Sovereign Wealth Funds and Long Term Investments in Infrastructure: Why the glaring absence?[1]

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Abstract

The imbalance in the savings glut between sovereign wealth funds, other long term investors such as pension funds and insurance companies, and the dire need for global infrastructure investment is formidable, and yet the root causes for market failure of this nature are insufficiently understood and therefore ill addressed. By analyzing the underlying issues behind the glaring mismatch, the creation of an independent Global Infrastructure Investment Platform (GIIP) is proposed, in order to provide policy solutions for existing roadblocks to infrastructure investments, both from the perspective of host countries, as well from an investor perspective. In doing so, various formulations of governance policies and operation models for the GIIP are put forward to be able to serve as an effective independent special purpose entity.

In recent years, a troubling imbalance has bedeviled economists. A seeming global savings glut has ballooned, and generated largely by sovereign wealth funds from emerging market regions in Asia and the Middle East that export manufactured goods or commodities. At the same time, there has been a massive rise in the need for infrastructure investment,

[1] The core of the discussion regarding the GIIP is drawn from an earlier paper, presented by Arezki,R; Bolton, P., Samama, F., and Peters, S., in Bellagio, Italy, on May 2014, with the generous support of the Rockefeller Foundation. The author has also benefitted greatly from useful discussions, feedback and suggestions from Joseph Sitglitz to restructure the key arguments put forward in this chapter. The author would especially like to thank Weigang Yuan and Eamon Kircher-Allen for valuable research assistance.

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particularly in developing countries. Yet the savings are not flowing to the investments where they are needed.

Sovereign wealth funds (SWFs) managed $7.1 trillion in 2014, an amount that has more than doubled since 2007 (SWF Institute 2015). Meanwhile, it is estimated that sustaining global GDP growth on the current track until 2030 would require $57 trillion in infrastructure investments, an increase of 60% from $37 trillion in the last two decades (McKinsey Global Institute 2013). If just 10% of the SWF assets were to be earmarked for infrastructure development, these needs would be easier to meet and the impact on global GDP growth and poverty reduction could be bigger than other sources of large-scale private investments.

This mismatch is particularly puzzling because the savings, highly concentrated among SWFs, insurance companies, as well as pension funds, and the required investments share similarly long-term investment objectives. Having matching time horizons between the investors and the projects reduces the need for financial intermediation[2], which removes another layer of complexity and cost in project financing. So what's stopping those trillions of dollars from finding these strong investment opportunities, such as in infrastructure?

There are numerous obstacles that prevent the efficient flow of capital from the countries with high savings to the countries with strong investment opportunities in infrastructure. Inadequate institutions, information asymmetries, adverse incentives, and poor governance are just a few examples. In many developing countries—especially commodity-exporting and agriculture-based economies in Africa—political risks, poor governance, corruption, and conflict present even higher hurdles to infrastructure investment.

Although the objectives of all SWFs are not typically short-term oriented, the main strategic focus of certain types of SWFs require ready access to liquid assets to address foreseen or

[2] Pension funds typically match their liabilities to investment assets to minimize reinvestment risk. However very long life-span assets have limited supply. Through financial intermediation, short-term assets can be linked together to synthetically create long-dated assets. Pension funds incur additional cost for the financial institutions to assume the reinvestment risk in this maturity transformation process.

unforeseen market disruptions. For example, SWFs from commodity-driven economies such as Chile (a major exporter of copper) function as a stabilization fund in case of a commodity price crash. SWFs that function primarily as a stabilization fund are reluctant to seek riskier investments, such as equity stakes in private companies or real estate, let alone invest in long-term infrastructure projects, especially in countries that appear risky for the reasons listed above. Even if such investments yield higher returns *on average*, the lack of access to liquidity of such investments is an obstacle, as they may pose a problem of obtaining immediate access to financial resources when urgently required. Other types of SWFs, including monetary reserve investment funds and savings funds share similar liquidity concerns, but to a much lesser degree.

The concern about access to liquid assets is very legitimate; however the mismatch in savings and need for investment could be nonetheless still be addressed if SWFs were to earmark even a relatively small percentage of their total assets under management to infrastructure investments. Because of the anticipated growth in SWF assets, an investment size of as little as 5% would be a meaningful step in bridging the savings to the investments and to national economic growth, global GDP growth and to transforming the lives of hundreds of millions of peoples, particularly across developing countries. Apart from the problem of liquidity that deters long-term investors such as SWFs to invest in infrastructure, some of the main obstacles to infrastructure investments listed earlier are also gradually disappearing.

On the political front, as we note below, many African countries are realizing that poor governance, corruption, and conflict are obstacles to foreign direct investments, and are taking measures to mitigate them. A Country Policy and Institutional Assessment (CPIA) Africa review in 2015 found steady progress in strengthening governance policies, especially in budgetary and financial management (World Bank 2015). Anti-corruption initiatives, such as Africa Governance and Monitoring and Advocacy Project (AfriMAP) and African Parliamentary Network against Corruption (APNAC), are also making measurable impacts in the fight against corruption in governance. With the exception of a small number of African countries, in particular Libya and South Sudan, Africa as a whole has seen a significant drop

in political and military conflict, according a report by Institute for Security Studies (ISS 2015).

