for 52% of all international grant dollars from U.S. foundations, followed by democracy and governance at 23% and economic growth and trade at 16%. Education accounted for only 4% of grant funds. If similar aid allocations held at the global level, some US$784 million (US$19.6 billion times 0.04) are available annually for funding education. Assuming that all of this grant money could be used to provide guarantees on an annual rolling basis for 10 years, developing countries could raise nearly US$5 billion in bond funding to invest in education.[7]

Investor protection has not been a major concern in the use of diaspora bonds by Israel and India as both of these countries are strong states with a proven track record of successful public investments for decades. However, additional measures of protection may be required in some countries, especially for those with weak education governance capacity, to build and strengthen investors' faith in the country's ability to spend money wisely. Beyond the immediate goal of persuading diaspora investors, these new measures should also contribute to advancing the situation vis-à-vis aid effectiveness.

Three alternative mechanisms could be used to disburse education funds provided by diaspora investors. The first is a conventional approach and similar to experiences of Israel and India, entailing the transfer of funds to a state agency such as the treasury, central bank or a development agency, and management of funds by such a state agency. It is expected that these states will use national financial management and procurement systems required for public investments. In theory, these systems are expected to prevent corruption while ensuring quality and timely delivery of results. In practice, rigorous compliance to these systems would be subject to national monitoring and accountability mechanisms. Moreover, governments could provide periodic reports to investors on the progress of educational investments. As tangible

[7] This calculation is based on Gelb and Ratha (2009).

results of investment programs are delivered, confidence of diaspora investors could increase, contributing to the success of subsequent bond sales.

A second approach would be necessary in countries where robust financial management, procurement and education governance capacities do not yet exist. Additional resources generated through diaspora bonds could be channelled in such countries to the existing development funds in the country as detailed in table 7. These funds, such as Multi-Donor Trust Funds, Education Pooled Funds and Catalytic Fund Commitments, are often managed in partnership between a government and its development associates. These partnerships are constructed in a way to adhere to internationally recognized aid effectiveness principles. Governments are still the owners of the whole process and the funds are spent in line with national sector strategies and plans. They are also involved in managing these funds and in building capacity by supporting project implementation units or sector coordination units.

Table 7: Existing donor funding modalities for different DAC categories

DAC Category	Most appropriate existing donor funding modalities	Disbursements channel
Deteriorating	Project support; humanitarian aid	Through donors, NGOs or UN agencies
Arrested development	Project support; humanitarian aid	Through NGOs or UN agencies
Post-conflict reconstruction	Mixture of projects, Multi-donor Trust Funds (MDTF), budget support and pooled funding	Through UN agencies, MDTFs managed UN or World Bank, donor-managed pooled funding or individual projects
Early recovery	Budget support and pooled funding	Through pooled funding or direct budget support managed by recipient government

Source: Brannelly and Ndaruhutse (2008).

International assessments identify multi-donor trust funds as the best practice funding mechanisms in post-crisis situations. These have advantages in terms of spreading fiduciary risks, reducing the costs both for donors and recipient countries, and providing early delivery of urgent aid (UNESCO, 2010). The Liberia Education Pooled Fund, for example, was acknowledged by the OECD DAC Survey as an instrument to deliver aid in a more harmonized way in support of the Government's education priorities and presented as a 'fit-for-purpose' and flexible aid modality that has helped to increase implementation results by UNICEF during the INEE Global Consultations in 2009.[8]

[8] OECD (2009) and INEE (2009), cited in Schmidt & Taylor (2010).

These sorts of advantages could be very useful in building confidence among potential investors. Giving diaspora communities a significant role in the way education projects are managed and resources are spent could serve as an alternative method of building confidence. Such an arrangement should be particularly useful in a country with weak governance track record.

A third way of configuring diaspora bonds especially in fragile and conflict-affected states is by establishing new and innovative mechanisms for delivering financing. Such states could build investors' confidence by establishing new, robust and autonomous agencies and engaging non-governmental actors in their governance. For example, Bold, Collier and Zeitlin (2009) propose Independent State Authorities (ISA) as a new modality for the provision of social services in fragile states. ISA is primarily conceived as an implementing agency for government policy in the delivery of basic services. It is considered most appropriate in situations where needs are acute yet channels of public service provision have largely broken down. The ISA idea tackles challenges of restoring public service ethos in government ministries. It seeks to re-establish accountability in resource allocation and coordination, and remove weaknesses in NGO operations. Such a new entity could potentially attract diaspora investors by providing non-fiduciary protections as well as prospects for progress in their countries of origin.

