The Role Sovereign Wealth Funds Can Play in Developmental Finance: The Investment in Infrastructure and Entrepreneurial Activities, the Development of Financial Institutions and the Creation of a Business Friendly Environment

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This paper argues that Sovereign Wealth Funds are an excellent source of developmental financing. We argue that on grounds of diversification and return Sovereign Wealth Funds should seek out investments in infrastructure and entrepreneurial ventures in developing countries. We argue that developing countries should recruit such funds, since the size of financial capital available from Sovereign Wealth Fund portfolios makes them an important source of financing. Finally we argue that either a Sovereign Wealth Fund developmental mutual fund or a Sovereign Wealth Fund development bank would be the most effective way for Sovereign Wealth funds to engage in developmental finance.

INTRODUCTION

Sovereign Wealth Funds are investment portfolios owned by government units. Funding typically comes from earned global currency reserves in excess of those needed for normal foreign exchange management. According to the Sovereign Wealth Fund Institute, about 59.5 percent of these Funds gain their funding from oil and gas sales and the other 40.5 percent from other sources including trade surpluses (Sovereign Wealth Fund Institute, 2015). As of February 2015, the Sovereign Wealth Fund Institute estimated that total Sovereign Wealth Fund assets had grown to over 7.1 trillion U.S. dollars (Sovereign Wealth Fund Institute, 2015). There is currently one Fund, the China-Africa Development Fund with 5 billion dollars under management, dedicated to developing economy investments(Sovereign Wealth Fund Institute, 2015). It is reckoned that Sovereign Wealth Fund assets are almost triple the total amount of hedge fund assets under management and, therefore, constitute an important source of potential risk capital.(Barclayhedge.com,2015).

Infrastructure

Infrastructure investments come in many forms, but it is generally agreed that investment in infrastructure typically increases public and private sector productivity and is especially powerful for developing countries. Investments in transportation and communication infrastructure impact productivity both directly and quickly and, therefore, often seem to be the most desirable place to allocate infrastructure financial resources. Investments in education and health care have more complicated impacts on productivity as do investments in social infrastructure. Education often requires an attainment of a certain level of proficiency before strong productivity benefits are gained and healthcare expenditures are age sensitive in their enhancement of productivity. What might be labeled social infrastructure expenditures are also interesting. The investment in museums, parks, and sports facilities can create financial and social benefits to society. To the extent that government owned facilities earn profits, the financial benefits can reduce the need for higher taxes and can be used for productivity enhancing investments elsewhere. Further, the existence of such facilities yields a portfolio of benefits including improving general knowledge, increasing physical health, and possibly creating better relations among citizens. All of these outcomes might lead to productivity enhancement.

There is likely a difference between the investment in what might be thought of as catching up infrastructure and the investment in more modern infrastructure. Catching up infrastructure is likely to add the most to improving productivity but the need to consistently modernize and improve on existing infrastructure should not be overlooked. Generally developing countries need a large quantity of catching up infrastructure and so the return on infrastructure investing is likely to be the greatest in such countries.

While developing countries have the most to gain from an investment in public infrastructure, they tend to suffer from having meager financial resources available to make the investments. Later, we will discuss why Sovereign Wealth Funds are an important target for generating the necessary financial resources.

Entrepreneurship

Entrepreneurship is a "sexy" topic in the global economy. Entrepreneurship offers a bevy of interesting benefits to all economies developing or developed. Entrepreneurship takes the form of inventing new technologies, creating innovations from known technologies or both. In addition entrepreneurship can leverage the strengths of the local economy or help diversify the local economy. Both of these activities are desirable. Like the investment in infrastructure, some entrepreneurial ventures will enhance productivity but others may simply make life more enjoyable. However, unlike infrastructure, where there may be circuitous routes to society's benefit claim, entrepreneurship needs to create direct returns on investment to survive. In speaking about entrepreneurial benefits at the societal level the conversation needs, in part, to be about creating an entrepreneurial environments and culture. Some of what must take place to make that happen includes the necessary financial resources to finance that environment. However, creating an entrepreneurial culture is difficult. Among some of the most important lessons is that failure must be an option. If taking on risk means never being able to access capital again if the venture fails, the climate becomes too conservative to be effective. That is not to say that the entrepreneur does not "need" to suffer in defeat, but it does mean that a *one and done* culture will not work. Below we will discuss how Sovereign Wealth Funds can be involved in creating winning outcomes for all.

