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Aspects of Institutional Finance in Sustainable Development

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ABSTRACT

Since the establishment of the Post–2015 Development Agenda and the 2030 Sustainable Development Goals (SDGs), the international community has considerably maintained that private sector leadership will be a crucial factor in supporting sustainable development, especially in emerging and developing economies. Since 2008 many traditional commercial banks who are crucial financial actors have retreated from the capital markets due to increased regulations and mandatory capital ratios. Additionally, government expenditure has also decreased due to budget constraints in the post-crisis years. This retraction of traditional sources of finance, combined with a significant increase in the demand for capital has created multiple financing gaps throughout different markets. Considering this, the most considerable financing gap prevalent in the markets today is in infrastructure expenditure and long–term sustainable assets in developing markets. A potential solution to alleviate these long–term infrastructure and sustainable development funding gaps is unlocking the large pool of private sector capital, mostly in the hands of private institutional investors, such as pension funds, mutual funds, and sovereign wealth funds (SWFs).

Considering the importance of institutional investors in development finance, I identify some critical obstacles that institutional investors are having when considering long-term alternative market investments in developing economies. Many of these obstacles deal with the misalignment between investor mandate and the characteristics of long-term sustainable assets. To overcome this problem, I argue that SWFs are more effective in funding the infrastructure financing gap than other institutional investors. The inherent characteristics of SWFs and their governance structure makes them perfect candidates to provide the long-term financing needed to transition into a sustainable economy. This paper shows how SWFs are a necessary apparatus in reaching our global environmental and shared economic objectives.

KEYWORDS: Sustainable Development, Private Finance, Portfolio allocation, Institutional Investors, Sovereign Wealth Funds, Collaborative Investment Strategies.

JEL CLASSIFICATIONS: G15; G18; G23; G28; H54; J26

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I. INTRODUCTION

Addressing the economic and social consequences of climate change is one of the central socioeconomic policy concerns of our time and possibly the most critical. According to the current scientific consensus, the scale and pace of climate change has the potential to cause severe and potentially irreversible impacts on our entire socioecological system. Indeed, in recent decades, climate change has been accompanied by increasing global temperature, rising sea levels, deterioration of the biosphere, increasing volatility in weather patterns, and the depletion of our natural resources. These economic, social, and environmental challenges call for an urgent transformation across the entire investment value chain and our global social sphere. Climate change is not just a national issue but a global challenge, which must be addressed through joint capabilities and cooperation among all stakeholders.

In the coming decades, we must design strategies, implement reforms, and redirect focus on preserving the planet. Conversely, the future survival of our species and the conservation of our planets' entire ecological system requires the development of sustainable economic architecture and enhanced mobilization of capital toward "greener" assets (UNCTAD 2018). It aims to turn poverty, inequality, and lack of financial access into new market opportunities for smart, progressive, profit-oriented companies and their shareholders. While some may disagree with what constitutes a sustainable economy, there are a few principles seldom disputed: a sustainable economy aligns with nature's regeneration capacity, limits carbon emissions, strives for resource efficiency, fully employs renewable energy sources, and regulates producers to eliminate adverse outcomes. In the report *Our Common Future* published by the Brundtland Commission, defines sustainable development as “development that meets the needs of the present without compromising the ability of future generations to meet their own needs (Brundtland Commission 1987) At its core, sustainable development means investing in ethical companies, reliable infrastructure, and financing green innovation that will impact our futures. For consistency in this report, sustainable infrastructure, sustainable development, and green infrastructure are inclusively intertwined.

In tribute to the vision of the first environmental pioneers of the last century and those that came before them, in September 2015, the General Assembly of the United Nations,

adopted the 2030 Agenda for Global Economic Development which included Sustainable Development Goals (SDGs), also known as the 2030 Agenda (UN 2015). The SDGs were first designed in 2012 by the General Assembly of the United Nations, to replace the Millennium Development Goals (MDGs) (UNEP 2017). These newly established 2030 SDGs were ratified in 2015 and set ambitions to eradicate global poverty, hunger, illiteracy, disease, and global warming (UDAP 2018). A chart of the 17 SDGs can be seen below in figure 1. The SDGs outline 17 development goals that are set out to be achieved by 2030. The goals cover a variety of topics that ranges from social, economic, and environmental issues and correspond to 169 sustainable targets that detail how to reach the overall SDGs (UNEP 2017). While ambitious, the SDGs offer a common pathway for development policy that highlights the importance of our shared human values.

Figure 1. The 17 Universally Accepted 2030 Sustainable Development Goals

Source: United Nations (2015)

The "2018 Trade and Development Report" (UNCTAD 2018) explains that the growing field of sustainable development is an additional solution to the traditional economic

development issues, and it focuses on a more holistic approach to development. Considering this, development specialists who wish to adhere to sustainable implementation practices will have to confront the challenges of a changing economic landscape while at the same time including the three pillars of sustainable development: social development, economic growth, and environmental protection (Pop 2013). The first pillar of sustainable development is social development, meaning that development must effectually remove the barriers that limit people from living fulfilling and dignified lives. Second is economic growth, which is the promotion of societal wealth through trade and enterprise. The third pillar of sustainable development is environmental protection, its primary concern is the preservation of our planet and biosphere. Inherit in the structure of the SDGs; these three pillars provide an outline that can guide policy implementation and the economic mitigation of sustainable processes.

Institutional Investing and Alternative Investors

The recent regulatory and structural changes that occurred after the 2008 financial crisis considerably limited traditional bank and commercial financing options from both public and private market. Additionally, as noted in the "2017 SDG Investment Case" foreign direct investment to developing economies and emerging markets have weakened in the past few years causing more significant concern in financing the SDGs (Runde, Savoy, and Miller 2018). Thus, the retraction of traditional sources of financing and international development assistance from intergovernmental organizations like the world bank has prompted the formation of large financing gaps, which limit the flexibility of existing long-term infrastructure projects and the transition into a sustainable economy (Mather 2017). Indeed, in the decades to come, unlocking capital to achieve sustainable goals is one of the greatest challenges in advancing development initiatives. The United Nations Development Program (UNDP) concludes that "current financing and investment patterns will not deliver the sustainable development goals." Schmidt-Traub (2015) makes it clear that the global community will fall short of these climate policy initiatives by wide margins unless investment barriers are removed, stronger partnerships are formed, and more private resources that are in the hands of institutional investors, are mobilized to fill the critical financing gaps.

Institutional investors represent a diverse range of investor types, such as pension funds, mutual funds, insurance companies, and sovereign wealth funds (SWFs). These large financial companies receive less regulatory oversight than traditional commercial banks and have significant assets under management. In fact, Hans-Peter Egler and Raul Frazao (2016) mention that these large institutional investors facilitate approximately 70 percent of the global trading of financial assets. One of the commonly cited advantages of institutional investors is that they can easily inject liquidity into global capital markets and supply financing into areas requiring it. These investors often prefer to take long-term horizons on investments that offer capital scalability and that have adaptable liquidity features (Kharas and McArthur 2014). As such, given the enlarging infrastructure financing gap, institutional investors and other private sector financial actors will be major players in realigning the global economy and laying the foundation for a decarbonized future.

Due to their inherent importance in the global economy, institutional investors will have a critical responsibility in conducting a leadership role in transitioning into a low-carbon economy and as long-term asset managers. With the creation of the SDGs, investors now have a tremendous opportunity to support this global agenda by increasing the amount of capital into high-impact projects that address societal and economic challenges. According to Johnathan Woetzel et al. (2017), just achieving one goal (such as gender equality) could contribute up to $28 trillion to global GDP by 2025. The SDGs demand that financial managers coordinate investment synergies and adhere to a common governance and investment criteria which aligns with a common environmental, social, and governance (ESG) framework (Mather 2017).[1] Amit Bouri et al. (2018) notes that the ESG criteria is used in the financial markets and by investors to evaluate corporate behavior, strategies, and practices so that investors can determine the future performances of companies.

On the other hand, governments and international organizations must maintain a responsible policy framework to allow for further public-private coordination that addresses the

[1] The environmental, social, and governance (ESG) is a set of environmental standards that investors use to critique investment projects. The environmental criteria's' aim to address how companies perform as stewards of the natural environment. Social criteria's purpose is based on the companies' ability to address the concerns of the communities which it operates and the clients it works with. The governance criteria is applied to the company's leadership, management, and shareholder rights to ensure the effective management of the organization (Pandit and Tamhane 2018).

core concerns of the SDGs. As stated in the 2030 Agenda for Sustainable Development, both policymakers and investors must ensure that neither humans nor our industrial activity will harm or burden the ecosystem in which we live (UN 2015). This is especially true in developing economies and emerging markets, which offer the most significant opportunity for investors to act as a catalyst for structural transformation. If the SDGs are to be achieved in developing countries, it must be through more significant calibration between investors and governments, and by forming more diverse financial partnerships.

Outline of This Thesis

Throughout this report, I will address obstacles limiting the 2030 Agenda and show how they can be overcome. I confirm that it is vital for developing nations to obtain private institutional finance to transition to a sustainable economy. In chapter 2, I give a historical account of sustainable economic policy and how the 2030 Sustainable Agenda evolved. In chapter 3, I discuss the attributes of private infrastructure investment and the role institutional investors can play in transitioning to a low-carbon economy. I give insight on investors strategies and analyze the result of portfolio choices, in relation to their balance sheet structure, risk/return trade-offs, short vs. long-term returns, and general state of aversion.

In chapter 4, I analysis the role that the public sector and host governments can play in offering direction and guidance for investors who wish to invest in their economies. I also discuss corporate governance issues and how the in chapter 5, I discuss the importance of SWFs and demonstrate that SWFs critical to financing long-term investments in capital projects, I recommend that the inherent characteristics of SWFs make them a unicorn in development finance. I give examples of how SWFs will be key players in sustainable development efforts, through their ability to optimize their relations with global organizations, governments, and other investors. I show that improved and legally requiring reporting standards will enhance transparency among SWFs. I also offer policy recommendations for investment portfolio practices and financial managers who have the ability to influence the capital flows of SWFs. Finally, in chapter 6, is my conclusion.

II. THE SUSTAINABLE PATH: AN HISTORICAL ANALYSIS

In order to study the roots of sustainable development and interaction between humans and the environment, it is essential to analyze the evolution of social development and human progress that led to its development. Jacobus Du Pisani (2007) explains that the demand for raw materials and their impact on the environment have been a constant issue throughout human history. While the roots of sustainability can be traced back to ancient times, the emergence of the industrial age which corresponded with the depletion of our natural resources heightened fears that unconstrainted growth will have adverse effects on future generations. At the dawn of the industrial revolution, Thomas Malthus (1798) examined the relationship between population growth that was an attribute of an expanding economy and the decline in natural resources. Others, like Malthus pointed to similar scenarios. In the book *Our Wonderful Century,* Alfred Wallace (1898) concluded that the damage done by the "reckless destruction of the stored-up products of nature and regarded exploitation of the rain forests as an injury done to our posterity."

By the 20th century, as a result of the industrialization of the previous century, all aspects of life, from the material economy to the very fabric of society itself, had been altered. It was soon realized that progress had its limits, and while industrial capitalism brought tremendous advances in economic growth and technology, it also devastated the environment that supports life. As such by the latter part of the 20th century the commonly held scientific consensus was that without concrete global action, then environmental degradation and the changing climate will burden all sectors and all nations. This follows Woetzel (2017), who warns that without aggressive action to control carbon emissions, the progression of climate change could devastate our ecosystem, and possibly wreak havoc on the world economy.

The good news is that in recent decades, strenuous initiatives to build a flexible, sustainable policy framework for global social and economic development have been multiplying and accelerating around the world. In responding to the environmental degradation that was attributed from the industrial age, the international community has diligently formed enormous global initiatives with all stakeholders, including governments, corporations, investors, and even asset managers. These initiatives have prompted governments to realign

their economic development policies with sustainable principles. Speaking on behalf of the global response to climate change, the World Wildlife Fund (WWF) stated in their annual *Living Planet Report* (2018) "although the biodiversity of the planet is decreasing, the global commitments to addressing these issues has the possibility to reverse the effects of climate change and environmental degradation."