In general terms, the obstacles posed by infrastructure investments are shrinking and there is a growing awareness among fund managers that traditional patterns of safe investment strategies by SWFs are inadequate due to very low, if not negative, real yields as a result of global central banks' interest rate policy and quantitative easing programs. The mindless "search for yield", while exposing SWFs to considerable risk, has proven to be even more counterproductive due to a lack of consistent investment strategy. Moreover, investing in conservative instruments such as treasury bills to avoid liquidity risk and commodity boom and bust cycles is not particularly effective in the long term: SWFs can only *stabilize* their wealth if financial assets are held in counter-cyclical investments (countercyclical, that is, to the underlying asset, e.g. the price of copper) which these are not. Otherwise, in a prolonged commodity price decline, the assets under management can experience significant drawdown. On the other hand, large-scale infrastructure investments offer advantages of stable long-term real returns that have low correlation with other asset classes (Inderst 2010). [3]

Because large infrastructure initiatives can be a part of the government stimulus programs during a downturn when the private sectors are scaling back, infrastructure investment may exhibit countercyclical patterns that carry significant diversification effects. This type of countercyclical investment initiative has been unfolding in China since early 2015; to combat declining economic growth, the Chinese government has been accelerating 300 infrastructure projects valued at $1.1 trillion dollars in order to spur economic growth, according to Bloomberg News. Private sector funding would meaningfully benefit from government support during periods of economic slump.

[3] Of course, the overall return to such investments will typically depend on the overall economic performance of the country.

Though it is has long been recognized that the long term returns to equity exceed those to debt by more than an amount that can be justified by risk aversion (the equity premium puzzle), only a small—if growing—number of SWFs have started to allocate a larger share of their assets to equity investments. Beyond these two broad asset classes, however, there has been relatively little exploration into other very large asset classes, such as real estate or infrastructure. These asset classes, however, are natural targets for SWFs, given their long-term orientation (a topic also discussed in Chapters 4, 6 and 15 in this volume).[4]

In this chapter we build on an earlier paper (Arezki, Bolton, Peters, and Samama 2014), presented at Bellagio, Italy at a specialized conference organized by the Rockefeller Foundation. This paper, which we will refer to as the "Bellagio paper", offers a detailed survey of the state of SWFs and their long-term investment behavior, and explains why their involvement in infrastructure investments in developing countries has been so glaringly low. It concludes that the SWFs' reluctance to venture more actively into global infrastructure is largely due to risk aversion. The Bellagio paper also makes a strong case for the need of a new independent global infrastructure investment platform, to complement on-going efforts by the European Investment Bank (EIB), New Partnership for Africa's Development (NEPAD), European Bank for Reconstruction and Development (EBRD), and other development banks to promote infrastructure investments. We describe how such a platform could provide a framework for risk management and allocation.

This chapter builds on the Bellagio paper by further exploring how Global Infrastructure Investment Platform (GIIP) can help overcome some of the remaining key challenges specific to developing countries—and to African countries in particular.

[4] Part of the reason for this failure is institutional: most of the funds have relatively small teams of managers, who mostly have expertise in managing portfolios of liquid, publically traded securities. They lack expertise in less liquid markets, such as real estate and infrastructure—and may be more reluctant or even unable to assess when these markets have become less risky. This paper focuses on an alternative explanation.

Emerging Africa: an illustration of infrastructure investment opportunities and needs

The assets that could underlay the economic transformation that is taking place in Africa remains largely underrepresented in the portfolios of SWFs. Africa has been the world's second-fastest growing region after China in recent years. The continent has enormous needs for infrastructure investments if it is to continue growing and developing. SWFs are uniquely positioned to make these investments, given their long-term investment horizons. These combined factors suggest that SWFs should be making more investments in infrastructure in the region than they have been.

Growth in Africa has been accompanied by political change. Since the early 1990s, direct multiparty elections have been held in more than 40 Sub-Saharan African countries, and for many of them these were the first multiparty elections after gaining independence in the 1960s. These trends suggest that democratic reforms are underway in many African countries (Peters 2011). There are also signs of a notable reduction in regulatory risk and an increase in investor protection (Deloitte 2013).

Africa's investment needs

Infrastructure remains massively underdeveloped on the continent. Africa has, urgent needs particularly in transport, water and electricity, sectors which usually involve a major component of public funding, unlike telecoms, which early on attracted investment from the private sector. Without these investments, Africa will not be able to continue to realize its economic potential. According the World Bank, the infrastructure investment gap in Africa until 2020 will average $93bn per year (World Bank 2014). These estimates are likely to be even greater, given the forecast for high population growth in the region. While Europe's

population will decline by 60 million by 2050, Africa will grow by another 900 million during the same period.

Infrastructure investment is especially needed in the following key areas:

- **Energy**: installed power generation capacity needs to increase from present levels of 125 gigawatts (comparable with that of the United Kingdom) to almost 700 GW in 2040 (PIDA, 2011). According to the International Energy Agency, "an estimated 620 million people in sub-Saharan Africa do not have access to electricity, and for those that do have it, supply is often insufficient, unreliable and among the most costly in the world" (International Energy Agency 2014).

- **Transport**: demand volumes will increase around 6–8 times and up to 14 times for some landlocked countries by 2040. Port throughput will rise from 265 million tons in 2009, to more than 2 billion tons in 2040 (PIDA 2011).

- **Water:** needs will push Africa's existing river basins – including the Nile, Niger, Orange and Volta basins – to the ecological brink (PIDA 2011).

- **Information and communications technology**: demand will swell by a factor of 20 before 2020 as Africa catches up with broadband. Demand for international bandwidth, around 300 gigabits per second in 2009, will reach 6 terabits per second by 2018 (PIDA 2011). As of 2014, Africa's international bandwidth reached 3 terabits, which is 10 times of the 2009 bandwidth. In 2010 only 10% of Africans had online access, and this doubled in 4 years to 20%. This rapid growth is expected to continue for the next two decades (World Telecommunications/ITC Indicators Database 2014).