SOVEREIGN WEALTH FUNDS

Sovereign Wealth Funds have become controversial in recent years. Though the first sovereign wealth fund, the Kuwait Investment Authority, was established in 1953 it is only recently that they have played a large role in global financial markets. As noted earlier, Sovereign Wealth Funds have almost triple the assets under management that are under hedge fund management, and are about the same size as private equity funds and hedge funds combined (Preqin Global Equity Report, 2015). In addition, the portfolio choices made by some Funds and the domicile of some of the Funds have caused some observers to question the motivations of these Funds (Summers, 2007, and Truman, 2007). However, the evidence so far is that Sovereign Wealth Funds are in the business of maximizing the financial welfare of their owners, who are the citizens of the country or state for which the Fund operates (Balding, 2008, Nuno, 2009, Fatemi et. al.,2011). This paper assumes that the mission of a Sovereign Wealth Fund is to maximize the welfare of the citizen owners of the Fund.

There are several strategies open to Sovereign Wealth Funds to accomplish their maximizing task. Earning greater returns than earned typically on excess foreign exchange reserves is in and of itself a benefit to the citizens of the Sovereign Wealth Fund country. However, these Funds can also be used to diversify the economy, stabilize economic conditions, and/or create an intergenerational transfer of wealth. We believe all of these strategies can benefit from the investment by Sovereign Wealth Funds in infrastructure and entrepreneurship. Of course the investment in infrastructure and in entrepreneurship does not need to be cross border. However, there is good reason to believe that investing in developing nations' infrastructure and entrepreneurial ventures will be beneficial.

Sovereign Wealth Funds wish to earn healthy returns while managing risk to an acceptable level. The Funds do have the luxury of being able to "wait" for positive outcomes. They do not feel the same quarter to quarter pressure that private equity and hedge fund managers are likely to experience. Nevertheless outcomes need to have positive expectations from a present value point of view. A study by Fatemi, Fooladi, and Kayhani, while allowing that data is limited, appears to indicate that Sovereign Wealth Funds are oriented more toward long-run success than are investment funds in general. However, Sovereign Wealth Funds do seem to suffer both geographical and industry sector biases which has limited the diversification benefit (Fatemi, et. al., 2011). Investing in infrastructure and entrepreneurial projects abroad should, on those grounds, prove beneficial.

Sovereign Wealth Funds have the potential to be an important source of funding. Infrastructure projects are typically large capital projects. In some cases there are multiple sources of financing, but not in all cases. Even where there are multiple sources of infrastructure finance, Sovereign Wealth Funds are likely to be the best arbiters of value in the Public Sector. As noted, it is the goal of Sovereign Wealth Funds to maximize the utility of their citizen owners and this is generally thought to mean excellent returns for the risk undertaken. Sovereign Wealth Funds, in order to be successful, need to be managed professionally. With the focus on maximizing wealth for any given risk level, Sovereign Wealth Fund managers are likely to be less distracted by other political issues than are other managers of public investment money. Of course, if the Sovereign Wealth Fund is the only major capitalist in the economy, then it becomes imperative that they lead the investment in public infrastructure (Schubert, 2011). There can be private sources of capital as well and we would expect private investors to be as savvy as are Sovereign Wealth Fund investors, but we think that Sovereign Wealth Funds' needs dovetail well with the infrastructure needs of developing economies.