Yet the extent to which sustainable policies have infiltrated the global economy has been limited. The investment patterns and capital formation in sustainable sectors are currently insufficient to meet the demands of the changing economic system and lack the capability to achieve the 2030 Agenda, Daniel Runde, Conor Savoy, and Aaron Miller (2018) explain the largest constraint in sustainable investing is measuring the impact of assets that investors carry in their portfolios. In particular, investors have difficulties in knowing if their allocations are improving the SDGs and helping achieve the goals set out in the Paris Agreement. Addressing these challenges in portfolio management is key. Thus, Simon Zadek and Nick Robins (2014) reiterate that providing an efficient and effective sustainable investment guideline will be needed to achieve more significant climate-related improvements. As was noted, the perplexities of these challenges, has motivated the international community to formed new initiatives that aim to tackle the environmental degradation attributed to unsustainable economic processes. These new initiatives aim to redirect the course of economic development onto a more sustainable path.

With that said, 2015 was a historic year because it marked the dawn in a new age in sustainable development. That year saw three crucial agreements that will define the global relations for the coming decades: namely, the 2030 Sustainable Development Goals, the Addis Ababa Action on Financing for Development, and the Paris Climate Agreement (UNCTAD 2018). In the wake of these three momentous climate deals, governments, international organizations, and private investors have been diligently coordinating blueprints and strategies to offer new perspectives and support for sustainable development efforts. Along with other global and national initiatives,[2] These new development strategies (Paris Climate Agreement,

[2] These include the Rio Declaration on Environment and Development, the World Summit on Sustainable Development, the World Summit for Social Development, the Program of Action of the International Conference on Population and Development, the Beijing Platform for Action and the United Nations Conference on Sustainable Development.

the SDGs, and the Addis Ababa Action Agenda), were known as the Post-2015 Development Agenda during their formation between 2012–2015. The new development agenda has ambitious to support the transition of the entire economic system and guide investors into a more sustainable future. More importantly, is that these agreements and treaties represent the most unifying global initiatives that have ever taken place on the international stage. In this paper, I refer to these three these initiatives as the 2030 Agenda.

The 2030 Agenda outlines a common shared world vision that is inclusive, holistic, measurable, and meaningful (OECD 2014). It's inclusive because it provides a framework that seeks to lower the asymmetries between the developed and developing economies. It's holistic because these global partnerships ensure that that ending poverty, inequality, and other deprivations are its highest priority. Finally, the agenda is measurable and meaningful because it ensures that global stakeholders can cooperate more efficiently and track the progress of sustainable initiatives through a more robust and transparent accountability system. In terms of addressing the issue with climate change, perhaps the agenda is the most meaningful global pact ever formed because it integrates climate mitigation and adaptation processes into a consistent and rigorous manner, addresses the setbacks in sustainable assets, and create synergies across investment arenas (Nicolai et al. 2015). It concludes that transitioning to sustainable economic processes requires the effort of all stakeholders in the economy, from international organizations to individual governments, and gives more considerable attention on the mobilization of private capital strategies (Nicolai et al. 2015).

Consequently, to ensure the success of the SDGs, policymakers and intergovernmental organizations have the responsibility in coordinating guidelines and incentives that attract investment into sustainable sectors. In fact, UNCTAD (2018), UNDP (2018), estimated “that globally achieving the SDGs will take between $5 - $7 trillion annually. Besides the costs, the most important aspect of meeting the SDGs will be the challenge of measuring the progress of these societal objectives, deploying private sector capital, and strategically aligning investment mandates with green assets, especially in developing economies (Nicolai et al. 2015). In this next section, I will discuss the movements that had taken place to resolve some of the challenges within the Post-2015 Development Agenda and the formation that lead to the formation of the 2030 Agenda.

The Addis Ababa Action Agenda

Within the development community, the conflict between sustainable development and developing economies has been a persistent obstacle. Despite the improving economic and social trends as a result of the Monterrey Conference[3] established in 2002, developing countries still face enormous challenges in implementing these sustainable initiatives. Once again, in forming the Post-2015 Development Agenda, it became clear that developing countries will require a significant amount of capital and financing focus (World Bank 2013). This follows Egler and Frazao (2016) who make it clear, that due to differences in local conditions, cultures, and government frameworks, some options that might work in one country may not be suitable in another country. To address these asymmetries in capital formation faced by smaller actors, in September 2015, the United Nations held the Third Financing for Development Conference in Addis Ababa, Ethiopia (Anderson and Chonghaile 2015). The product of the conference was the Addis Ababa Action Agenda (also referred to as Action Agenda), and it established a framework for applying sustainable development through three dimensions, inclusive economic growth, protecting the environment, and promoting social inclusion by 2030.

The Action Agenda was established based on solving the shortcomings of previous development agreements and to accelerate sustainable growth in emerging economies. Furthermore, it provided a framework to consider country-level concerns within a global context. A key highlight of the report was that it established guidelines for developing nations so they can efficiently mobilize finance in their economies. The guidelines included two important premises. First, there must be a shift in diplomatic practices that allows a greater contribution to global policymaking from emerging and smaller nations. A recent United Nations report noted that "if inequalities are going to be addressed, development failures improved, and greater opportunities provided, social progress in emerging economies must be

[3] The 2002 United Nations International Conference on Financing for Development or the Monterrey Conference, resolved to address the challenges of financing for development around the world, particularly in developing countries. The goals of the conference were to eradicate poverty, achieve sustained economic growth, and promote sustainable development. The conference saw the cooperation between heads of states, the United Nations, the World Bank, and the International Monterrey Fund (U.N. 2015).

one of the main priorities of development" (UNDP 2018). Second, policymakers must strike a balance between their public responsibilities and the facilitation of productive investment from private investors (Anderson and Chonghaile 2015). Based on these premises the Action Agenda went beyond the Monterrey Conference to fully consider the more extensive and more diverse financing needs associated with sustainable development and recognized the crucial need for private finance to support the SDGs, particularly in developing economies (Anderson and Chonghaile 2015).

The Action Agenda stressed the importance of investors realigning portfolios to consider long-term investment strategies, and it spelled out the strategies that nations can implement to attract private financial resources to their economies. It stressed the importance that governments design a flexible policy framework that focuses on the collaboration between private finance and public development efforts. It encouraged actively learning and working with other governments to ensure the best policy approach to implement the SDGs. It gave examples of how some progressively minded nations have taken the first steps to combat climate change by designing new policies to implement the SDGs and the Paris Climate agreement. Finally, the Action Agenda showed how some policies are improving development efforts and how more initiatives can foster greater calibration among governments, multinational development banks, and the private sector (Anderson and Chonghaile 2015).

In short, the Action Agenda addressed sustainable efforts in developing countries and highlighted the need for smaller actors to take more of a leadership role in development policy. Thus, amid its vast array of complexities and constraints, the Action Agenda encouraged that development finance implement more holistic policies and address the social, economic, and environmental concerns associated with the overall well-being of society. Mark Anderson and Clar Ni Chonghaile (2015) highlight that the ratification of the Action Agenda signified that its members are committed to “promoting peaceful and inclusive societies and in advancing fully towards a more equitable global economic system where no country is left behind.”

The Paris Climate Agreement

After the formation of Addis Ababa Action Agenda and the 2030 Agenda for Sustainable Development, the next major international summit was the Paris Climate Agreement which took

place in December 2015. The primary purpose of the Paris Agreement, also called the Paris Accord, was that it established internationally recognized goals to keep global temperatures from rising above 2ºC from pre-industrial levels (1850 -1900) and to pursue efforts to limit the temperature increase even further to 1.5ºC (Voysey, Stacey, and Allison 2016). The agreement was signed by 175 states and represents the most comprehensive international agreement that considered the health of the planet as its main priority. It was also instrumental in strengthening the ability of countries to deal with the impacts of climate change and formed a cohesive international strategy to limit greenhouse gases.

Central to the success of the Paris Agreement was the intended nationally determined contributions (INDCs). Article 4 of the Paris Agreement (2015) states, "that member nations determine their implementation plans, measurement variables, and reporting procedures as to reduce carbon emissions." After each nation voluntarily submits their INDCs, these INDCs will maintain a coherent system for the systemic global reporting of emissions. As such, by incorporating these INDCs, signatories have systematically strengthened the global response to climate change. For example, the United States, who later had ambitions to withdrawal from the deal, promised to cut carbon emissions up to 28 percent from 2005 levels (Bielenbeg et al. 2016). Other countries, many who have economies heavily reliant on non-renewable resources announced even higher ambitions. The main point is that the INDCs represent a global carbon budget, that can be used as a tool to combat climate change (UNCTAD 2018).

The grand ambitions of the Paris Agreement present an immediate challenge to scale up green finance, particularly in long-term investments and infrastructure. To reach its goals, the deal emphasized the role that private finance must play in supporting the energy transition and infrastructure demands of developing economies (Voysey, Stacey, and Allison 2016). Prioritizing private finance follows the Paris Agreements third objective, "that finance flows must be consistent with a pathway towards lower greenhouse gas emissions and climate-resilient development" (Paris Agreement 2015). In other words, the Paris Agreement built a framework for development, that ensured more efficient resource allocation through long-term decarbonization strategies and the reallocation of those resources to low-carbon assets. As such Voysey, Stacey, and Allison (2016) note, "that signatories of the Paris Agreement reaffirmed that the policies are irreversible and reflect a common but differentiated responsibilities and

respective capabilities." In short, the Paris Agreement was an important step in creating a global network that will make transitioning to a sustainable economy much more realistic.

Challenges Ahead: Transitioning to a Sustainable Economy

One of the first pioneers of environmentalism, Paul Hawken (1993), once said, “the first rule of sustainability is to align development with natural forces, or at least not try to defy them.” Hawken believed that ecological problems that characterize our civilization mainly are structural issues and are not unfixable. Consequently, despite valiant efforts by the international community to address climate change, the level of greenhouse gases continues to rise, investment is insufficient, and traditional energy sources remain in high demand. In fact, in 2015 the “Development Progress” report, gave the international community an "F" in achieving the SDGs' related to reducing income inequality, combating climate change, eliminating waste, and ensuring the protection of marine environments by 2030 (Nicolai et al. 2015). The report notes that at the individual country-level, progress can be possible, but only if governments work cohesively with their citizens and put strategies in place to meet the goals.

That said, some countries like the United States—who is notably one of the world's largest polluters—has been actively seeking to roll back the progress that has been achieved in federal and international environmental policy. Since 2017, the US has planned to withdraw from the Paris Agreement as well as other global climate initiatives in the coming years. While the current state of political affairs in the U.S. is worrisome, the U.S. will not actually be able to completely withdraw from the Paris Agreement until 2020, due to the initial four-year agreement that was signed in 2016 (Voysey, Stacey, and Allison 2016). As a result of the U.S. retraction in multilateral leadership, many international, state, and local actors have tried to fill the void in the fight against climate change (Pal 2018). In fact, over 100 city and local officials represented the US at the 2017 Unite Nations Climate Change Conference in Bonn, Germany to show that many American leaders and local citizens are willing to continue the fight, despite the federal government’s retraction.

The ratification of the Post-2015 Development Agenda marked the dawn of a new age in development finance and international cooperation. A recent UN report explains that "the Post-2015 Development Agenda signifies that the global initiatives which aim to preserve our planet

must go hand-in-hand with the strategies that spur economic growth and improve investment opportunities" (UNEP 2017). Its creation seized the vision of so many who have been fighting for a clean and sustainable future for the last century. One such person was, John F. Kennedy (1963) who said: "United there is little we cannot do in a host of cooperative ventures." It is not to bold to state, that the initiatives that established the 2030 Agenda possibly have formed the most important cooperative venture of our modern age.