There are several drivers of these growing infrastructure needs. One major contributing factor is population growth (Africa has the fasting growing population in the world). Another major factor is that many countries are experiencing economic transformation—moving from agriculture to the manufacturing sector. Growing urbanization across African countries is also creating huge demands. For example, there is strong demand for road modernization in Angola, Namibia and Zambia, where un-tarred roads account for 70-90% of all roads, making the exorbitant transportation costs, in literal terms a major road block, to

promoting urbanization (Naidoo 2007). For more recent data on paved and non-paved roads in Africa as a whole when compared to other low income countries, see, Foster and Garamendia, World Bank 2010; and Gutman et al, Brookings Institute 2015. The demand created by growing urbanization is not limited to the current decade.

Why SWFs should invest in infrastructure in Africa

SWFs may well find infrastructure investments in Africa particularly attractive in coming decades. In relation to other long-term investors, they may have some comparative advantages, allowing them to obtain differential returns; and this may be especially important if other investment opportunities are foreclosed (Turkisch 2011).

i. SWF investments can be leveraged with private sector investments. SWFs may "signal" relative safety, but given their political influence (their connection with governments and the global political processes) it may *make* it safer for investment. When the political environment is believed to be safer, other private-sector investors will be attracted to enter.
ii. Developing markets might seem more attractive as developed countries raise barriers to state-backed investors due to the perceived threat to national sovereignty.
iii. As SWFs are not subject to quarterly earnings reports they can invest in illiquid and long-maturity assets that private institutions are unable to undertake. The shortage of suppliers of long-term investors should yield them a long-term investment premium.
iv. Lastly, investing in Africa's infrastructure development is a way to diversify in assets that have little correlation with the global stock and bond markets (Ibbotson 2009).

According to a recent World Bank report, as of 2014, more than 2,200 Chinese enterprises were operating in Sub-Saharan Africa; yet most of them are private firms (World Bank 2015). In addition, large-scale investments from the Middle East into Africa have grown notably over the past decade, but the main source has been private investors, as opposed to SWFs. There are multiple drivers of these investments: as wages rise in China, for instance, Chinese firms are looking for low cost production sites elsewhere in the world. Firms in the Middle East may feel that geographical proximity gives them an informational advantage, not to mention cultural links around Islam. Some of the investment may be politically driven—pushed by governments to strengthen the political bonds between the two and too

enhance influence. For the African recipient of these funds, SWFs also have distinct advantages. SWFs will not only contribute with large-sized investments, but also reduce the volatility of these capital flows and the short-termism associated with private investors. The high needs in African infrastructure investments combined with SWFs comparative advantage in providing such type of funding would yield successful partnership that is conducive to high return expectations.

Sources of funds for Africa

The past decade has also witnessed strong investments from many parts of the world, and in many arenas. For example, there have been strong investments from Middle Eastern countries such as Kuwait, Dubai, Abu Dhabi, Qatar and Saudi Arabia to Africa in the oil and gas, telecommunications sector, and in agricultural cultivation (Hardy 2014)

China, which has pursued an integrated and multilateral approach through the leadership of the China Development Bank, is providing about two-thirds of Africa's new spending on *infrastructure* since 2007, which not only comes in the form of aid but also through a number of other channels/financial instruments by its various state institutions (e.g. SWFs) (OECD 2012).

For infrastructure investments, China has sometimes provided resource-backed loans, through financial institutions such as the China Development Bank as non-concessional loans to African governments. In return, the recipient country of resource-backed loans contracts Chinese companies to build infrastructure projects and also to extend the conditions and the rights to extract natural resources (mining or oil extraction rights). China's financing of Africa's infrastructure rose dramatically in the years prior to the 2008 financial crisis (OECD 2012).

But infrastructure is only a small part of overall investment. A Brookings Institution study by Chen *et al.* (September 2015) point to UNCTAD's World Investment Report for 2015,

which shows that contrary to popular perception, China's role in overall foreign investment in Africa is sometimes overstated. In 2014 for example, only 4.4 percent of total FDI flowing into Africa originated from China. FDIs from the EU, US and even South Africa exceeded the size of FDI from China to the continent over the same period.

Ever present risk

The favorable trends indicated earlier that make Africa a more attractive destination for foreign direct investment, however do not mean that investment risks in Africa are no longer present. Complex labor markets, poor infrastructure, currency volatility, poor supply of skilled labor and management, social challenges, high transaction costs, inadequate political and legal frameworks, ability to monitor and measure social impacts and enforcement mechanisms, all serve as major deterrents to FDI (Roose, Bishoi, and Schena 2012). Poor policy coordination and planning, as well as inadequate operational performance in such areas as the power sector in Africa is also pervasive and similarly deters investments. Most importantly, default rates are also extremely high (Collier and Gunning 1999). Together, these shortcomings limit "the enabling environment for long-term planning" and investment (OECD 2012).

There is clearly a major need to address infrastructure inadequacies in Africa and this acute demand offers strong opportunities for SWFs and other long-term investors. African countries would also benefit enormously from the involvement of long-term investors to address shortages in infrastructure development. Yet, there are numerous obstacles to convert such possibilities into reality from a policy design, execution, maintenance and monitoring perspective. An independent infrastructure investment platform, such the one proposed in this chapter, would underwrite investor risks and address clear coordination failures.

Having outlined the needs as well as opportunities around infrastructure investments in Africa, we now present a proposal for the operation of an independent international platform involving a multitude of actors through which long-term investors, including but not limited

to SWFs can raise their investments in this asset class in Africa (and indeed in countries in other regions requiring investments in this area).