Sovereign Wealth Funds are likely to face pressure to make infrastructure investments domestically. This is especially true, where there is a high need for such investments. Infrastructure investments have the potential to throw off external benefits not captured in the return on investment. When investments in infrastructure improve private sector productivity, private sector firms become more profitable, more jobs are created in those areas, and more taxes collected. In short, the investment in public infrastructure domestically is desirable to the Sovereign Wealth Fund citizens beyond the return to the Sovereign Wealth Fund portfolio. That is not the case when infrastructure investing occurs abroad. When investing in infrastructure projects abroad other benefits need to come into proper focus.

Why should Sovereign Wealth Funds invest in infrastructure projects abroad? We have already given a clue to that answer. The most obvious reason is if returns are great for the perceived risk. Second is the diversification benefit. Investing in infrastructure projects abroad allows the Sovereign Wealth Fund to diversify their cash flows. Since all economies do not move together the cash flows from infrastructure investments abroad are likely to be less correlated with the domestic economy of the Sovereign Wealth Fund than are the cash flows from infrastructure investments at home. Diversification benefits are particularly important to Sovereign Wealth Funds domiciled in countries where a few industries dominate the economy.

Why would a Sovereign Wealth Fund choose to invest in an infrastructure project in a developing foreign country as opposed to a developed foreign country? It may certainly appear that the investment in infrastructure in a developing country is more risky than a similar investment in a developed country. Nevertheless, the empirical evidence suggests that greater productivity gains are made from infrastructure investments in developing countries and that, in turn, implies that such projects should earn higher returns. The question is; do the additional expected returns exceed any additional risk? Second the diversification benefit is likely to be greater when investing in a developing country rather than in a developed country due to economy correlations. It is likely that the economy of the Sovereign Wealth Fund will be more highly correlated with the economies of highly developed countries than to the economies of developing countries. Finally, while we have implied that Sovereign Wealth Funds have a two parameter utility function (risk and return), it is possible that their utility functions includes additional variables such as social variables. While it is not clear that any Sovereign Wealth Fund will invest in developing country infrastructure for social or even ethical reasons, the issue is worth analyzing (Schubert, et. al., 2010, see appendix A).

From the perspective of the Sovereign Wealth Fund, there are pitfalls with infrastructure investing that need to be understood. First, some infrastructure investments are not likely to work out as planned. Note that Sovereign Wealth Funds have the option of investing in traditional financial securities. When Sovereign Wealth Funds invest in infrastructure projects, they necessarily give up investments in more traditional areas. The opportunity cost of investing in infrastructure investments and not more traditional investments needs to be considered. It is also likely that the effort to assess the potential profitability of infrastructure projects abroad is more difficult than is assessing domestic infrastructure projects, and that the difficulty with the assessment grows inversely to the level of development in the host country.

We believe that there are significant benefits to be gained from infrastructure investing by Sovereign Wealth Funds as reasoned above. However, there are also significant risks in such investments and those risks are likely to grow inversely with the level of economic development in the host country.

The investment in entrepreneurial activities presents a set of issues different from those in infrastructure investing. Infrastructure investments, while difficult to value, are typically traditional investments in transportation, communications, education, healthcare etc. The investment in entrepreneurial ventures is fraught with far greater uncertainty. Nevertheless, the goals of the Sovereign Wealth Fund do not depend on the investment allocation, but the investment allocation certainly depends on the goals. The investment in entrepreneurial ventures will be more risky than are the typical investments made by a Sovereign Wealth Fund. Therefore, on average, greater returns will be demanded. Even the best analysts struggle to know in which entrepreneurial activities they should invest. Therefore, getting Sovereign Wealth Funds interested in this type of investment, if not mandated by the country from which the Sovereign Wealth Fund is domiciled, is a difficult business. Essentially we are asking the Sovereign Wealth Fund to become a venture capitalist. Such investing takes special expertise and raises the cost of analysis. Any returns must cover the additional costs.