The Emergence of Sustainable Development

It is essential to recognize that this excitement directed towards climate health and environmental preservation has not always been a central concern in economic development policy and is relatively a recent phenomenon over the past quarter century (U.N. 2015). By the late 1960s and early 1970s, it became increasingly evident that there were significant downsides to scientific and technological advances of the last hundred years. The idea of a sustainable economy was first detailed in the 1972 publication *The Limits of Growth* (Meadows and Meadows 1972). Its authors emphasized the importance of rethinking economic development and realigning policy to include environmental considerations. First, the book addresses issues faced by exponential global economic growth and the damage that CO_2 emissions have had on the environment. They predicted that if the current economic system were to remain unchecked, life on earth would not survive much past the year 2100 (Meadows and Meadows 1972).[4] After the publication of the book, many international organizations, such as the United Nations, began to shift their policy to address the issues of climate change and environmental decay. Du Pisani (2007) regards the publication of the Limits to Growth as a key moment in sustainable development history that "put the anxiety about environmental problems into a more focused discussion and onto a political agenda."

Later that same year, the growing need for environmental policy spurred the United Nations to hold its first conference on the Human Environment in Stockholm, Sweden (U.N. 2015). At the conference, the Swedish government—who at the time was instrumental in

[4] Limits of Growth was published in 1972 by Donella H. Meadows and Dennis Meadows. The goals of the book were to gain insights into the limits of our world system and identify the long-term behaviors of that impact the natural systems. Its predictions show that given business as usual with no changes to historical growth trends, the limits of growth on earth would become evident by 2072.

outlining the path to a more sustainable economy—provided four principles for reaching a sustainable socioecological system. Anderson and Chonghaile (2015) explain that these four principles can be used as a care instruction for our planet. They include reducing our dependence on fossil fuels and heavy metals; reducing our dependence on synthetic chemicals; reducing the destruction of our natural environment; and ensuring we are not limiting the global demands of people now or in the future, especially those in the least–development economies (LDCs), by destroying the resources that support us. The principles urged private and public leaders to integrate sustainable policies as a central theme in their organizations and recognized that climate concerns can only be addressed through regional and international cooperation.

The recognition of the term "sustainable development" was further outlined in the 1987 Brundtland Commission report, *Our Common Future* (1987).[5] The report played an essential role in addressing several concerns related to development in the coming century, and it recognized that human activity and production processes were having detrimental impacts on the environment. The message was evident throughout the report: the global ecosystem that supports life cannot support the present rates of our economic and population growth in the centuries to come (IISD 2010). It outlined that "sustainable development is a type of development which meets the needs of the present without comprising the ability of future generations to meet their own needs" (Brundtland Commission 1987). Although at the time the report might have fallen short of its initial goals, in the following years, the imaginative framework of the report would be a significant turning point in sustainable development initiatives.

The new consensus that had grown through the advances in sustainable economic policy in the 1980s would lay the foundation for practical solutions for the coming decades. It was in the 1990s that public financing institutions and commercial banks began applying sustainable principles to investments, such as incorporating disaster-resilient infrastructure, reporting climate-risks, and applying carbon output measurements (UNEP 2018). Private investors began

[5] The Brundtland Report (1987) alerted the world to the dangers that humans are having on the environment and stated the urgency to employ economic practices that could be sustained without depleting the natural resources around us. The report highlighted the concept of sustainable development: environmental protection, economic growth, and social equity. The report suggested that these three principles are simultaneously possible and that each country is capable of achieving its full economic potential while at the same time enhancing its resource base.

adjusting their investment mandates to include sustainable principles, such as ethical management practices, social impact funds, and carbon emission assessments. These developments were spawned by the 1992 First International Conference on Sustainable Development, (also known as the Rio Earth Summit) organized by the United Nations Framework Convention on Climate Change (UNFCCC). The Rio Earth Summit was the international community's first attempt at outlining strategies to lay the basis for a more sustainable pattern of development (IISD 2010). It offered clear ethical guidelines for corporate practices and maintained that sustainable policy must be flexible enough to adapt to changes in the economic systems that it commands. While the term sustainable development was never explicitly mentioned at the conference, the international community commonly agreed on the notion that both development and the environment could be managed in a mutually beneficial way (UNEP 2017). In other words, sustainable development was meant to find a balance between the limits to growth and the need for holistic development.

In 1997, the Kyoto Protocol was established in Kyoto, Japan. At this conference, parties agreed to establish targets and timetables to reduce global emissions, particularly in developed countries like Canada and Germany. The signatories agreed to cut carbon emissions by 5 percent below 1990 levels and report their progress. The Kyoto Protocol allowed nations to incorporate a series of market-based mechanisms that enabled developed countries to use both public and private forms of carbon-emission trading techniques to achieve their targets. At the time, the Kyoto Protocol influenced many private sector investors to incorporate an environmental, social, and governance (ESG) criteria into their decision-making processes (UNEP 2017). While the treaty faced continued discrepancies, it eventually came into effect in 2005, but some large countries, like the U.S., were not participants. Despite the initial failures of the Kyoto Protocol, the persistence of the international community remained. The countries who did adopt the protocol's commitments—lowering greenhouse gases through national measures—began to implement its considerations between 2005 and 2012. Though the Kyoto Protocol had its challenges, it was a major steppingstone to the much larger Paris Agreement proposed in 2015.

As we entered the new millennium, sustainable development and low-emission energy sources became a premier topic of interest. The advances in technology and data analysis in

climate modeling made it clear that global warming was severely devastating our planet and presented dire consequences for our future (IISD 2010). During the early 2000s, the topic of sustainable development had dominated the discussion boards and policy considerations of international organizations, such as the World Bank and the United Nations. At the heart of these policy discussions were the Millennium Development Goals (MDGs). The MDGs which were established in 2000 at the Millennium Summit of the United Nations, marked a major change in development strategy and U.N. policy (UN 2015). It was here for the first time in history that the United Nations narrowed its focus of development standards to several universally accepted goals, giving countries an outline to direct investment efforts and internal development procedures. Mainly, the MDGs focused on poverty alleviation and disease eradication, but fell short of requiring any legally binding reporting disclosures (World Bank 2013). The legacy of the MDGs was powerful and paved the way for further progress to be made in climate policy and sustainable development practices. Later, the United Nations International Conference on Financing for Development hosted the Monterrey Consensus in 2002, which distinguished the need for developing countries to take responsibility for their poverty reduction and the need for rich countries to support them through economic aid and international trade (World Bank 2013). It embodied a multidimensional nature of the global development challenge by promoting a more holistic and adaptable approach to the MDGs. As was noted in by Anderson and Chonghaile (2015) the Monterrey Consensus promoted "open, equitable, rules-based, predictable, and a nondiscriminatory multilateral trading and financial systems that will benefit all countries."

The establishment of the Kyoto Protocol, the MDGs, and the Monterrey Consensus, laid out new development architecture that redirected policy toward confronting the challenges faced by the world's most vulnerable people (IISD 2010). While these agreements were major milestones in their respective subjects, they had their deficiencies, mainly compliant countries had issues in reporting, implementing, and measuring progress. Furthermore, it was unclear whether the goals would improve development outcomes or alleviate the growth constraints in developing economies. A major setback in these agreements was the inability for them to address the consequences of climate change. Though they could offer guidance and recommendations, such intention would inevitably fall short of achieving their intended goals.

Climate change became more of a prevalent issue in the new millennium after many devastating climate events in the first decade of the 21st century—whether it was horrific hurricanes (ea. Katrina, Andrew, etc.), wildfires in California, or tsunamis in the Pacific—these events posed significant problems to global infrastructure, health, and development. To address these issues, the United Nations in 2012 began forming the 2030 Agenda that would guide development policy through the years after 2016–2030. The main priority of the 2030 Agenda, was to address environmental, economic, and social concerns by providing countries a common framework to guide development strategy.

Consequently, just in this century, we will see billions of people in developing economies obtain a decent standard of living, witness an enormous growth in population, and will have to deal with the increasing demands of goods and services. Considering these factors, the Principles for Responsible Investing (2017) states that the current economic system will not be able to sustain the future global demand, without destroying the ecosystem that supports life (PRI 2017). As such, the 2030 Agenda and the Paris Agreement provide an excellent framework to go about achieving the economic transformation that is required in the next decade. As the impacts of climate change, demographic shifts, and the transition towards green energy become more acute, addressing climate change and the goals outlined by the SDGs, require fast and collective action and a continued commitment to low-carbon development. This correlates with the recommendations of the 2018 report "Achieving the Sustainable Development Goals," (UNCTAD 2018) which mentions that transitioning to sustainability requires radically reforming and refocusing investment from fossil fuels and high–carbon technologies to low–carbon technologies.

More than ever, achieving a sustainable economy will require more partnerships and collaborative initiatives with both private and public actors. The international community's increasing reliance on private institutional investing has shown how institutional investors have redefined cross-border investment coordination and development policy throughout the world (Egler and Frazao 2016). The increasing importance of both public and private initiatives follows SDG 17, which refers to multi-stakeholder engagement and the need for greater partnerships, particularly in relations between private sector financial institutions, corporations, and governments. In the end, while transitioning into a sustainable economy will not be easy, its

achievement would result in efficient and livable cities; low-carbon, smart and resilient infrastructure; and the restoration of degraded lands and the natural environment (New Climate Economy 2018).

As the former Secretary General to the United Nations Ban-Ki-Moon said in 2016, "I am counting on the private sector to drive success….Trillions of dollars in private funds are to be redirected towards the SDGs, creating huge opportunities for responsible companies to deliver solutions" (U.N. 2015). In short, the 2030 Agenda represents the first time that the international community has repeatedly emphasized the greater need for private sector leadership to meet the sustainable initiatives.

III. THE ROAD AHEAD: ISSUES IN FINANCING SDGS

While the 2030 Agenda and its initiatives were necessary steps toward a world that is more prosperous and inclusive, there are still major obstacles that are limiting progress in achieving sustainable economic processes. Arguably, the most significant barrier to achieving sustainable development is in the tremendous amount of investment coordination and costs associated with long-term socioeconomic projects, such as infrastructure and real estate assets (Kharas and McArthur 2014). The infrastructure financing gap is a major concern for emerging and developing economies, given that they will account for 67 percent of the global economic growth by 2030. Amal-Lee Amin and Karen Lockridge (2017) explain in that in the next thirty years, population growth, migration, technological enhancement, and urbanization trends will create critical needs for infrastructure development, especially in developing economies.

Albert Hirschman, in his 1985 study on *The Strategy of Economic Development* showed that the proper development of infrastructure, including roads, ports bridges, schools, etc. is crucial to the success of any economy. He continued by describing that large-scale infrastructure planning is “a matter of faith in the development potential of a country or region” (as cited from UNCTAD 2018). Hirschman analysis follows extensive evidence proving that proper infrastructure planning can increase economic growth and development efforts (Tyson 2018; Anderson and Chonghaile 2015; Bhattacharya, Romani, and Stern 2012). Spending on infrastructure improves access to essential public services, reduces inequality, fosters inclusion,

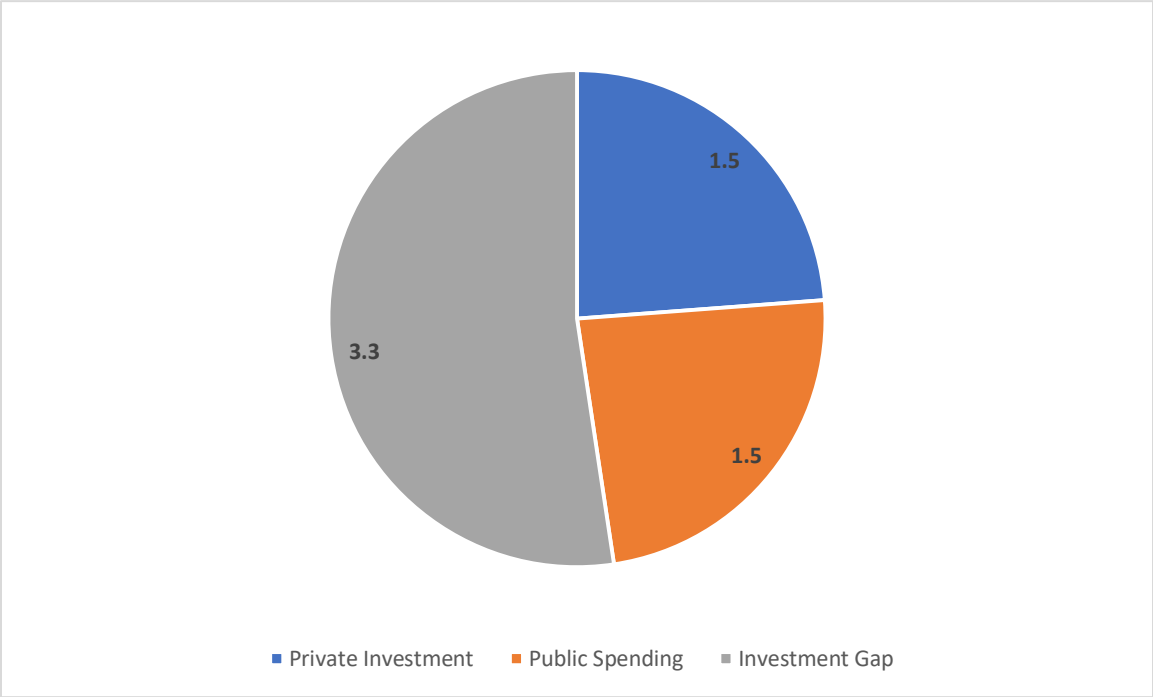
and supports innovative industrial sectors. UNCTAD (2018) notes that investing in infrastructure can simultaneously address supply side constraints and thereby raise the productivity of other sectors in the economy. As such, the development of infrastructure lies at the center of the economy's capacity to provide productive resources and alleviate poverty. Likewise, the establishment of secure infrastructure networks is likely to improve the investment attractiveness of the country's economy (OECD 2015).