The Global Infrastructure Investment Platform (GIIP)

Despite the encouraging trends in growth, one key factor that is holding back investors, including SWFs, is the perception of high risk associated with investing in the least-developed countries. Generally speaking, there is a major lack of transparency, coordination and information about investment opportunities in global infrastructure, coupled with legal, governance and monitoring challenges. These types of barriers are the major reason why private investors are often disinclined to make such investments. All investors, SWFs as well as pension funds, insurance companies and development banks, face major challenges to assess and mitigate risks associated with long term investments in infrastructure. The Global Infrastructure Investment Platform (GIIP) offers new ways of addressing all of the various challenges mentioned above through a more open and independent investment platform. [5] [6]

The GIIP is not a multilateral agency, an arm of development banks, a think tank or a private financial institution. Essentially its aim is to operate as an independent special purpose entity[7], to bring together all of the relevant parties involved in long-term infrastructure investments in a transparent manner. These parties include sovereigns, ratings agencies, environmental agencies, legal firms, SWFs, pension funds, insurance companies, international financial institutions and regional development banks. The GIIP would identify all of the agencies involved in a given infrastructure project and follow the development of the project at each stage of the concession period (normally anywhere from 10-30 years).

[5] The Bellagio paper provides a through and detailed review of lessons learned from past experiences

[6] It should be noted that similar ideas underlay the founding of the new infrastructure banks.

[7] The specific proposal put forward in the Bellagio paper had it hosted at Columbia University.

The most importance function of the GIIP is to mitigate investment risks, and to perform all the tasks required to convert a potential project in Africa into an investable asset.

Public Sector Alternatives

Various initiatives to promote infrastructure have been pursued by organizations such as the Asian Infrastructure Investment Bank (AIIB), European Bank for Reconstruction and Development (EBRD), New Development Bank (NDB), the World Bank and others. Please see chart below for existing models, as described by Gutman *et al.* (2015).

Development Bank Investment Platforms for Potential Infrastructure Investments

	EIB	EBRD	WB	AIIB	NDB
Official purpose	Bring about European integration and social cohesion	Using investment as a tool to help build market economies	Reduction of worldwide poverty	Provide finance to infrastructure projects in the Asia Pacific region	Mobilize resources for infrastructure and sustainable development in BRICS and other emerging economies
Shareholders	EU member states	64 countries and 2 EU institutions. USA is the largest shareholder	188 member countries. Top 5 countries by voting power are USA, Japan, China, Germany, and France. Thus, dominated by American, European and Japanese interests	22 Asian countries. China holds the major stake	The "BRICS" countries: Brazil, Russia, India, China, and South Africa
Inception and initial mission	Nonprofit long-term lending institution established in 1958 under the Treaty of Rome	Founded in April 1991 during the dissolution of the Soviet Union. Support countries of the former Eastern Bloc in the process of establishing their private sectors	One of the key Bretton Woods institutions founded in 1944 to increase cooperation on an international scale	Founded in 2014 as China was frustrated with the slow pace of reforms and governance of the American, European and Japanese members	The idea for setting up the bank was first proposed in 2012 at the 4th BRICS summit; The agreement on provision of legal basis was signed in July 2014, and was entered into force in July 2015. The NDB was formerly known as the BRICS Development Bank

The alphabet soup of international development banks (EIB, ADB, AfDB, CAF, EBRD, IADB, NDB, WB and AIIB) is getting larger and larger. The table above compares five of them.

The Global Infrastructure Facility (GIF) under the World Bank became operational in April 2015, and the AIIB is leading the charge in developing an infrastructure investment platform in the Asia-Pacific Region. Especially the AIIB and NDB were founded on an understanding that the old model characterizing the WB and other multilateral institutions might not be fully appropriate for the 21st century. The NDB, for instance, focused on creating special investment funds, which would invest in a particular range of investment projects, with a particular risk profile, attractive to particular classes of investors. It serves an important

function by engaging with special investment funds, bringing together an array of potential investors, from SWFs to pension funds, and even high net worth individual investors. The NDB employs modern financial techniques to provide an array of investment products—using structured finance in a responsible way to allocate risk, and by using securitization to pool risks.

The governance structure within the mentioned different funds is generally regarded as being adaptable and responsive to the concerns of the investors.

Value added of an independent GIIP

Another infrastructure investment platform such as the GIIP may therefore seem redundant, and run the risk of largely overlapping with these existing organizations in terms of functionality, but the sheer scale of infrastructure investment needs over the next three to four decades dwarfs the combined capacity of the existing organizations. For example, the World Bank estimates that the emerging market and developing economies require more than $1 trillion each year, while the GIF has an initial capitalization of only $100 million USD as of 2015. The total capital capacity of the NDB stands at $100 billion—one-tenth of the estimated infrastructure financing need. In addition to adding capital capacity to the global pool of financing available for infrastructure investment, a non-governmental investment platform has several other advantages. Firstly, the non-political nature of GIIP may give it an advantage—potential investors would not worry for instance that the destination of investments was influenced by politics.[8] Secondly, the GIIP can become a reliable source for unbiased research and recommendations by operating as a platform independent of any sovereigns or investors, thus avoiding conflicts of interest.[9] Lastly, the GIIP can gain a

[8] This advantage is perhaps overstated: large participants on both sides of the market potentially could exercise influence over a private GIIP.