Why should Sovereign Wealth Funds, then, invest in entrepreneurial activities? The answer is multifaceted, but again reverts to the goals. First, returns can be quite high and justify the risks taken. Second, if the investment is in the home country, entrepreneurial successes can leverage a country’s strengths or help diversify the economy. Such investments also diversify the Sovereign Wealth Fund’s portfolio. Investments in entrepreneurial activities also have the benefit of keeping a Country’s most talented and creative people at home and such investments can create an environment of economic opportunity. Finally some ancillary benefits may flow from these investments such as increased employment, increased economic growth, and increased tax revenue.

Why, however, would a Sovereign Wealth Fund invest in entrepreneurial ventures in other countries? While the direct externalities will be lost, the entrepreneurial and investment environment; including facilities, other financing sources, the entrepreneurial culture, and market information may all be superior in other economies. These factors are likely to improve the chances of making successful investment choices. Further, portfolio diversification benefits will be better enhanced by investing abroad than at home.

Why, should a Sovereign Wealth Fund invest in entrepreneurial ventures in developing countries? Since market information is more likely to be lacking in these economies, this liability needs to be overcome by returns and greater diversification benefits. In short, if Sovereign Wealth Funds are going to allocate to developing countries financial resources for entrepreneurial purposes, diversification benefits and possibly greater returns need to swamp information liabilities and the loss of direct benefits to the home country. Of course, again, both social and ethical issues could be leveraged here. To the extent that Sovereign Wealth Funds have a richer maximization function than the two parameter risk/return model typically assumed, Sovereign Wealth Funds might be convinced to invest in entrepreneurial ventures for social or ethical reasons. We expect, however, that selling that concept is more powerful for infrastructure investing than for investments in entrepreneurial activities.

To sum up, we think that Sovereign Wealth Funds should at least explore the concept of investing in entrepreneurial activities. While investments of this type effectively require expertise in venture capital investing and, therefore, add to the cost of Sovereign Wealth Fund management, and while there are far greater risks in entrepreneurial investments than in more traditional investments, and we can fairly recognize that most entrepreneurial investments are likely to lose money; we still believe that the benefits in terms of overall returns, diversification, and social benefits are likely to exceed the costs and risks. Further, diversifying entrepreneurial investment to global markets will leverage many of the benefits noted above.

In the final analysis Sovereign Wealth Fund managers are expected to perform well. The investment in infrastructure and entrepreneurship may require expertise not currently found in the portfolio management team. Funds committing to investments in these areas are well advised to make sure that they hire qualified analysts to undertake the valuations of these types of investments. We recognize that not all infrastructure investments will be justified by the cost of the investment and we also believe that most entrepreneurial investments will fail. However, we believe that the summary results will be greater returns for the risk undertaken, huge benefits to diversification both at the portfolio and economy levels, and improvements in the business culture where the investments are made. We recognize that the mix of outcomes is different when investments are made at home than when they are made abroad. We also believe that both results and risks are going to be different when investments abroad are made in developed versus developing countries. We do conclude, however, that a portfolio of investments, both infrastructure and entrepreneurial, both home and abroad, and both in developed and developing countries is likely to result in the maximum outcome for the citizen owners of Sovereign Wealth Funds.

THE DEVELOPING COUNTRY PERSPECTIVE

For developing countries, Sovereign Wealth Funds can be an important source of financial capital and investment expertise. In order to draw Sovereign Wealth Fund capital into developing nations, a strong understanding of the goals and pressures that Sovereign Wealth Funds face is crucial

Sovereign Wealth Funds increasingly employ high level experts to manage their portfolios. These professionals are very aware of issues around return and risk and they understand that the Board of the Sovereign Wealth Fund for whom they manage the financial resources expects high quality results. Further, the Board of a Sovereign Wealth Fund is likely to be far more tolerant over the size and payoff timeline for domestic infrastructure projects than such investments abroad and more willing to take on the risk of entrepreneurial ventures at home than abroad. The reasons are multifaceted. In some cases infrastructure and entrepreneurial investments are more about public policy than about Sovereign Wealth Fund portfolio performance. It is also likely that the external benefits make such projects more profitable to society than to the Sovereign Wealth Fund. Note, once again, that successful projects create employment, tax revenues, better private sector performance etc., very little of which may show up in the Fund's portfolio value. Those externalities are sent abroad when these investment are allocated elsewhere. While we have argued, as would a portfolio manager, that better returns and better diversification benefits can justify the investments abroad, it is easier for the Board to see the direct local benefits from domestic investing.