Since infrastructure is the backbone of the traditional economy, it means that sustainable infrastructure is the backbone of a sustainable and resilient economy. According to Anderson and Chonghaile (2015) sustainable infrastructure is defined as "infrastructure that integrates the environmental, social, and governance (ESG) aspects into project planning, building, and operating phrases, while ensuring the resilience of the climate and the ecological community." Often, building sustainable infrastructure will incorporate highly trained project managers and technological systems and environmentally safe materials and construction practices. It even includes public service goods, such as environment safe public buildings, bio-diverse parks, safe, clean neighborhoods, and reliable renewable energy sources (Tyson 2018). Without sustainable infrastructure, it estimated that with the given current economic growth rates and demand, expanding traditional infrastructure projects could lead to a 6–degree Celsius rise in temperatures above preindustrial levels. On the contrary, expanding sustainable infrastructure with same economic growth rates would mean emissions would be consistent with the Paris Agreement goal of keeping the temperature from rising above 2-degree Celsius (Beilenberg et al. 2016).

This vital need for sustainable infrastructure and industrial development is outlined in goal 9 of the SDGs: build resilient infrastructure, promote inclusive and sustainable industrialization (UN 2015). Additionally, goals relating to clean water (6), affordable and clean energy (7), decent work (8), sustainable cities (11), production (12), and partnerships (17) all mention, in some regard, the need for sustainable infrastructure. As the 2018 "Better Growth, Better Climate" report concludes "the next 10–15 years is a unique 'use it or lose it' moment in economic history," that without long-term sustainable infrastructure financing we will lack the capacity to support the economy of the future and lock the world into a high carbon pathway (New Clime Economy 2018).

Despite its importance, investment in infrastructure has not been enough to meet the economic demands of today and certainly is not keeping on par with the growth rates needed to achieve the 2030 SDGs. As of 2017, total infrastructure spending was around $2.5–3 trillion annually for both advanced and developing economies, but Bielenberg et al. (2016) estimates that to transition into a sustainable economy, infrastructure financing will have to double from the current expenditure of $2.5-3 trillion to $6-7 trillion annually. Figure 2 shows, on average, there is about a $3.3 trillion annual financing gap in infrastructure development. In particular, Tyson (2018 estimated that developing economies will require around $1.5–2 trillion of long-term financing needs annually.

Figure 2. Estimate Infrastructure Investment Volume per Year 2017. USD Trillions



Source: Egler and Frazao (2016)

The 2030 Agenda maintains that the implementation of proper sustainable development addresses the core concern for our ecosystem decline, widening social fractures, and unrealized economic potential. Bielenberg et al. (2016) note that ensuring infrastructure meets sustainable standards will be a critical determinant of future economic growth and overall society improvement. Therefore, according to the 2018 report "Better Growth, Better Climate" ensuring

that new infrastructure development meets the standards outlined in the Paris Agreement, will take an additional $4 trillion or about $270 billion annually. The report estimates the cumulative infrastructure costs for the entire period of 2015–2030 could amount to around $90 trillion, almost double the estimated $50 trillion value of the world's existing infrastructure stock. Over a project's life cycle, however, sustainable infrastructure can save money and generate healthy economic returns for investors and the communities they impact.

According to Beilenberg et al. (2016) "The financing gap for sustainable infrastructure is in large part the result of poor policies, institutional failures, and lack of investor familiarity with greener technology and projects." Thus, the current bottlenecks in sustainable infrastructure financing limit long-term economic growth, industrial innovation, and diminishes the capacity to achieve sustainable development. At the same time, delays in the realization of infrastructure projects that lack funding pose additional costs on the society, affecting the least-developed economies the most. Torsten Ehler (2014) explains that infrastructure projects which are insufficiently funded are usually "badly designed and cannot deliver expected performance." Yet the need for resilient and sustainable infrastructure is more significant than ever, and governments are consistently being pressured to ensure that infrastructure will be capable of supporting the demands of rising populations, demographic shifts, and higher economic growth rates. This presses the question, if the demands for infrastructure are so urgent, then why is there a lack of successful investment projects? To answer this question, it is essential to consider the two persistent financing issues within long-term infrastructure projects that governments face.

On the one hand, the traditional public sources of financing infrastructure have retreated in recent years due to fiscal constraints and high government debt-to-GDP ratios. Considering that the government is primarily responsible for infrastructure development, insufficiencies in public infrastructure expenditure creates both economic as well as social challenges. In particular, for many countries, the level of investment required for infrastructure exceeds their budgetary possibilities (UNCTAD 2018). This is more of a concern in developing economies which often have low tax-to-GDP ratios and a limited capacity to collect revenues from investors and multinationals. Given the government's inability to finance its liabilities, subsequently, creates scarcities of public financial revenues, forces governments to serve other

competing priorities (healthcare, social security, etc.) and focus less on infrastructure (Egler and Frazao 2016).

On the other hand, many developing economies face underlying governance issues, such as corruption and political instability. This was noted by Anderson and Choghaile (2015) who explain that "funding infrastructure is being tragically undermined by international tax evasion, avoidance, and secrecy laws, costing the least developed countries billions of dollars in capital loses annually. They continue to explain that this, "lack of accountability and control of directing capital flows for financing development has devastated economic growth" (Anderson and Chonghaile 2015). In short, these public fiscal shortfalls limit the government's ability to meet their socioeconomic goals and provide for the common well-being of their citizens. Furthermore, including the additional costs associated with sustainable infrastructure and development efforts, means that these governments be even more constrained and lack the ability to finance public needs. To solve this problem, governments will need to find creative solutions to fill the financing gap that is limiting them from achieving their national sustainable infrastructure development goals.

Optimizing Institutional Capital with Sustainable Infrastructure

A study by Woetzel et al. (2016) who found that the share of total infrastructure financing in GDP will need to increase from around 3.8 percent to 5.6 percent in 2020. In emerging markets, the required increase will be even more considerable. Foreseeing this public financing conundrum, Egler and Frazao (2016) assert that though sustainable development initiatives will still be mostly funded through domestic public expenditure and official development assistance, the private sector will need to increasingly contribute to infrastructure through developing innovative solutions to fill critical gaps that the public sector has trouble addressing. Tyson (2018) states there is a growing consensus that governments who want to circumvent their tight budgets and improve project outcomes are increasingly turning to more cost-efficient private sector solutions (OECD 2015). As such, achieving the 2030 Agenda maintains that infrastructure financing will need to come increasingly from the private sector.

Sharma (2018) explains that private investors can lead to more extensive economic and social benefits to developing regions. Their impact can increase project optimization, market

depth, efficient resource allocation, and provided expertise to vital economic projects. For example, private sector organizations, such as the Private Infrastructure Development Group (PIDG), has had tremendous success in working with governments to bring well-structured and bankable infrastructure projects to the market. Since 2002, the organization has mobilized over $33.7 billion from private sector investors to fund infrastructure projects in the least–developed economies (UNEP 2017). Furthermore, the expanding role of the private sector has prompted development organizations and governments to engage more with private financing actors in a variety of agreements and partnerships (Kharas and McArthur 2014). For example, the significant rise of public-private partnerships in the last twenty years has created new opportunities in all industries and been a major contributor to alleviating capital constraints in developing economies (Tyson 2018).

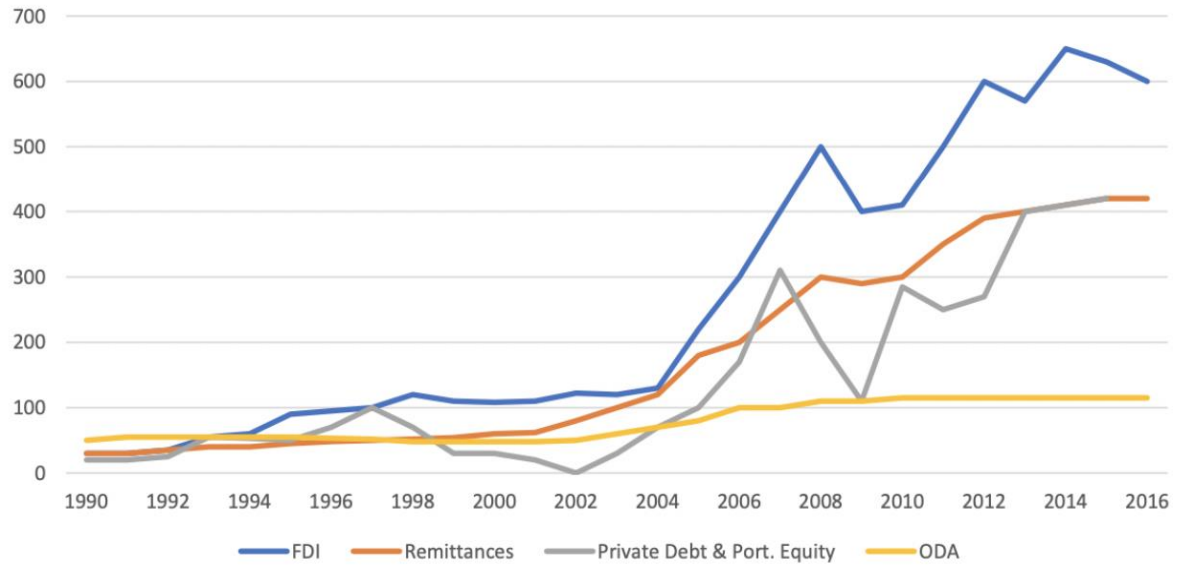
Other opportunities that governments can pursue with the private sector, include contractual agreements that offer partial government funding to private long-term infrastructure projects or offering tax breaks to attract private investors to sustainable projects (Weotzel et al. 2016). UNCTAD (2018) provides an excellent example of the Swiss Agency for Development and Cooperation, who since 2016 has been coordinating with the private sector to initiate two simultaneous SDGs initiatives. The first initiative was that the Swiss government proactively work with the private sector to optimize innovative strategies to improve the alignment of infrastructure development with set of environmental standards. Second, the Swiss government has been active at utilizing private capital to increase the efficiency of its long-term infrastructure projects and increasingly improving ways to integrate the SDGs into these projects. Though it is vital for developing economies to learn from other countries, ultimately, they should decide the best strategy that works for them. Whatever strategy a government chooses to implement, optimizing private sector partners and capital will be increasingly important to achieve the 2030 Agenda.