[9] This advantage is weakened, especially if the GIIP becomes a profit making organization. It is well known that the research of the investment banks is biased.

higher degree of consistency because its financing sources are not subject to regime change or political instability.[10]

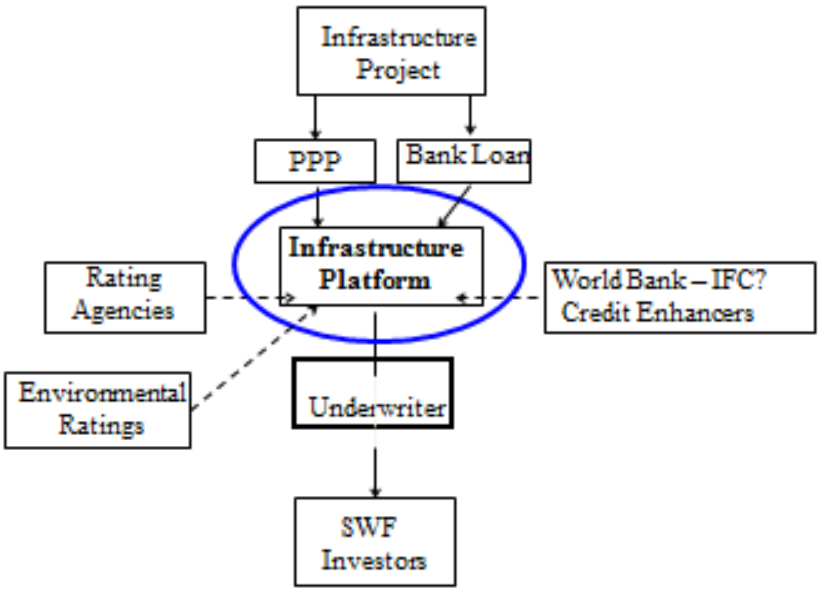
Structure of the Global Infrastructure Investment Platform (GIIP)

The GIIP is a platform charged with coordinating actors, aggregating projects and raising funds from long-term investors. The basic configuration of the proposed infrastructure platform is represented in Figure 13.1. The platform is essentially an institutional framework designed to create special-purpose entities that invest in infrastructure projects and issues claims against the income stream from these projects to investors. As with securitizations for other asset classes, we conceive the special-purpose entity as an independent organization that holds and services infrastructure assets against which asset-backed claims have been issued; but the SPV is managed by the GIIP.

While the basic intermediation principles behind the proposed platform are similar to other forms of pass-through securitization structures, there will be fundamental specific characteristics that will take shape according to the nature of infrastructure assets, the specific risks associated with these assets, and the nature of the main parties involved in infrastructure investments.

[10] This point too can be overstated: the multilateral institutions operate in a way that is influenced by a change in political regime—except for that of the US (in the case of the World Bank).

Figure 13.1: Infrastructure Platform



Barebones outline of a GIIP. A GIIP originates projects (or identifies good projects designed by others), brings them together with long term investors, and designs a framework for risk allocation that lowers the overall cost of finance consistent with the risks the country is willing to bear. Financial and reputation risks are managed by operational oversight by the GIIP, even if it does not operate the project directly.

1. SWFs and pension funds would bring the pool of savings;
2. Governments would propose to match the savings with projects, based on their investment plans and development strategy;
3. Risk mitigation and allocation would be done not just in the usual ways through structured finance and securitization, but through the use of guarantee funds (like MIGA) and guarantees from Multilateral Development Banks, and possibly private foundations.

Origination: A first key distinguishing characteristic of infrastructure projects compared to, for example, commercial real estate is that the origination of an infrastructure project would typically involve a government agency in the host country, whether the project is set up entirely as a publicly owned utility or as a public-private partnership (PPP).

The World Bank, multilateral and regional development banks, as well as private foundations and the anticipated NDB (or BRICS bank) could play a very important role in project preparation and technical assistance to recipient or host country governments.

Subsidization and collateralization

Another distinguishing feature is that many infrastructure projects are not viable commercial ventures. Infrastructure investments such as roads, railways, airports, water and sanitation, and electricity generation are justified by the development externalities they generate.

For example, the costs of constructing a bridge may far exceed the present discounted value of toll revenues, yet the bridge is a worthwhile infrastructure investment because of all the related economic development benefits it generates. The construction costs of the bridge have to be funded somehow and investors will demand a market rate of return for the funds they invest in the project. Therefore, a specific question for infrastructure projects is how the cash flows the project generates—whether in the form of toll revenues or public subsidies—are determined; and how the transfer of these cash flows to the special purpose entity is enforced.

One potential benefit of the infrastructure platform structure for host countries is that it may be able to facilitate the assignment of specific revenues to an infrastructure project, thus giving a higher seniority protection to investors in the project relative to other investors in the host country's (unsecured) sovereign debt.

The assignment of revenues, for example, provides a form of collateral protection to investors in the project, through an enforceable long-term PPP contract. This can allow host countries to fund their infrastructure investments at lower cost.

One of the existing obstacles to infrastructure investments is the debt-overhang problem these countries face, which makes infrastructure investments funded through sovereign debt issues sometimes prohibitively expensive. In other words, the funding of infrastructure projects with a specific assignment of cash flows to the project provides the host countries similar benefits to *covered bond* financing arrangements for real estate investments by banks. The holders of the covered bonds have higher protections than other bank creditors and are therefore willing to purchase these bonds at a higher price. At the same time, bank issuers of covered bonds have stronger incentives to ensure that the real estate investments they originate are sufficiently safe, as they carry a disproportionate share of the downside risk.