Developing countries, then, need to overcome that disadvantage. It is possible to do so. While greater returns and better diversification benefits than can be garnered at home are a necessity, risk mitigation and a strong pro investment environment are key elements within the control of the developing country.

Risk mitigation is important. In finance we say we manage risk. We do not typically look to eliminate risk because that almost always comes with low returns. How can a developing country mitigate risk? Accurate information is one of the most important areas where developing countries can enhance the likelihood of Sovereign Wealth Fund investment. While it may be possible to fool a sophisticated investor once, made up or wishful thinking information will be a quick way to kill any future investments.

Developing countries should work hard to inventory their current infrastructure and to plan integrated infrastructure development. Relevant skill inventories of local workers would also be of great benefit.

As we mentioned earlier, the investment in entrepreneurship is quite different from infrastructure investment. It may be possible to get Sovereign Wealth Funds interested in micro finance, as we will touch on below, but if we are trying to gain a more general investment in talent then there are key steps that can be taken. We suggest that governments develop both entrepreneurial centers and an entrepreneurial culture. The first is easier than is the second. Entrepreneurial centers are physical places where entrepreneurship can thrive. One model creates a team consisting of business, university, and government personnel. Potential entrepreneurs compete for spaces at the center. They are given contracts, say for three years, and receive administrative benefits. That is, it is possible to share administrative personnel, computer servers, gain access to laboratories and so forth. In addition they gain access to lower cost consulting help from private sector managers and university faculty. Mandatory classes on financing, regulatory issues and so on are taught. They are expected to move their business through the process, so that in three years they can go out on their own. It is always good if possible to have the entrepreneur pay for some of these benefits. Generally, for incentive reasons, it is good if an entrepreneur is harmed by failure. In addition, the Center would take a position in these companies. While it could be strictly through loans, we suggest a small equity position.

The center would have a lot of information about the projects being developed and could look to Sovereign Wealth Funds for project funding. It might also be possible to get Sovereign Wealth Funds to fund the Center, in exchange for an equity position in the entrepreneurial projects. A strong entrepreneurial Center or Centers, set up for success, should improve information flows and improve the likelihood that projects would be successful.

The second issue is cultural. It is hard both in developing and even developed countries to create an entrepreneurial culture. The most important concept is that failure IS an option. As noted above, it is generally good that failure hurts. The fear of financial harm makes the typical entrepreneur work very hard and as effectively as she or he knows how. However, if it is too hard to gain financing; no matter how good one's idea may be if the entrepreneur has experienced an earlier failure, then an entrepreneurial environment will not be possible. Risk taking is required if entrepreneurs are to be successful, and if the downside is too steep, then risk taking will not take place. Most entrepreneurial ventures fail. That does not mean that the entrepreneur must fail. It is, however, unlikely that investors will invest in a project if the entrepreneur will not be financially harmed by failure. The culture that needs to be created is not one that implies that there are no financial consequences to failure, but rather that failure does not mean one should never try a new idea again.

It is not easy to create such a culture. Sovereign Wealth Fund financing may help. If the chances of success are improved, for example as outlined above, then professional portfolio managers are more likely to take a chance on the investment. Once that culture permeates society, it will be the current idea rigorously vetted that will matter, not past failures. Of course vetting includes making sure that the entrepreneur can actually do what she or he proposes.

In the final analysis then, the strategy that developing nations can employ to gain access to Sovereign Wealth Fund funding is to create an investment friendly environment. This includes at the infrastructure and entrepreneurship levels, good accurate information and institutional environments that are rigorous and business friendly. Corruption and administrative red tape should be kept to a minimum. Tax laws and levels should not be onerous. It is important not to chase investors away by searching for short-term gains over long-run growth.