There are other ideas, such as Cash on Delivery Aid (Birdsall & Savedoff, 2010), which could be included in this discussion.[9] That would require countries to issue bonds against achieved and independently validated results, for example the number of pupils who finish primary school and reach a minimum level of achievement. Another way of creating incentives for countries to use wisely the funds generated by issuing diaspora bonds is by promising to assume some of their debt servicing obligations. For example, a bilateral or multilateral aid agency or a donor foundation could provide incentives for countries to eliminate corruption and adopt best management and governance practices by agreeing to pay a large per cent of the principal repayments as they fall due.

Finally, table 8 classifies all 55 developing countries in Table 6 on the basis of credit enhancements and investor protections that may be necessary for selling diaspora bonds. These classifications use S&P's sovereign credit ratings and Transparency International's corruption perception index (CPI).[10] S&P's credit ratings range from AAA (most creditworthy) to C (least credit creditworthy). Countries rated BBB- to AAA are investment grade while those rated C to BB+ are speculative grade. While the former may not require significant credit enhancements, the latter would definitely benefit from credit enhance-

[9] EFA Global Monitoring Report 2010 touches on problems this model poses (UNESCO 2010).

[10] Algeria, Haiti, Kyrgyz Republic, Moldova, Nepal, Tajikistan and Yemen are not rated by S&P. Shadow ratings developed by Ratha *et al.* (2010) are used in place of the missing S&P ratings.

ments. Similarly, countries with high levels of perceived public sector corruption (i.e. those receiving CPI scores below 3 are expected to need significant investor protections while those with low perceived corruption (CPI of 5 or above) may not be required to provide any investor protections to make their bonds attractive to diaspora investors. Thus, countries like Poland, South Korea, Hungary and Israel are unlikely to need any credit enhancements or investor protections. But some 21 countries from the Philippines to Kyrgyz Republic that are rated speculative grade and also perceived to be highly corrupt may require significant credit enhancements as well as investor protections. The country groupings in table 8 are indicative rather than definitive. In the ultimate analysis, the types of necessary credit enhancements and investor protections should be determined in close consultation with diaspora communities.

Table 8: Credit enhancements and investor protections for country groups

Country Groups	**Credit Enhancements and Investor Protections**
Investment Grade Countries with low corruption*	Poland, South Korea, Hungary and Israel **No credit enhancements or investor protections**
Investment Grade Countries with medium corruption**	India, China, Mexico, Morocco, Brazil, Bulgaria, Peru, Malaysia, Tunisia, Thailand, Croatia, Slovak Republic, Czech Republic and Lithuania **No credit enhancements and few investor protections**
Investment Grade Countries with high corruption**	Russia and Algeria **No credit enhancements but some investor protections**
Speculative Grade Countries with low corruption*	Jordan **Some credit enhancements but no investor protections**
Speculative Grade Countries with medium corruption**	Romania, Serbia, Colombia, Guatemala, El Salvador, Dominican Republic, Sri Lanka, Bosnia and Herzegovina, Jamaica, Albania, Moldova, Turkey and Senegal **Some credit enhancements and some investor protections**
Speculative Grade Countries with high corruption***	Philippines, Bangladesh, Nigeria, Pakistan, Egypt, Lebanon, Vietnam, Indonesia, Ukraine, Ecuador, Sudan, Nepal, Hondurus, Tajikistan, Kenya, Yemen, Haiti, Bolivia, Azerbaijan, Iran and Kyrgyz Republic **Significant credit enhancements and significant investor protections**

** Corruption Perception Index (CPI) of 5 or above*
*** CPI of 3 and above but below 5*
**** CPI below 3*

A case study: Funding of a medical school

Benefits from investment in primary and even secondary education are highly diffused, indirect, and accrue after a prolonged gestation period. Furthermore, the benefits are in local currency. Hence, the government of a borrowing country will have to provide commitment to service diaspora bonds issued to obtain funds for investment in primary and secondary education. If the government commitment is credible, then the marketing of diaspora bonds would be feasible. If the government were to lack the necessary credibility, then either credit enhancements or investor protections would be warranted as discussed in the preceding section. Diaspora bonds to finance technical and higher professional education, however, could be structured to make them attractive to diaspora investors. We sketch below a potential project – a college to train physicians in a developing country or region – to be funded with proceeds from the issuance of diaspora bonds.