Warehousing and Securitization

Once a conforming infrastructure project has been identified it can be warehoused for securitization by the platform. At this stage, multilateral development banks can play another essential role: credit enhancement and bridge financing. No matter how carefully infrastructure projects are vetted, substantial risks remain for investors. To begin with, there is the risk of construction delays and cost overruns. Continuous monitoring of construction progress and access to bridge financing are essential at this stage and both can be provided by development banks. Once the project has been completed the remaining risks are operational, political and currency risk. Ideally, SWFs would prefer to have no exposure to either political or currency risk and to have minimal exposure to operational risk. Development banks and other multilateral agencies can play an important role in absorbing these risks by providing guarantees and holding on to a junior tranche in the securitization of infrastructure assets.

By concentrating on their role as guarantors, development banks can thus leverage their capital to significantly scale up infrastructure investments. They are also best placed to absorb this risk as they have the greatest experience with and leverage on host governments in enforcing promised repayments of infrastructure loans. Finally, by co-investing in infrastructure projects with other long-term investors in this way, they can augment the pressure they can exert on delinquent host governments to obtain the promised repayments.

Indeed, by putting themselves in the position of a gateway to global infrastructure funding, they wield significant power just by their ability to cut off further access to funds for future projects in the event that a host government defaults on promised repayments of infrastructure loans.

Along with the credit-enhancement role of development banks another important group of participants in the securitization are credit rating agencies (CRAs). At least in the early phases of development of this investment vehicle, it is likely that SWF investors will require a AAA rating to invest in infrastructure-asset-backed securities. The rating agencies, in collaboration with the development banks, can set guidelines and protocols for obtaining the AAA rating, which can be made available in advance to the senior tranches of these infrastructure-backed bonds.[11] This would significantly improve SWFs' access to this asset class. Similarly, one can envision a key role for environmental ratings agencies at this stage in determining which infrastructure projects have the least environmental impact and the greatest social development impact.

The GIIP can be made to play a more important role and have greater flexibility than this bare-bone description might suggest. The GIIP should be set up so that origination of investments can be initiated by investors, and not just by host country governments and development banks. Moreover, the GIIP should have a "planning" role, mapping out whole infrastructure networks for Africa in which individual projects can become "bankable."

Governance of the GIIP

The importance of governance is gradually being widely recognized. An independent and transparent governance structure could lend stability and be seen as attractive to long-term investors, as it would provide them with a heightened sense of legal security when undertaking investments with payback periods of 10-30 years. The Board will consist of

[11] We are not pollyannaish about the accuracy of the ratings of the CRA's. We simply note that under current institutional arrangements, they are a central part of the securitization process.

members from the investment community (SWFs and pension funds), from the recipient countries, and from the World Bank and other official multilateral agencies. Clear guidelines governing conflicts of interest, environmental and social safeguards will need to be formulated.

The initial organizational structure of the GIIP could be modeled on the UK Pension Infrastructure Platform (PIP). The UK PIP started with pension funds as founding investors to seed the fund with capital, which targets long-term infrastructure development projects. This structure sought to form a pool of assets of meaningful size to be free from stricter investment regulations on pension funds. The GIIP can be initially formed in the same way by soliciting SWFs and Multilateral Development Banks (MDBs) as the founding investors. On one hand, the commitment of the SWFs and the MDBs would lend strong credibility to the platform; with the information network available to the MDBs and strong financial backing of the SWFs, the platform would be able to ensure that a pipeline of projects is available over time and that the projects have all been thoroughly vetted and rated before being securitized. On the other hand, this arrangement also offers unique incentives to the SWFs; given that some emerging market SWFs have hit road blocks in investment initiatives in developed markets due to direct or indirect protectionism. By teaming up with the MDBs and making investment through the GIIP, SWFs would alleviate and circumvent distrust by host nations and achieve broader market access around world.

An operation template available to the GIIP is the Canadian syndication model. The Canada Pension Plan Investment Board (CPPIB) and the Ontario Teachers' Pension Plan (OTPP) were designed to allow small and large institutional investors to gain access to infrastructure investments otherwise too labor- or risk-intensive. To do so, one of these large institutional investors, such as OTPP, takes the lead and invests directly in an infrastructure asset. The lead then creates an opt-in by structuring a vehicle and setting a minimum investment level for each additional stakeholder. Each investor then does its own due diligence and decides whether to invest at the set price. Larger entities with in-house infrastructure investment teams can make multiple investments in infrastructure assets while diversifying their risk.

This approach gives them the ability to invest in larger projects even if they don't have the appetite or capacity to carry out a large-scale single project on their own. The institutional investor divests substantial amounts of the risk. By spreading risk among stakeholders, this approach reduces the problem of direct investors shying away from any specific project because of the concentration of risk. There are, however, no extra fees for the lead investors; there are no management or performance fees because each subsequent investor pays only the lead investor's pro-rata costs (plus the investment). Smaller investors without in-house infrastructure experts could invest directly with only a pro-rata share of the costs of the lead investor—much less than the fees from traditional fund structures. The syndication model would be structured such that no investors have any fiduciary responsibility to any other investor—requiring, as noted above, every investor to exercise their own due diligence. Furthermore, while the smaller investors must be responsible for their own due diligence, in practice the lead investor will have already done a great deal of that work, giving the smaller investors something to build from. (Alternatively, the lead investors could undertake fiduciary responsibilities, for which they would be appropriately compensated.)

Risk mitigation

There are many risks associated with infrastructure projects, which may loom especially large in the mind of investors, given the long-term nature of these projects.

The risk of nationalization today is minimal, but this risk could be easily handled through MIGA. National guarantee agencies (like OPIC) and development banks can also play the role of guarantor.