FINANCING MODELS

In this section we will assume that steps have been taken by a material number of developing countries to meet the points noted above. That is, we will assume that a business friendly environment exists; meaning that administrative red tape is minimized, information is accessible and reasonably accurate, corruption is non-existent or kept at quite a low level, and that the tax environment is friendly.

Without meeting these conditions, it will be quite difficult to draw to a developing country continued investments by Sovereign Wealth Funds in infrastructure and entrepreneurship. Given that an investment friendly environment exists, how can institutions be created that will both serve development wants and Sovereign Wealth Fund risk management concerns? The following constructs may work.

Sovereign Wealth Fund Mutual Fund

This Fund can be developed for infrastructure investment, entrepreneurial investment or both. We think, however, that the idea of a Sovereign Wealth Fund Mutual Fund is particularly powerful with respect to financing entrepreneurial activities. Our bias is in favor of creating equity positions both in the investment in infrastructure and in the investment in entrepreneurial activities. Equity positions require a somewhat different assessment than do debt positions. We feel that the due diligence undertaken in equity investments will likely spur on better outcomes then will debt financing both for developing countries and for Sovereign Wealth Funds. The advantage of the mutual fund is that Sovereign Wealth Funds can pool investments. This means that while a project might require large amounts of funding, the risk can be shared across a number of different Sovereign Wealth Funds. The equity position requires, however, that rigorous due diligence takes place. Mutual Fund managers must be both extremely knowledgeable concerning the economies in which investments take place and have strong financial investment pedigrees. In investing in infrastructure, the Fund can be a passive investor in infrastructure projects that generate direct revenues or can be in the business of actively managing such assets. In the case of entrepreneurship, the Fund can take an equity position in the entrepreneurial center itself and/or channel equity funding into individual entrepreneurial ideas.

Alternatively, the Fund can invest in the debt instruments of developing countries as they issue debt in order to finance their investments in infrastructure or entrepreneurial enterprises. In this case the Fund is only worried about the ability of the government to pay back the money borrowed. Of course, if the money borrowed is backed only by the returns on the asset being financed, higher rates will be warranted and the Fund would need to conduct sophisticated due diligence with respect to the activity being financed. Alternatively, if general obligation debt is employed, the Fund need only worry about the government's ability to meet its obligations. It is particularly that type of funding that we feel creates a weak point for development. We feel that one of the great virtues of Sovereign Wealth Funds is their professional management talent. That talent is best employed when there is significant risk to the investor. We feel that one of the best attributes that Sovereign Wealth Funds can deliver to developing countries is their investment assessment skills. The closer the performance of the Fund is tied to the performance of the project being financed, the higher will be the quality of the projects chosen for financing.

In sum the advent of a Sovereign Wealth Fund Mutual Fund, designed to invest in development projects, will, we believe, lead to a large quantity of funding, improved project quality, and will reduce the risk of undertaking individual projects for individual Sovereign Wealth Funds. The Funds also garner important diversification benefits and hopefully strong returns. We believe that an equity fund is superior to a bond fund due to the type and level of due diligence required. We believe better quality projects will result from equity financing than from debt financing. We also take the position, not to in any way to criticize the success of micro lending, that equity financing is particularly powerful in the entrepreneurial arena. Finally, note that while an entrepreneurial center may be fully owned and financed by the Sovereign Wealth Fund Mutual Fund, the equity financing position taken by a Sovereign Wealth Fund in individual entrepreneurial projects needs to be limited in order not to overly reduce the incentive to the entrepreneur for creating a successful outcome.

The mutual fund may not prove to be a strong vehicle for micro-financing, but the idea that the Fund could provide seed capital should not be overlooked. We would imagine that the Sovereign Wealth Fund Mutual Fund could make loans to micro finance facilities and perhaps even help operate such facilities. Consulting services might also be sold to those finance facilities. Overall, however, we see the Fund as operating in more traditional investment arenas.