It is believed that a vast majority of diaspora in the United States is keen that their children become physicians.[11] But the number of seats available in the U.S. medical schools is limited. Some of the excess demand spills over into several overseas medical schools (including those in the Caribbean and a few European countries) that are accredited in the United States. Our proposal would seek to establish such an accredited medical school is a developing country or region suffering from shortage of physicians. Qualified children of diaspora members from that country/region would be encouraged to apply to that institution. The costs would be comparable to those in the United States; i.e. US$30,000 per year or US$120,000 for four years.[12] If 50 children of diaspora are admitted to this medical school every year and assuming attrition of 10 students after the first year and 5 students each year thereafter, the steady-state tuition revenues per year will total US$4.65 million.

The true cost of providing medical education is expected to be much smaller in a developing country/region. The cost of training a physician in several African countries, for instance, is estimated at US$5,000 to 10,000 per year (Hagopian *et al.*, 2005). Even at the top of this estimate range, the steady-state cost would amount to US$1.55 million. Add to this the cost of training 25 local students who will be admitted tuition-free every year as an incentive for the developing country/region to issue diaspora bonds. Assuming attrition among local students of 5 after year one and 3 and 2 after years two and three,

[11] While the evidence supporting this belief is largely anecdotal, it is noteworthy that in 2010, Asians made up 22% of 79,070 students registered in U.S. medical schools (AAMC 2010).

[12] The average cost for an unmarried first-year student at the Harvard Medical School is reported at approximately $70,000 for the 2010-2011 academic year. This estimate includes tuition, health service fee and insurance premium, room and board, books, travel, transportation to clinical sites, laundry, and incidentals. Of this total amount of US$70,000, roughly US$50,000 per year is for tuition and related expenses excluding lodging and boarding. Admittedly, the Harvard Medical School is one of the most expensive institutions in the country and other facilities are somewhat less expensive. For the purpose of our illustration, we put the annual cost at US$30,000 or US$120,000 for four years.

respectively, the steady-state cost of training local students would amount to US$0.77 million. Thus, the total cost of training all students would be US$2.32 million. That would still leave a surplus of US$2.33 million per year. At 5% coupon rate, this surplus should support debt of US$46 million into perpetuity.

Thus, the diaspora bond issuing country/region will be able to train 15 to 25 physicians at no cost. Of course, there is no guarantee that the non-diaspora physicians would stay put after graduation; they too may want to migrate.[13] But they can be required to serve locally for a minimum of five years or else reimburse the medical school for the cost of their training. The five-year movement restriction appears adequate to compensate for the cost of training physicians in view of the common two-year restriction that most developing countries are known to impose on their highly trained personnel. Brazil's National Council for Scientific and Technological Development, for example, awards scholarships for study abroad requiring that students reside in Brazil following their studies for as many years as the years on scholarship. The Turkish government also sponsors doctoral research abroad and requires the recipients to spend no more than two years in Turkey following graduation (Clemens, 2011). In addition, the migrating physicians often provide large amounts in remittances, a benefit which we are not counted upon at this stage.

Other variations on this basic theme are possible. Instead of training local students tuition-free in the medical school, the amounts raised by securitizing excess tuition collection could be used to fund basic education. In the absence of local students in the medical school, the excess tuition collection would be as much as US$3.10 million per year in the illustration developed above. Again, at 5% coupon, this surplus should support debt of US$62 million into perpetuity which could then be used to support basic education. This program and others like it can be scaled up over time to more diaspora funding for basic education.

Conclusion

It is widely recognized that multi-lateral, bi-lateral and private sources of finance are grossly inadequate to achieve universal primary education and gender equality at all levels of education in developing countries any time soon. Innovative mechanisms to raise finance for the purpose, therefore, are required. Bonds sold by developing countries to their respective diaspora – the so-called diaspora bonds – are one such mechanism. Israel and India have placed diaspora bonds on many occasions raising billions of dollars. Many other developing countries also boast large and well off diaspora communities in North America and Europe. But many developing countries have speculative grade sovereign credit ratings and high levels of perceived corruption.

[13] Chapter 3 of Ratha et al. (2011).

While these characteristics can often hamper their ability to sell diaspora bonds, it should be possible to devise appropriate credit enhancements and investor protections to make diaspora bonds attractive to potential investors. Table 8 presents tentative country groups requiring different levels of credit enhancements and investor protections. Support from official donors and foundations would help in designing the requisite credit enhancements and investor protections. It would also help raise awareness among policy makers in developed and developing countries alike that diaspora bonds are a potentially powerful mechanism for raising development finance for promoting education as well as other infrastructure projects. A potential project requiring few credit enhancements and investor protections is a medical school for the children of diaspora. The numbers suggest that a developing country/region could raise US$45 million and provide medical training to a couple of dozen local residents every year totally cost free.

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