Therefore, with the weakening ability for public-entities to finance infrastructure and the lack of sustainable infrastructure projects in developing economies, has motivated development professionals to put more pressure on private sector leadership. Since 2018, The Argentinian leadership of the G20 has continued to prioritize the mobilization of private sector capital to regions in most need, stating that “developing infrastructure as an asset class holds great

promise to channel the savings of today into public infrastructure, efficient transportation services, basic sanitation, energy flows, and digital connectivity that will make each person of today a global citizen and worker of tomorrow" (Tyson 2018). This follows article 2.1 of the Paris Climate Agreement: "aims to strengthen the global response to climate change in the context of sustainable development and efforts to eradicate poverty by… (c) Making financing flows consistent with a pathway towards low greenhouse gas emissions and climate resilient development" (Paris Agreement 2015).

While strategies to fund infrastructure have changed over the years, engaging with private finance is nothing new, since the 1990s private financial actors have been key in funding long-term public constraints, especially in developing economies. The impact of private finance can be seen in figure 3, which shows the types of financial flows that have been directed to the developing world from 1990—2016. While private finance to developing economies has significantly declined in 2002 and then again in 2008, it resurged significantly in late 2008. The chart highlights how the taxonomy of development finance gradually made a shift from traditional sources of financing—public sector and multilateral loans—to one where private investment and foreign direct investment (FDI) now dominate financial flows to developing economies. In fact, in the years 2008—2016, private investing from both corporations and institutional investors represented over 80 percent of international financial flows in long-term investment projects within developing countries (Runde, Savoy, and Miller 2018). This correlates with a growing trend among investors who—provided with a low-interest rate environment and improved long-term returns—are increasingly seeking to reorient their investment horizons and commitments to alternative assets, such as in real estate and infrastructure (Bielenberg et al. 2016).

Figure 3. Financial Flows to the Developing World 1990—2016



Source: Ratha et al. (2016)

A recent UN report argues that financing a sustainable development agenda will significantly require leadership and financial support from private sector sources, mainly from institutional investors (UNEP 2017). There are usually six types of institutional investors: sovereign wealth funds (SWFs), investment companies, insurance companies, pension funds, mutual funds, and endowment funds. As of 2017, these investors carried 31 percent of the global assets under management (AUM), a value of nearly $100 trillion and accounted for around 70 percent trade volume in the public markets on any given day (Tyson 2018). These firms are often less regulated because it is assumed that they are more knowledgeable and able to protect themselves better than traditional banks.

Gnomes (2008) explains that these investors have less regulatory constraints and tend to have long-term investment horizons. Essentially, just redirecting even just a small percentage of their portfolios toward sustainable infrastructure will make a massive impact. Therefore, institutional investment in developing economies makes economic sense for numerous reasons. Mainly, with their large pools of managed capital, highly trained financial experts, and relatively longer-term investment horizons are the characteristics that make institutional investors critical to financing low-carbon infrastructure and filling sustainable funding gaps. A recent McKinsey (2016) study estimated that institutional investors currently finance $300

billion to $400 billion of infrastructure a year, but with right incentives, it is plausible private institutional investment in infrastructure could increase by $1 trillion to $1.5 trillion per year over the next 15 years. The study concluded that institutional investors can close over a third of the $3.3 trillion infrastructure financing gap (Bielenberg et al. 2016). Capape (2018) explains that a proper sustainable financing framework should focus on strategically mobilizing the over $100 trillion in assets that are in the hands of institutional investors toward more sustainable and productive investments.

For many investors applying sustainable infrastructure assets as part of their long-term portfolio strategy is growing in popularity and suggests that these investors will play a more proactive role in sustainable finance in the future. First, many investors are moving into direct infrastructure projects rather than in public markets. This gives investors more of a say in the early stages of these infrastructure projects rather than as limited stakeholders, and it also allows them to receive higher returns. Second, moving into unlisted private markets allows investors to diversify their assets and optimize their portfolio strategies. Third, the growing interest in responsible and impact investing that incorporates sustainable factors into investments has shown investors that sustainable assets are a better way to reduce risks and identify opportunities for future growth. Finally, due to these previous three factors, funds are setting more aggressive portfolio target both for infrastructure and for sustainability. Since the establishment of the 2030 Agenda, investors have been more eager to match their long-term debt with relatively low-volatile and long-term sustainable liabilities while optimizing proactive investment strategies. In fact, in a survey of 115 private investors, 67 percent said they are planning to increase infrastructure investment in the next few years (Bielenberg et al. 2016). There is otherwise a definite disconnect between the investors with substantially capital and sustainable projects in developing economies that need financing. The problem is that the existing financial framework has been inefficient at matching private sector capital to illiquid long-term assets related to sustainable infrastructure. Therefore, the major impediment to filling the infrastructure financing gap is aligning the large pool of private sector capital from institutional investors with investable projects. Increasingly governments will have to design policies that attract more private capital, whereas private investors should be seeking projects where they can have the most impact.

Investors should consider that developing economies offer many strategic advantages. First, infrastructure demands are increasing, and it is estimated that by 2030, developing regions will account for 97 percent of the world's population growth of 1.2 billion people (UNCTAD 2018). This massive surge in population and resource demands creates a sense of urgency to improve the quality and quantity of infrastructure in these economies. Meanwhile, the establishment of the 2030 Agenda creates even further opportunities for investors who are seeking sustainable investments. For example, Tyson (2018) predicts that achieving the SDGs could open as much as $12 trillion of market investment opportunities. Second, the scale and scope of forecasted economic demands apply further challenges to the world economy, particularly in developing economies (Kharas and MacArthur 2014). Given the existing constraints that governments face, private sector solutions are being increasingly utilized. For example, investors could use, social impact investments, which are a combination of both public, philanthropic, and private capital to help direct new capital flows into developing economies (Ehlers 2014).

Third, the enormous expected economic growth rates needed to reach the SDGs in developing countries presents major opportunities for institutional investors as these markets mature. Since infrastructure is so important to economic development, investing in infrastructure will allow private financers to associate themselves with the forecasted economic and social growth rates in these countries, this is known as capital scalability. In turn, the proper coordination of financing will have a positive impact on the long-term growth rates of developing countries and have a greater impact on the least-developed countries, who are often capital starved. Private investors could not only help provide demanded financing but also could help ensure that projects run efficiently and smoothly (Ehlers 2014). For example, according to the Istanbul Program of Action for the Least Developed Countries (IPALDC) (2015), the construction of proper sustainable infrastructure can help emerging and developing nations reach the 7 percent annual economic growth rate needed to achieve the SDGs by 2030. Helping nations reach their sustainable development goals will allow investors to benefit from the enormous growth rates in these economies and enhance their prospects of obtaining higher rates of returns over the long-term lifecycle of the project than in developed nations.

Additionally, as the capital markets in developing countries mature, they will become more attractive for two reasons: existing projects will expand opportunities for new collaborative investment and business partnerships; the deepening of capital in these economies creates more liquid assets, investment scalability, and improves productivity (Bouri 2018). For one, the infusion of private capital enables governments to free up additional resources and focus on other development initiatives (Woetzel et al. 2017). These features all correspond with positive economic growth and greater societal improvement.

What is Limiting Private Sector Engagement in Developing Economies?

While there have been some improvements made, most institutional investors allocate very few resources and capital towards sustainable investments, especially in developing economies. In 2017, the portfolio allocation of institutional capital to sustainable infrastructure remained low, at around 1 percent by institutional investors globally (Belienberg et al. 2018).

Carter (2015) highlights the three main constraints that institutional investors face when seeking to allocate resources into developing economies: technical constraints, investment barriers, and legal requirements. First, developing economies which suffer from weak governance and inadequate financial resources, often have difficult times in creating long-term strategic plans for infrastructure investment. These technical constraints create additional worries for investors seeking to allocate funds in these economies, as they can run into logistical, technological, or project assurance issues. Moreover, the lack of transparency be the project, and the private capital can threaten the overall success of the infrastructure projects (Egler and Frazao 2016).

Second, even if some governments manage to develop strategic infrastructure plans, the implementation of these strategies may not be adequately coordinated with investors or with other actors involved. Specifically, developing economies face restrictions and lack administrative resources. The insufficient amount of administrative resources limits their government's ability to offer enough incentives to help mitigate the risks of infrastructure projects for foreign investors and limits investor capacity to devote capital towards these economies. Investors seeking to invest in these economies, often face issues with lack of bankable projects, transparency issues, and unfavorable regulations coupled with poor business

policy. As such, within many developing economies, there are still multiple barriers that exist in mobilizing transformative levels of financing.

Finally, based on the lack of knowledge and uncertainty in these markets, it is hard for investors to analyze the long-term risk-adjusted returns for uncertain investments. Without the proper tools for investment dissemination, it makes it difficult for investors to justify investing in infrastructure projects and is even more challenging to analyze sustainable infrastructure projects. Given that the enormous initial costs and the uncertainty of these illiquid long-term assets, at times, investors seeking the optimal value of their initial expenditure, find it hard to predict the projects outcome and long-term returns. On the other hand, governments may impose legal constraints on investors who are suspected of planning perverse investments or trying to obtain strategic domestic resources from host nations. Thus, without long-term strategic plans to guide investors through the tedious planning processes associated with infrastructure projects, then achieving financing in these assets will be limited.

Institutional Investors and Investing in Sustainable Economy

Anderson and Chonghaile (2015) note that in the coming decades, private finance and institutional investors must be adaptable and collaborate with governments, international financial organizations, and conventional financers to expand opportunities in low-carbon investments in developing economies. While there are inherent risks associated with these strategies, in the next decade and after that, there will be numerous opportunities for investors, fund stakeholders, and for corporations who are willing to commit long-term capital to these regions. These new opportunities can provide investors incredible advantages, ranging from obtaining access to high growth markets, portfolio optimization/diversification, and obtaining valuable capital assets unrelated to their public market assets.

Considering this, institutional investors also have a higher capacity to influence sustainable development in these economies, as they can leapfrog traditional energy and pollution-heavy stages in development and invest directly into green infrastructure technology (Tyson 2018). Not only will annual investment in infrastructure have to increase, but institutional investors should realign their portfolio allocation choices and support sustainable infrastructure in developing economies. This supports Runde, Savoy, and Milner (2018) that

'green' growth in the economy cannot be maintained without the expansion of infrastructure financing and the reallocation of investments to long-term low-carbon assets. At present, much of the current private sector flows to infrastructure are into the traditional brownfield, nonrenewable, and fossil fuel-based projects, and as noted, most of these projects are focused in advanced economies. Whereas, only a small fraction of total private debt and equity financing is directed toward green investments, such as low-carbon infrastructure or in clean energy resources.

To meet the demands of a changing economy, investment managers should consider the scalability of sustainable infrastructure and be proactive about implementing SDG-related assets into their portfolios. As noted by Amin and Lockridge (2017), institutional investors can make a significant impact on the SDGs, just by focusing their mandates towards sustainable assets and their mandates to more long-term horizons. They recommend that private investors, including banks and institutional investors, shift the composition of their portfolios by 30 percent away traditional brown-field projects into more low-carbon infrastructure. For example, if current investors increased their annual portfolio allocations to 6 percent, it would add over $150 billion into sustainable assets annually. Investors seeking to optimize low-carbon investment strategies should consider the long-term gains in sustainable assets, especially since countries are aiming to decrease carbon-emissions in accordance with the Paris Agreement. They might recognize that current high-carbon investments may get stranded as climate policy is strengthened and traditional brown-field projects become obsolete. They should consider climate-risk concerns and costs associated with climate change in their portfolios and apply that analysis to potential investment projects.

The longer investors wait, the higher the chances are that transitioning into a green economy will be rendered as costs surmount and become unfeasible to achieve. Altogether, the additional costs to ensure that infrastructure meets sustainability standards and the initial upfront burden of sustainable assets could add $14 trillion to overall infrastructure costs and value between 2015 to 2030. However, according to Bielenberg et al. (2016), much of the cost will be offset by a $9.4 trillion financing reduction in fossil fuels exploration, energy transmission development, and the distribution of the nonrenewable supply chain. Furthermore, if the operational savings of the sustainable infrastructure is accounted for, then a low-carbon scenario

of infrastructure development over the next decade will be around $1 trillion cheaper than in traditional fossil-fuel reliant infrastructure. Some estimates predict that out of every additional dollar invested today in clean energy, will save three dollars in future fuel costs by 2050 (Kaminker et al. 2013).