Sovereign Wealth Fund Infrastructure and Entrepreneurial Bank

The concept of development and infrastructure banks is well known. The idea here is that the bank would be fully capitalized by a coalition of Sovereign Wealth Funds and managed by their assign. Generally we feel that this structure works somewhat better for infrastructure investments than for entrepreneurial investments. The latter we feel is almost exclusively better served by equity financing. However, the financing of entrepreneurial centers as opposed to individual project would seem like a reasonable function for this bank.

The bank would fund, through a loan, individual infrastructure projects. The nature of the due diligence in valuation would depend on if the project's repayment was backed by the cash generating power of the project being financed or by the Treasury of the government(s) housing the project. The Sovereign Wealth Fund owners would almost assuredly prefer the latter, but there are significant monitoring benefits if the backing comes only from the project being financed. Of course the cost of borrowing would be higher in the case where the backing comes from project cash flows rather than general taxation revenues.

The benefits of this institution to developing countries would be the enhanced access to capital and the quality of analysis of the likelihood of project success. The monitoring by the bank would almost certainly have a positive impact on the quality and likely success of such projects. The benefits to the Sovereign Wealth Funds is that their capital contribution would be mitigated by the coalition contribution as opposed to having to choose whether or not to finance the entire project, they would gain important diversifications benefits, and hopefully they would gain solid returns on their investment in the bank.

WHY LIMIT FINANCING TO SOVEREIGN WEALTH FUNDS?

This is a paper analyzes the role that Sovereign Wealth Funds could play in developmental finance. We enter this discussion due to several interesting variables. First, Sovereign Wealth Funds hold significant capital under management. Therefore, it would be foolish not to consider them as a possible source of developmental finance. Second, while these Funds are interested in maximizing return for the risk they undertake, they can look at investments from a longer term point of view than can many other financial institutions. That is, they are generally not under the same pressure in defending their quarterly results as are other financial institutions. Third, Sovereign Wealth Funds are increasingly raising the quality of their management teams. That means that the monitoring of portfolio results and of the projects being chosen is of high quality. They will invest where conditions are good and projects have significant chances of success. That due diligence actually benefits not only the Fund but also developing countries because they are required to modernize their information and administrative bureaucracies if they are going to gain funds. Of course some Sovereign Wealth Funds may also include social or ethical values in their maximizing function. To that extent developmental financing may be important to them. Further, Sovereign Wealth Funds will gain significant diversification benefits from investing in developing economies. In turn, developing countries can gain much needed economic growth from the investment in infrastructure and entrepreneurial activities. The benefits of drawing Sovereign Wealth Fund capital into developing nations and the benefits of building an investment friendly environment may turn out to be significantly robust in terms of reducing poverty and building a sustainable growth environment.

However, the point of investigating Sovereign Wealth Fund financing was not to reduce the importance of gaining other funding sources. If the institutions noted above are formed and are successful, it is certainly likely that other such institutions with other types of investors would follow. Recruiting Sovereign Wealth Fund investment should not be seen in any way as reducing the desirability of gaining funds from other sources.

SUMMARY

This paper has focused on the role that Sovereign Wealth Fund capital can play in aiding economic development in the global economy. Currently there is one Fund dedicated to developing the African economy, the China-Africa Development Fund with around 5 billion dollars under management. We do not want to sugar coat the issue. Sovereign Wealth Funds may invest some Funds in developing countries for social reasons, but robust investment must be financially beneficial to the Funds. Therefore, developing nations need to work to create an investment friendly environment. We believe the benefits of the investment in infrastructure and entrepreneurial activities by Sovereign Wealth Funds meshes well with the goals these Funds typically have. We assume, for this paper's purposes, that Sovereign Wealth Funds are attempting to maximize the return on investment given a risk constraint. To this end we see the benefits of infrastructure and entrepreneurial investment as playing important roles in a Sovereign Wealth Fund portfolio. Further, while such investments can benefit the citizen owners of the Fund when made at home, investing in these activities abroad also conveys benefits not garnered at home. The key issues for Sovereign Wealth Funds are return and risk. We believe the opportunity to earn above normal returns is strong in investing in infrastructure given the likelihood of the strong increase in productivity expected to result for infrastructure investment in developing countries. We also see strong diversification benefits due to the low correlation one might expect between many Sovereign Wealth Funds' rich economies and developing economies. Of course, entrepreneurial investments also have the potential to yield strong returns, though as noted, if success is going to be obtained, it is important to create an entrepreneurially rich environment.