MDB participation in a project not only mitigates nationalization risk, it also mitigates the risk of actions that significantly and inappropriately reduce the value of an asset. Some of the international and regional lending institutions could also collaborate with each other to act as guarantors, should a natural disaster or war take place.

Securitization and tranching of risks, prudently done, may enable greater participation in the investments, not only by pooling and limiting risks (for those who want risks to be limited in certain ways), but also by facilitating exits from the Fund should that become necessary. (Provisions for exit, especially in periods where mass withdrawals might be a threat, will have to be carefully drawn.)

Solving important global challenges often requires innovative solutions involving the coordination of sometimes radically different actors. An acknowledgement in the virtue of plurality and diversity among members of the governing board guides the conceptualization of the GIIP, as do recent examples of promising collaborations to deal with similar large-scale development investments. In 2014, J.P. Morgan Chase and the Gates Foundation formed an investment fund that backs late-stage development of technologies to fight killer diseases in low-income countries. The private financing seeks to address the fact that global health funding barely grew last year. Given the risks of investing in the clinical development of new technologies, the Gates Foundation and the Swedish International Development Cooperation Agency have committed to partially offsetting potential losses in the fund, which seeks financial return for investors by targeting technologies with public health applications in both developed and emerging markets. Lion's Head Global Partners LLP, a London-based asset manager specializing in sustainable development, is responsible for originating, managing and exiting the fund's portfolio investments.

Default and enforcement

Another key question is how contracts associated with long-term projects can be enforced.
The specific assignment of cash flows to an infrastructure project does not necessarily mean that the cash-flow transfer to investors will always be enforced. Investors' lack of power for contract enforcement in infrastructure projects is another key distinguishing characteristic of these investments, which has to be taken into account by the GIIP. For most asset-backed securities (whether they are backed by commercial or real estate assets, auto loans or credit card debt) the investors' rights in case of default are straightforward, even if the costs of

default can be substantial. If there is a default on an asset that backs an asset-backed security, the special-purpose entity in charge of servicing the asset has the right to liquidate the asset and to take ownership of either the asset or the proceeds from the sale of the asset. Such rights, however, are typically not available for infrastructure projects. Thus, a key question is what can be done in the event of default on payments for an infrastructure project—or to reduce the risk of such a default.

A closely related issue is what options are available to investors of asset-backed securities when the special purpose entity that has issued the securities defaults on the promised payments. Here again investors' rights are straightforward. Following the default of the special purpose entity investors can resolve the entity in bankruptcy and recover the liquidation value of the assets. In principle, the same rights can be offered to investors in infrastructure-asset-backed securities, although careful consideration will have to be shown to identifying the appropriate court systems in a given country or region, should legal jurisdiction be required to resolve the failing projects.

The participation in the proposed independent infrastructure platform of regional and multilateral development banks (such as the World Bank, the European Bank for Reconstruction and Development, and private foundations) is essential to facilitate and guarantee the enforcement of promised payments under the infrastructure investment contracts. MDBs, in particular, can play a critical role in enhancing the infrastructure platform. They are uniquely placed to perform due diligence at the origination of new infrastructure projects. Multilateral development banks have a high concentration of infrastructure engineering expertise and are thus well placed to assess the technical viability of the investments under consideration and to offer assistance to host nations at the project preparation phase. They have also accumulated the know-how to assess the community/social and environmental impact of such projects, as well as the financial capabilities of host country governments to subsidize such projects.

Confronting challenges and the perception of excessive risk

There are of course certain risks SWFs take on by investing in infrastructure projects and some compelling reasons as to why they may not be willing to take them on. The GIIP is structured to assuage these concerns. If, despite the great investment of time and resources in creating the GIIP, it fails to gain the legitimacy sought by SWFs and countries seeking large investments in infrastructure, any other future efforts in this area of investment would also suffer. In this section, we consider a number of anticipated challenges and briefly discuss the broad outlines of how these may be addressed.

Many SWFs tend to mainly pursue projects that are ascribed highest ratings by credit ratings agencies. The reality is that risks exist in just about every context, and where there is lower risk, the payoff also tends to be lower. The required skill is in being able to manage risk effectively and to reduce failure. The GIIP could be seen as a public good that could help limit that failure by harnessing the skills required to invest successfully in infrastructure. The investment risk posed by a lack of technical expertise in SWFs in managing large-scale infrastructure projects could be addressed by the GIIP, as a consequence of having a large pool of participants with a broad range of experience and technical know-how about managing such projects. Moreover, the GIIP would also serve as an important source of information about new infrastructure projects that are open for public competition. Such a platform reduces the risk for investors because the host country or countries seeking funding, technical and management expertise for large-scale infrastructure initiatives would also be required to provide clear, complete and detailed information about the projects that they are seeking bids for. Many leading SWFs may have plenty of funds to invest, but may be unaware or poorly informed about a number of potentially highly profitable infrastructure projects on the international market.

Some large-scale, long-term infrastructure projects are spread across a number of countries within a developing region, some of them with higher risk ratings due to unstable political and legal institutions. SWFs would be able to diversify their risks through securitization of their investments across a broad range of projects by partnering for example, with SWFs from other regions, institutional investors, regional development banks, and international investment banks, and by gaining the endorsement and support of the World Bank in the role as guarantor in the event of a risk of nationalization of long-term projects through regime change and other national disasters related to climate or any other cause. The legality and compliance by all parties involved in given projects would also be well defined and therefore enforceable, in case of breach in agreements. Many of these examples are cited in our earlier Bellagio paper (2014). For a comprehensive and thorough analysis of how these structural features associated with the GIIP may be of relevance to Africa, please see the Brookings Institution research by Gutman *et al.* (2015).