Shifting Investor Behavior

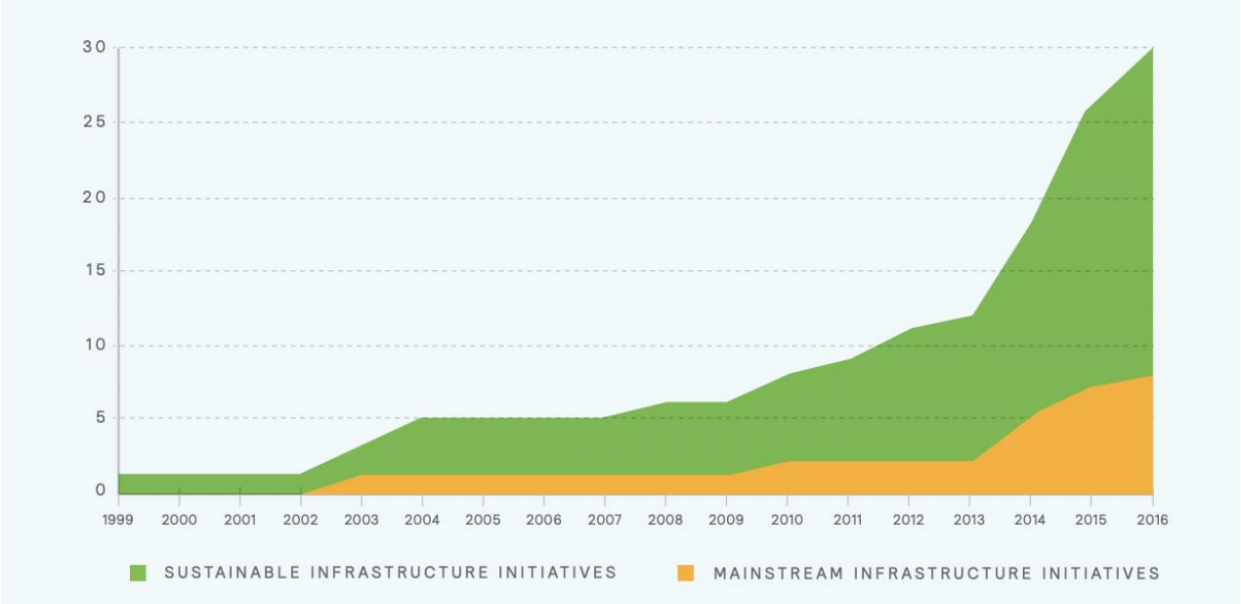
In the coming decades, it is imperative that private financial entities realize the potential that these SDGs present, and it is equally important that investors shift resources to developing economies where capital could be more productive (Curto 2010). The adaptability of these investors could help make up for the deficiencies within the existing capital architecture and help catalyze new development efforts in emerging economies. It has also been shown that efforts to incorporate smaller economies, such as the least developed economies, in portfolio decisions improves the outcome of many social and economic targets globally while at the same time enhance portfolio efficiency (UNCTAD 2018).

For investors allocating more capital to long-term infrastructure in developing countries is a strategic way to diversify assets away from equities and bonds in advanced economies, while gaining valuable access to new markets. By that same measure, in recent years, private financial flows have shown improvements in long-term sustainable initiatives. Since 2010 investments in renewable energy have increased from $45 billion to $270 billion (Voysey, Stacey, and Allison 2016). Examples include wind and solar power plants, hydroelectric dams, and the expanding electric car charging infrastructure. Just in 2015, more than 400 private sector investors with $25 trillion in assets have committed to increasing low-carbon and climate resilient investments as part of the "Transition Pathway Initiative" established after the Paris Agreement (Egler and Frazao 2015). Many of these same institutional investors committed to clean energy and decarbonized portfolios. In fact, a recent PWC survey (2017) showed that 71 percent of private investors say they are already planning how they will engage with the SDGs in economies that need it the most (Baker 2018). Another report published by Bouri et al. (2018) found that 73 percent of investment leaders have stated their intent to integrate more sustainable guidelines into their investment portfolios. In October 2016, nearly 1,500 private financial institutions adopted the Principles for Responsible Investment (PRI), that outlined a common

framework for investing in sustainable assets and help align investor strategies with the SDGs (Amin and Lockridge 2017). That same year, the United Nations Environment Program (UNEP) Portfolio Decarbonization Coalition — a multi-stakeholder initiative that represents over 27 institutional investors with accumulative $3 trillion in assets under management—reported that seventeen of the investors have now formally established decarbonization portfolio objectives and had launched individual firm initiatives to tackle global warming (UNEP 2017).

This can be seen in figure 4 that since 2013, there has been a spike in sustainable development initiatives from— traditional commercial banks and institutional— private investors (Amin and Lockridge 2017). As compared to traditional infrastructure initiatives, such as nonrenewable energy projects, sustainable infrastructure initiatives nearly tripled them in 2016. In fact, Tyson (2018) notes that 40 percent of new private infrastructure investment went into renewables in 2016. This spike correlates with the renewed interest in green financing since the establishment of the 2030 Agenda, along with the significant increases in governments' and investors' ability to build more "bankable projects" and create more sustainable communities (Amin and Lockridge 2017). Furthermore, the renewed interest in sustainable infrastructure correlates with the assumption by many investors that renewable energy assets hold their value and provide long-term cash flow to investors (Amin and Lockridge 2017). In addition, many of these investors are increasingly recognizing that an energy transition is underway and are unwilling to invest in traditional infrastructure assets, due to concerns about "stranded assets," or assets that will not be demanded over the long-term and will significantly lose their value with time (Amin and Lockridge 2017). According to Bielenberg et al. (2016), private investment has been fundamental in helping overcome the financing gap in sustainable infrastructure and will continue to do so in the next century.

Figure 4. Growth in Sustainable Infrastructure Initiatives 1999 – 2016



Source: Amin and Lockridge (2017)

IV. THE ROLE OF INSTITUTIONAL INVESTORS AND THE PUBLIC SECTOR

As is with most investors, institutional investors main priority is to return material value in the form of profits to their shareholders and improve quarterly earnings. As such, they will only shift their fund composition to low-carbon assets when their forecasted returns are competitive against traditional assets (Kaminker et al. 2013). While there have been significant improvements, in many cases, weak green asset returns in developing economies are a consequence of an insufficient public investment in the preparation stages of long-term infrastructure projects that optimize carbon-saving technologies. Considering that sustainable projects often have high initial costs, investors search for projects that offer the right amount of technical assistance, financial incentives, and monetary support from government authorities to ensure their capital is efficiently used. Without the assurance of government cooperation, investors face further difficulties in understanding all the risks associated with these projects. These asymmetries have caused investors to hesitate to reallocate assets to sustainable sectors in developing economies. It is easier for them investors employ financing to stable existing infrastructure in developed economies rather than to new economic projects in developing economies. Bielenberg et al. (2016) maintain that investors may be willing to take on

sustainable infrastructure but want higher returns to compensate them for their perceived risks. This follows the conclusion of the CEO of the New Zealand Superfund Adrian Orr who in a recent interview concluded that sustainable infrastructure opens up other valuable business propositions within the existing infrastructure network, but he recognized that "certain investment activities may be comfortable and quite scalable, with similar resource needs, but others may not" (Beilenberg et al. 2016).

Hans Peter Egler and Raul Frazao (2016) recognize that these problems stem from the existing policy landscape within the current financial structure and macroeconomic objectives operate. To address these issues requires reinvigorating the risk and accountability aspects of these investor mandates to include SDG-related assets. While at the same time, governments and legislative authorities should aim to resolve some of the structural and policy issues, which are limiting investors from allocating resources in their economies. Therefore, in order to transition into a low-carbon society and increase sustainable infrastructure investment, it must be an initiative of all stakeholders, including both public and private actors, within both developing and developed nations (Egler and Frazao 2016).

Investment Strategy and Integrating ESG Assets

Given the unprecedented ambitions and opportunities presented to investors and developing economies, it is essential that each explore new investment partnerships and reiterate strategies that will lead to a more dynamic and sustainable economy. However, there is still is a genuine policy shift that will need to take place from both the external political framework and the internal management of investment institutions, as well as government bureaucracies and community organizations. Such initiatives should promote enhanced asset transparency, ethical management practices, and allow stakeholders to apply pressure on the fund managers to build stronger internal sustainable investment capacities (Capape 2018). Therefore, a balance must be struck between policymakers and influential private investors as well as the communities that they impact.

On the private sector side, the climate-related risks that impact our world today and in the coming decades are too far-reaching for financial institutions to avoid entirely. If progress is to be made on sustainable development, firms will have to reallocate new capital flows and re-

route existing portfolio capital into sustainable assets. These challenges present material benefits for benevolent firms who invest in infrastructure, housing, energy, private equity, and innovation sectors and other long-term financing strategies (Sharma 2018). By forging relationships with governments and international policymakers, investors can manage their financial agenda goals and align their strategies with the SDGs. Klemper and Tarnoswki (2017) explain that this new style of managing relationships is what authors have called hybrid organizing, a management approach that involves building and maintaining social and financial goals, structuring the organization around those goals, and training managers to support community relationships and foster business partnership around those goals. When the social and financial goals come into conflict, it is the financial manager's job to make the difficult trade-offs to keep the goals in equilibrium. Hybrid investing is just one strategy that investors can use to ensure they are making impactful investments and allocating adequate resources to society.

In other words, the 2030 SDGs signifies that responsible investment stewardship must guide development strategies and capital flows. This is important when transitioning to a sustainable economy because there does not have to be a trade-off between economic prosperity and environmental preservation (Baker 2018). As such, investors need to go beyond 'cherry-picking' the sustainable goals which are the easiest to achieve and instead take more of a holistic approach to investing, by integrating the ESG (Environmental, Social, and Governance) criteria into their core management operations (Sharma 2018). The ESG criteria, Capape (2018) explains is fundamental to progress because it outlines a set of investment standards which are subjected to the principles that adhere to strict ethical and transparent investing practices. Pandit and Tamhane (2018) highlight that the environmental principle stands for proper stewardship of the economy. The social criteria examine how companies manage the relationships with their workforce, customers, and the communities it operates. Whereas, the governance part deals with the leadership and management of the company and its investments.

In an increasingly financial and socially interconnected world, the importance of actively managing risks and opportunities related to emerging environmental and economic trends is becoming increasingly complex. Since institutional managers are self-interested, they are motivated to improve their portfolio performance and increases capital gains to their

shareholders. As such, corresponding to the rise in institutional ownership in large companies in the 1970s, many investors had developed innovative methods to embrace the demand of their stakeholders, optimize investment strategies, and improve their portfolio performance.

One method investors use is stakeholder engagement. In context, stakeholder engagement explains the relationship between the principles and values of a firm and the decisions of the executives who manage the firm (Jung and Dobbin 2012). Adolf Augustus Berle and Gardiner Coit Means (1932) discussed corporate governance in terms of an "agent" and a "principle." The shareholders are the principles who own the corporation, whereas the managers of the corporation act as the agent. The relationships which coordinate corporate governance according to Berle and Means (1932) is known as the principle-agent relationship. As such, the principle-agent relationships refers to the relationships between the shareholders—I refer to the stakeholders—and the management personnel. At times, the principle demands may conflict with the agent's corporate practices, and it is hard to distinguish whether these managers (agents) are performing for themselves or the owners (principles) of the company (Mizurchi 2004). Under stakeholder engagement investors, "the principles" can promote more efficient corporative governance using institutional financing and investor influence. In theory, the firms must not only serve their shareholder interests but now have a responsibility to serve their stakeholder's conditions, this being private and institutional investors. These institutional investors, for example, can use stakeholder power to enhance pressure on the decision-making processes of the firms or projects they invest in (Mather 2017).