We suggest two potential institutional models that might be used to reduce the burden of go alone financing on Sovereign Wealth Funds. The first is a Sovereign Wealth Fund Mutual Fund and the second a Sovereign Wealth Fund capitalized Infrastructure and Entrepreneurial Bank.

For either of these institutional models strong management is the key to success. In order to be successful, portfolio managers need to balance the risk management wants of Sovereign Wealth Funds with the potential for returns on investments in infrastructure and entrepreneurial ventures.

As we made clear above, we tend to favor equity financing over debt financing. We believe the incentive to make excellent financing choices grows with the decision to take an ownership stake. We particularly feel strongly about the importance of equity investments in entrepreneurial ventures. However, investments in infrastructure also benefit from the type of analysis and monitoring required in an equity investment. Therefore, we favor the development of a jointly owned Sovereign Wealth Fund Mutual Fund. Fund managers would allocate funding to projects that they believe will earn solid returns for the risk. The managers should have performance goals and should be held accountable for short falls.

In the end there is no free lunch. Developing nations need to make sure they create environments that are investment friendly. Also equity investments mean that all the ownership is not local. That is the other side of the investment for developing countries. Some of the newly generated wealth will flow to the citizen owners of the Sovereign Wealth Fund. That should seem reasonable. After all it is the Sovereign Wealth Funds who bares much of the financial risk. Still, we would expect most of the economic benefit to remain in the developing country. In the end development depends, in part, on raising capital to build up infrastructure and to invest in creativity. Sovereign Wealth Funds could be an important source of that capital.

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APPENDIX A

We assume that Sovereign Wealth Funds seek to maximize the welfare of their citizen owners. Generally speaking we assume a two parameter utility function consisting of expected return and risk. However, it is possible and perhaps even likely that the utility function is richer than what is assumed. Ethical or social issues may impinge on Sovereign Wealth Fund investment policy. For example, the Norwegian Government Pension Fund Global is the world's largest Sovereign Wealth Fund. The Fund is prohibited from investing in a number of companies who are deemed to practice policies not consistent with Norwegian ethical standards. It is possible that at least some Sovereign Wealth Funds see a social or ethical obligation to help developing countries rise to acceptable income levels. In that case the investment decision to allocate some financial resources to infrastructure and possibly entrepreneurial investments in developing countries becomes utility enhancing on ethical or social grounds. The implication is that a Sovereign Wealth Fund might be willing to invest in a developing country's infrastructure and/or entrepreneurial ventures even if the expected return to risk ratio is lower than typically demanded. In this case, the Sovereign Wealth Fund's utility function takes on the following form:

$$U = U[ER_{P,} \sigma_P, ETH_P] \tag{1}$$

Where U = The utility gained from the investment portfolio.
ER_P = The expected return to the portfolio.
σ_P = The risk of the portfolio returns as measured by the standard deviation of returns.
ETH_P = The ethical or social benefits of the portfolio investments.

The partial derivatives are then $\delta U/\delta E(R_P) > 0$, $\delta U/\delta\sigma_P < 0$, $\delta U/\delta ETH_P > 0$.

In sum, ethically or socially desirable investments earning a lower expected return to risk outcome can generate the same utility as a less ethically desirable investment with a higher return to risk outcome.

Having made this point, however, we would argue that such a trade-off is in the hands of the investor. Developing nations should continue to work hard to be a desirable investment location under the assumption that most investors will employ the standard return/risk model.