While access to infrastructure investments is unambiguously beneficial to the host country, the investment returns to the investor, just like returns on any other conventional investments, can be highly variable and volatile. Inderst (2010) argues that although infrastructure investments follow the traditional capital asset pricing theory, where higher expected risk is associated with higher expected return, infrastructure investments exhibit much higher variability in expected returns for a given level of risk, compared with the conventional fixed income and equity investments. This is indeed a challenge in terms of managing investor expectation, but the GIIP is in a unique position to design risk mitigation strategies because of the breadth of the investment projects it expects to screen, and also because of the diversification it facilitates. To enhance this role, the GIIP can identify types of projects that demonstrate negatively correlated returns and bundle them together, much in the same way that a conventional equity/fixed income portfolio is built to eliminate idiosyncratic risks. A further extension to this approach is to combine projects with predictable early cash flows with those that do not expect cash flows until much later. This would make it easier for rating agency models to come up with consistent ratings for a project bundle. With these tools, the GIIP can mitigate the idiosyncratic risks inherent in

individual projects and offer a diversified bundle that earns returns commensurate with the systemic risk in infrastructure investment.

Another risk is that developing countries and SWFs may perceive the GIIP as a Western construct designed to extract high returns on investments and to exploit their economies and capital, and could thus be reluctant to join. One way to overcome this negative perception is to consult these core participants, most of who are from developing countries, as early as possible and to have them collaborate in the formulation of mission and vision statements and the fundamental governance structure of the GIIP.

The need for sustainable and responsible investment poses another challenge to the GIIP in terms of reputational risk. Growth at the cost of the environment, particularly as the world has begun to reel from the effects of climate change, is unsustainable and no longer accepted. Therefore the GIIP in its must take into account the social as well as the environment impacts while screening for infrastructure projects. The environmental consideration also provides opportunities, since there is already an increasing demand for sustainable infrastructure assets. Bhattacharya (2015) estimates that the sustainable infrastructure assets required over the next 15 years will be around $90 trillion USD.

Conclusion

This chapter proposes an independent Global Infrastructure Investment Platform to channel capital, especially from SWFs, into much-needed investments in infrastructure, and puts forward a general list of tentative steps toward the creation of the GIIP. We propose a focus on SWFs as key investors because they have the deepest pockets and a long-term outlook. The GIIP would play an important role in shrinking the gap between the current global savings glut and the growing need for infrastructure investments. In principle, it would be mutually advantageous for both the investors—offering them higher returns over longer periods of time than existing assets—and the host country, where high return investment

projects are currently going unfunded. There are, of course, a large number of institutional and policy challenges associated with the creation of the GIIP. This paper has suggested, however, that the most of these seemingly impossible barriers are surmountable. A detailed outline of the GIIP has been presented to discuss the various operational challenges, enormous commitment, expertise and goodwill from many partners that will be required to ensure success of such an initiative. The acknowledgement that something is hugely difficult should not deter one not to take on the challenge. In the case of the GIIP, the benefits appear to far exceed the costs in whatever shape or form they manifest themselves.

The first step would be to identify a group of SWFs, pension funds, insurance funds, development banks, and foundations that would be interested in exploring this project further. Ideally, the founding sponsors would represent all regions of the world. A second step would be to team up with a group of development banks that would take on the role of founding guarantors.

The start-up phase of the GIIP will likely combine a bottom-up and top-down process, where a private initiative is supported by a coalition of willing governments and development banks. To kick-start the process as a first step, seed funding from foundations and other supporting actors would allow a team of infrastructure experts, investment bankers and international investment lawyers to establish the legal structure of the GIIP and gather templates for investment agreements, as well as identify a first set of projects that could be funded. The initial phase of operation of the GIIP would begin with a pilot project that focuses on a particular country, region or small subset of countries. This pilot project could then be scaled up to include other countries where there is strong demand for long-term investments in infrastructure. Based on the outcome of the pilot project, other countries would, we hope, be encouraged to utilize the GIIP to attract long-term investments from SWFs. Eventually the GIIP would not only promote development in a very significant way, but also provide SWFs with information about attractive investment opportunities. Regional organizations should play a prominent role in the platform.

Who would be the first mover to take the initiative to encourage investments through an international investment platform? Should it be SWFs, governments, pension funds, international financial institutions, financial intermediaries, or developing countries that seek funding for vital projects? The GIIP can clearly serve as the catalyst for coordination of these parties. Furthermore, some safeguard mechanisms, such as insurance, monitoring, and auditing, could be employed to enhance coordination:

The organizations backing the platform, both as facilitators and guarantors, should be comprised of a healthy mix of cultures and nationalities to lessen the risks both of perceived and of real exclusion. The guarantees expected to be offered by multilateral organizations, as the World Bank's MIGA (Multilateral Guarantee Investment Agency), would consist of insurance against defaults of infrastructure projects due to political unrest (Irwin 2007). Investors such as SWFs are likely to want maximum monitoring of long-term projects in the infrastructure development that they take on. Meanwhile, countries or individual companies managing the projects are likely to want minimum monitoring. Therefore, the best outcome for all parties concerned would be to have the monitoring, as well as the auditing process carried out by an independent party or organization.

Both the founding guarantors and investors would agree on the contours of the appropriate governance structure of the GIIP and target return for investors. Further, they would determine whether investments are made through a closed or open-ended fund, the modality of the guarantee, and a calendar for the start of the operation and its potential evolution as the platform grows.

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