The consequence of investor pressure is that the profit-seeking motivates of investors can lead to conflicts between a company's corporate mission and ethical management practices while also having to meet the demands of their stakeholders (Mizurchi 2004). Consequently, irresponsible stewardship among investors can create issues in managing investments, coordinating strategies, and incoherence in the corporate power structure. Failure to align the two opposing forces of the 'principle' and the 'agent' can result in principle-agent problems and can create discord within companies and divestiture among shareholders. Principle–agents' problems can result in several issues that can increase agency costs, which arise in the wake of core management inefficiencies, relationship dissatisfactions, and disruption between agents and the principles (Mizurchi 2004). Stakeholder power can aid in resolving the problems that can

exist when company values do not align with investor demands or their appetite for risks. Such practices like stakeholder power provide institutional investment managers with higher returns and enhanced ability to influence business and investment outcomes.

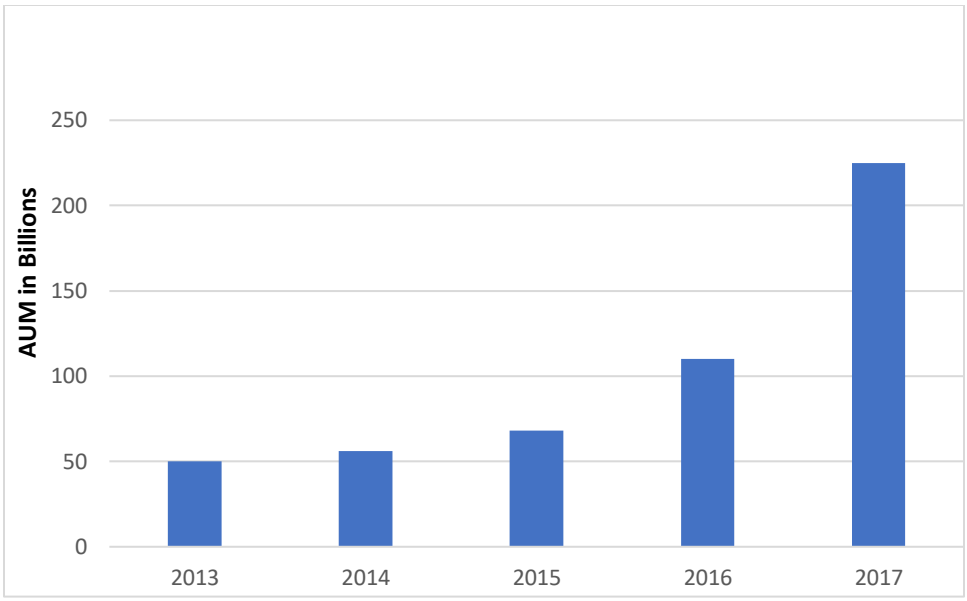
Indeed, the rise in institutional investing allows investors to have greater capacity to influence corporate investment decisions and promote a more sustainable economy, through stakeholder power (Jung and Dobbin 2012). Many private businesses and institutional investors are already contributing to the SDGs through a variety of factors (Mather 2017). One-way investment actors are contributing to the SDG agenda is by applying an ESG criteria to companies and organizations they seek to invest in. Applying an ESG criteria allows socially conscious investors to form investment decisions around a value or principle related framework, and to screen the mitigation, and implementation processes (Pandit and Tamhane 2018). The SDG agenda includes the promotion of investment in sustainable infrastructure, agriculture, industrialization, science, technology, and innovation (Guerin 2013). Luckily, these positive sustainable themes resonate well with the investment mandates of many institutional investors. As such, investors who want to support sustainable development, can use an ESG criteria to identify sustainable and impact products. Many institutional investors have been aggressively applying an ESG criteria to their investment decisions and management practices, since the establishment of the SDGs. Pal (2018) explains this growing interest in using an ESG criteria "in a sense the SDGs are a rallying theme for asset managers, corporations, and other institutions to align their business values to, so that capital is allocated towards positive impact investments." Based on this premise, more and more investors have expressed to their shareholders their commitment to be responsible fiduciaries by employing sustainable standards and to be more active in promoting investments that aim to preserve our planet (PRI 2018).

In the twenty-first century, enabling the use of stakeholder power could help investors and corporations reach their SDGs objectives. Additionally, by using stakeholder power, corporations and shareholders can adjust company objects to meet the public demands for improved accountability and corporate governance. Otherwise, through stakeholder pressure, investors can also use the ESG criteria to help identify investments and corporations which are in the best position to deliver substantial long-term financial value while also addressing the most societal goals (Mather 2017). Thus, with the application of ESG investments, a new stage

has been set in investment portfolio allocation and asset management practices. At present, according to Pandit and Tamhane (2018), most institutional investors integrate ESG criteria to investments, have active ESG managers, and initiate climate risks into their portfolio concerns. On a global basis, a recent study by Royal Bank of Canada (2017) showed that 72 percent of institutional investors are using ESG principles as part of their investment approach (Pandit and Tamhane 2018). Due to the interest in the SDGs from the investment community, vital sustainable products and assets increasingly receive financing. In fact, the Business and Sustainable Development (BSD) report (2017) estimated that by 2030, there could be 380 million new jobs established which focus on maintaining the SDG agenda. The report also concluded that for many investors, their ESG assets would outperform their non-ESG assets in the next year, and for the years to come.

As such, the financial industry has been very successful at integrating sustainable ESG products into their portfolios, and their attitude to responsible investing has been positive for SDG-related assets. In a recent survey, Bouri et al. (2018) found that 42 percent of institutional investors reported that they are aggressively applying socially responsible criteria to their impact investment measurements. According to Pandit and Tamhane (2018), the activity of screening investments under a socially conscious framework is a growing field, known as impact investing, sometimes called socially responsible investing. In particular, impact investing is the ability for investors to apply a socially responsible framework to capital investment projects, which have social or environmental benefits. Throughout the world, asset managers and institutional investors are increasingly adopting the SDG agenda and ESG criteria as a framework to measure the positive impacts in their portfolios (Pal 2018). Figure 5 provides an overview of the progression of impact investing in the last few years. As shown, in just in 2013 impact investing only accounted for around $50 billion of assets under management, in just four years, that sum increased to $225 Billion of assets under management.

Figure 5. Impact Investing Assets Under Management 2013 – 2017



Source: Bouri et al. (2018)

Although the field of impact investing is still evolving, using ESG principles represents a significant shift in investment choice and asset allocation in financial markets. Indeed, impact investing has driven more capital flows towards investments which provide critical solutions to the environmental and social challenges facing the world today (Bielenberg et al. 2016). Now many assets managers and investors cite that there are zero barriers in enhancing or improving their ESG financing commitments (Capape 2018). As noted by a 2017 McKinsey Report, "impact investing has already made accelerating improvements on the sustainable goals" (Bielenberg et al. 2016). The report mentions that the "sustainable assets that meet the ESG criteria have increased to 26 percent of the entire managed asset classes in the last few years." In 2016, a survey conducted by State Street found that ESG investing encompassed $22.9 trillion in total asset under management, which is just over a quarter of the worlds professionally managed assets (Capape 2018). More importantly, over 45 percent of those impact investments happen in emerging markets and the least-developed economies.

The growing trend of impact investing is becoming a standard in investment and financial management practices. These trends have spawned industrial initiatives, such as the European Association of Long-Term Investors who in 2016, recognized the importance of the physical, economic, and financial risks associated with climate change as well as the growing opportunities that low-carbon economic transition presents for new investments and jobs (Pandit

and Tamhane 2018). Even more surprising is that the Global Impact Investing Network (Bouri et al. 2018) reported in 2016, that over $77.4 billion is currently being invested in impact investments in about 403 funds and financial products around in the world. According to a 2017 report conducted by East & Partners, “Sustainable Financing and ESG Investing,” found that 84 percent of European Investors, 58.1 percent of American Investors, and 40 percent of Asian Investors had an ESG strategy in place (Pielichata 2018). Almost 75 percent of these asset managers in 2017, agreed that low-carbon investments are among the most important long-term financing trends in their portfolios The Principles for Responsible Investment, states “that 99 percent of French asset owners are addressing climate change issues in their portfolios” (PRI 2018). Furthermore, over 60 percent of managers are directly engaging with companies to act on climate change (PRI 2018). Also, 20 percent of institutional investors globally have private fund managers that solely focus on sustainable investing. The point is, impact investing has drastically changed investor attitudes about ESG assets and revitalized sustainable financing.

Since individual institutions bear ultimate responsibility for managing climate-related risks on behalf of their clients and their shareholders, the application of impact investing has created both industrial and social movements. The industry movement has developed because institutional investors have increasingly pledged to decarbonize their investment portfolios, align strategically with SDG assets, and continued to develop analyzation methods to assess their carbon footprint (Bouri et al. 2018). The social movement was due to the prorogated access to climate-risk information, the new holistic approaches to business and government practices, and a fundamental behavioral change that has shifted how societies and individuals make economic choices. These movements have been able to motivate companies and investors to realize that impact investments are good for business and very profitable. The success of impact investments in the past shows that such investment practices will become the norm in investment management and portfolio strategies as the market begins its long transition process to a more sustainable and inclusive economy (Pielichata 2018). In the long-run, investors who anticipate and invest in market responses to climate change now will benefit the most, as the saying goes, "the earlier bird gets the worm." As the CEO of Blackrock, Larry Flink, once said, "that society is demanding that companies, both public and private, serve a social purpose. Companies must

not only deliver financial performance but also show how they make a positive contribution to society" (Pal 2018).

Building an Attractive Regulatory Framework

On the other hand, given the amount of infrastructure required, it falls on the responsibility of the government and administrators to provide a proper framework for adaptation planning, project guidance, and incentives to attract investment into sustainable assets from traditional as well as alternative financing entities (Baker 2018). Indeed, there are many ways in which host countries might go about obtaining private sector finance, either in isolation, working directly with the investor, or working with other governments and international organizations. Either way, governments, and their international development colleagues must create the right conditions for private–sector infrastructure development and green investment. They need to ensure a policy environment which improves accessibility and transparency to green assets while conditionally lowering the long-term uncertainty faced by many investors. In line with this view, “The 2017 SDG Investment Guide” stated that failure to provide efficient and effective sustainable guidelines for investments and investors would weaken our capacity to achieve greater prosperity in the future for all (PRI 2017).

Essentially, governments and policymakers can further facilitate private sector infrastructure financing in three ways. First, governments should focus on investing in the preparational stages of projects, facilities, and with the labor force which will inherently improve the bankability of the sustainable project pipeline (Bielenberg et al. 2016). The improvements in low-carbon bankable infrastructure assets present tremendous opportunities for the community of long-term private investors because such assets offer high economies of scale, inelastic demand, and stable cash flows (Clark et al. 2011). The number of bankable projects is significant because investors are actively searching for private and public partners to help mobilize capital into new uncertain economies. Therefore, the more bankable projects that a country establishes will help improved all social indicators and their overall economic profile. The problem is that, according to Bielenberg et al. (2016) that bankable sustainable projects in developing economies are basically nonexistent. This follows Havard Halland (2017) of the World Bank, who said, "there is simply not enough viable projects out there." Additionally,

many infrastructure projects in developing economies, especially sustainable infrastructure projects, are not profitable enough to attract private capital (Bielenberg et al. 2016).

According to Runde, Savoy, and Miller (2018) in order to improve the bankable pipeline and capital guidance, governments can facilitate external and internal capital flows with private and institutional investors to take advantage of growth-enhancing investments.

This can be achieved when governments in developing economies improve domestic resource mobilization, mainly by increasing tax collection, anti-corruption campaigns, and in obtaining international public finance. Additional by working with intergovernmental financing organizations and multilateral development banks, governments can utilize external capital to invest in the preparation and the long-term stages of infrastructure projects to reduce the projects costs and implementation period. Likewise, in an era defined by low-interest rates, strong macroeconomic growth, and innovative methods of financing, developing economies have the perfect opportunity to build efficient and effective sustainable frameworks. Also, as SDG assets become more profitable and align with institutional mandates, investors will begin to shift their strategies and to be more suitable in financing activities related to SDGs (Sharma 2018).

Second, economic and climate policy action must continue to adapt and address the misalignments between investors and sustainability initiatives. The lessons of history continue to prove that it is the responsibility of the policymakers and intermediaries in creating rules that facilitate financing for development. A stable and predictable regulatory policy environment and governance framework can attract investors and enhance capital expenditure (Schmidt -Traub, 2015). Building practical and transparent standards that enable governments to mitigate and reduce the risk of investments is increasingly important, and without such policies, investors and governments will remain hesitant about private capital expansion. This is primarily a concern for developing economies since they face additional financial challenges, such as corruption, a fragile policy framework, and the lack of capital development (Lipton 2015). Governments should establish a common language through policy concerning the SDGs and more broadly, the ESG initiatives that intend to accelerate further private capital in sustainable sectors. Getting this right could unleash tremendous amounts of liquid capital support to the developing economies (Mather 2017).

Third, the international community must play a more significant role, whether through developing new initiatives that complement the measuring and the efficiency of sustainable infrastructure projects or by offering guidance to governments in energy policy. For example, the establishment of many green collaborative initiatives, such as the development of specific task forces for institutional investors, like the Global Impact Investing Network (GIIN), the International Institute for Sustainability Development, and the establishment of the One Planet Summit, has already enhanced pressure on investors to reiterate common investment priorities relating to the SDGs (Guerin 2013). Other projects include the annually "SDG Index and Dashboard" report which shows specific quantitative variables that express the progress being made by countries who are adopting SDG indicators and who are promoting sustainable infrastructure projects (Mather 2017). The OECD (2014) also offers solutions through monitoring procedures to help tackle the new and diverse infrastructure challenges arising within ESG principled assets and sustainable strategies. While all these efforts are ways to improve transparency standards at the international level and make green investments opportunities more accessible to investors, much more work is needed to build a practical and comprehensive sustainable framework.

Finally, initiating more sustainable regulations would reduce systemic risks in assets and within the investments that correlate with the SDGs (Sharma 2018). Conversely, regulation and policy implementation must be clear, concise, and quick or as a global community, we risk dismal failure at designing climate framework the is efficient. As of 2017, there were nearly 300 new ESG related regulations aimed at the investment industry worldwide. Just in the EU alone, the IORP II Directive was established in 2015 by the EU commission designed to enforce new legal requirements of institutional investors who are considering ESGs in their portfolios (Woetzel et al. 2017). Other global regulators are putting much focus on sustainable regulations and implementing ESG criteria into a new law. As Graeme Griffiths (PRI 2017) said, "many institutions find regulations to be ineffective, owing to different interpretations in different markets. However, research we have done suggests that regulation does have a positive effect on levels of disclosure and increase awareness." Thus, financing sustainable development and meeting the post-2015 agenda will require policy flexibility and enhanced regulatory financial strategy, especially within developing economies.

On the other hand, regulators will have an uphill battle to climb, as they will have a diminished capacity to identify, understand, and address the rise of enormous complexities of economic shareholders. Many of these regulators who are dedicated to financing a decarbonized economy are consistently strained and weakened by individual and national interests. In fact, in many developing countries progress on the SDGs has been consistently slow and even regressed in some fragile economies (OECD 2014).

To summarize a major source in achieving financing in developing countries will be from private market financial sources, but only if government policy aligns with an attractive financing framework. While these SDGs are global economic and social goals, their implementation will most effectively be driven at the regional, national, and local levels (UNCTAD 2018). Indeed, governments have a significant role to play in matching institutional capital to domestic SDG assets and in designing public investments to attract private funding. Hence, political and financial structural reforms are needed to ensure that investment is being facilitated to essential services in society (Sharma 2018). Furthermore, Kharas and McArthur (2014), mention that governments will need to promote incentives for innovation and provide a stable regulatory environment that allows investors to mitigate risks over the long-term, thus enabling them to take positions on assets which are in line with the SDGs. According to Lagarde (2016), to attract external investment, emerging and developing countries can strengthen their institutional frameworks, protect trade integration, and permit exchange rate flexibility. For the least–developed economies, it is essential to push for more progressive development of their capital markets and design policies that aim at increasing their long-term growth (Woetzel et al. 2017). In that same matter, these should use macroprudential tools to limit financial sector risks; these include monitoring foreign currency debt and limiting large credit and debt expansions to protect against capital flight.

Additionally, developing and emerging economies can learn from socially conscious developed nations that have designed institutional policies to combat climate change. Movements in countries like Norway, Canada, France, Ireland, the United Kingdom, and in other markets encouraging institutional investors to become leaders and stewards in this new economy and to the shareholders, they represent (Capape and Santivanez 2017). For example, Capape (2018) mentions that the United Kingdom's Climate Change Act of 2008, Sweden's

Sustainable agenda, and Frances Energy Transition for Green Growth Act in 2015 creates investment strategies in sustainability via legislation that should be mirrored by others. In the end, developed and developing countries and institutional investors must continue to work together to boost potential growth and help each other in allocating capital towards more sustainable resources and opportunities. Together multinational firms, investors, and governments must have the courage to strike out in new directions and trailblaze a path for others to follow.

V. THE IMPORTANCE OF SOVEREIGN WEALTH FUNDS AND THEIR ROLE IN TRANSITIONING TO A SUSTAINABLE ECONOMY

As stated, institutional investors have a tremendous capacity to fulfill the funding gap in the SDGs and be impactful participants in a sustainable economy. While most institutional investors have long-term investment outlooks, the characteristics of these each investor are often quite different. For example, hedge funds are more interested, pump and dump, or pyramid schemes and do not mind take on more risks to improve gains (Bienlenberg et al. 2016). Whereas, other investors have conservative asset allocation strategies and stick with bonds and equities. The point here is that certain investors have characteristics which inherently enables them to maintain high risks capacities and optimize long-term investment strategies. Considering that alternative assets, such as sustainable infrastructure, require long-term financing commitments, it is crucial to optimize the most efficient investor for each of long-term infrastructure project. Though many types of investors can play an important role in supporting the SDGs, some investors have general qualities that make them better for the job.

One type of institutional investor who has recently received increasing media, political, and corporate attention is Sovereign Wealth Funds (SWFs). SWFs are known to act as long-term investors and often take positions on more illiquid foreign assets, particularly infrastructure, real estate, etc. (Gnomes 2008). In many cases, the investment mandates and portfolio strategies of SWFs often align well with these assets. Furthermore, SWFs are not burdened by the same cumbersome regulations and financial requirements that traditional commercial banks face. Given the significant financing gaps in sustainable infrastructure and

regulatory constraints in the financial markets means that SWFs will be increasingly important in the coming decades. Therefore, the characteristics of SWFs makes them potentially the most adaptable and stable candidates for funding a sustainable economy.

SWFs are different from other institutional investors (i.e., mutual, pension, and hedge funds) because they are not only large but also politically connected. For this reason, many cite concerns about the purpose of SWFs and their often-vague objectives (Jeyaretnam 2009). SWFs are technically state-owned investment funds and can be termed as financial arrangements composed of financial assets, such as private equity, stocks, bonds, precious metals or other financial instruments and products (Gnomes 2008). Consequently, Gnomes (2008) notes that SWFs are a heterogeneous group, and their role may evolve, as societal and economic variables change overtime. Basically, according to the Jeyaretnam (2009) "SWF are government investment vehicles funded by trade surpluses or foreign exchange assets and managed separately from official reserves."

SWFs are inherently government-backed, have a low risk of insolvency, and usually carry limited liabilities. The International Financial Services London (2009) describes these funds as independent, increasingly active, and as having a higher risk of tolerance and longer investment horizons than other institutional investors (Bienlenberg et al. 2016). Nations often establish SWFs to address a variety of macroeconomic objectives, manage excess revenues more efficiently, and transfer wealth to future generations. The uniqueness of SWFs puts them in a vital position to finance long-term infrastructure development and address the 2030 Agenda.

The International Forum of Sovereign Wealth Funds (IFSWF) (2017) distinguished five different types of SWFs which are characterized by their asset allocation: stabilization funds are designed to manage swings in commodity prices and promote capital stability; savings funds, are designed to transfer wealth in the form of investment savings to future generations; reserve investment corporations, were established to diversify excess reserve holdings to maximize risk-adjusted returns; development funds, finance socio-economic projects and improve a country's potential growth; and pension reserve funds, are financed via pensions contributions and are intended to increase pension holdings (Buteica and Petrescu 2017). To give more of an

explanation, table 1 lists the different types of SWFs, correlated with their purposes and gives examples of the nations who manage these funds.

Table 1. Different Types of SWFs

Objective	Explanation	Examples
Stabilization Fund	Support macroeconomic stability through fiscal impact management driven by commodity resource price volatility	Mexico, Algeria, and Russia's Reserve Funds
Savings Fund	Preserve and grow the wealth for future generations	Alberta Heritage Savings Trust Fund, Abu Dhabi Investment Authority, Oman State General Reserve Fund, and Alaska Permanent Fund
Reserve Investment Fund	Invest excess reserves, including risk management of foreign exchange	Saudi Arabian Monetary Authority, State Administration of Foreign Exchange of China, and Hong Kong Monetary Authority
Development Fund	Promote economic development and diversification, e.g. investment in infrastructure agriculture or private equity	Saudi Arabia Public Investment Fund, Ireland Strategic Fund, and Morocco Ithmar Capital
Pension Reserve Fund	Save and invest surpluses that will be used to finance future retirement liabilities	Australia Future Fund, New Zealand Superannuation Fund, and Norway Government Pensions Fund Global

Source: Curto (2010)

Historical Analysis of Sovereign Wealth Funds

State-controlled investment funds are not a new phenomenon nor a new idea. In fact, investment funds controlled by the state or government apparatuses have been around since the nineteenth century. Nevertheless, most state investment funds never were permanent fixtures of the economy and ended when their objectives were completed. By contrast, contemporary SWFs have vague objectives, strategically managed, and are intended to be permanent. Notably, the first modern SWF, known as the Kuwait Investment Authority (KIA), was established in 1953 by the colonial government of Kuwait. The original, purpose of the KIA was to invest surplus oil revenues and to reduce the country's alliance on a finite resource (Buteica and Petrescu 2017). Through the decades, the government of Kuwait also used the fund to engage in international investing, manage existing assets, and to employ its accumulated foreign reserves

in public and private capital markets. Over time, the KIA and other state-controlled funds have been used to gain access to new markets, valuable material assets, and other financial resources.

Although, the KIA was perhaps the world's SWF, the term Sovereign Wealth Fund did not exist until 2005 in the article, "Who Holds the Wealth of Nations (2005)?" In this article, Andrew Rozanov defines SWFs, "as a by-product of national budget surpluses, accumulated over the years due to favorable macroeconomic, trade and fiscal positions, coupled with long-term budget planning and spending restraints" He explained the governments support their SWFs via revenues surpluses arising from two principal sources: commodity or non-commodity.

The most recognized and popular type of SWF is commodity state funds, which capitalize on the exports from natural commodities, such as revenues from oil or mineral exports (Capape and Santivanez 2017). Nearly 60 percent of all SWFs are financed through energy exports. Otherwise, commodity state funds, use external sources of financing mainly from current account surpluses accumulated from commodity extractions (Jeyaretnam 2009; Curto 2010). Of these commodity-based funds, the most common source of funding is from oil reserves, which corresponds to the fact that the largest SWFs are in oil-exporting nations (Clark et al. 2011). In most cases, the main objective of a commodity SWF is to maximize returns, lower systemic risks, and relieve the nation from sole dependence on one commodity, while at the same time preserving wealth for future generations. Take the Abu Dhabi Investment Authority (AIA) for example the founders of the small Gulf country, Sheikh Zayed and Sultan Al Nahyan, in 1972 dreamed that the utilization of the fund could smooth out the disruptive effects of a volatile oil market and to diversify the nation's trade surplus across a variety of low-risk financial asset classes. The SWF specialists, Javier Capape and Marta Santivanez (2017), the (AIA) was reported to be managing over $800 billion in assets and resources by 2016. Thus, commodity state funds can be very lucrative and proactive long-term investors if countries can manage them properly.

Non-commodity SWFs are mostly sourced from excess foreign currency reserves and current account surpluses. These non-commodity funds were designed by nations—mostly in Southern Asia—to manage foreign reserves and invest excess surpluses into international markets (Al-Hassen et al. 2013). An excellent example of a non-commodity SWF is the

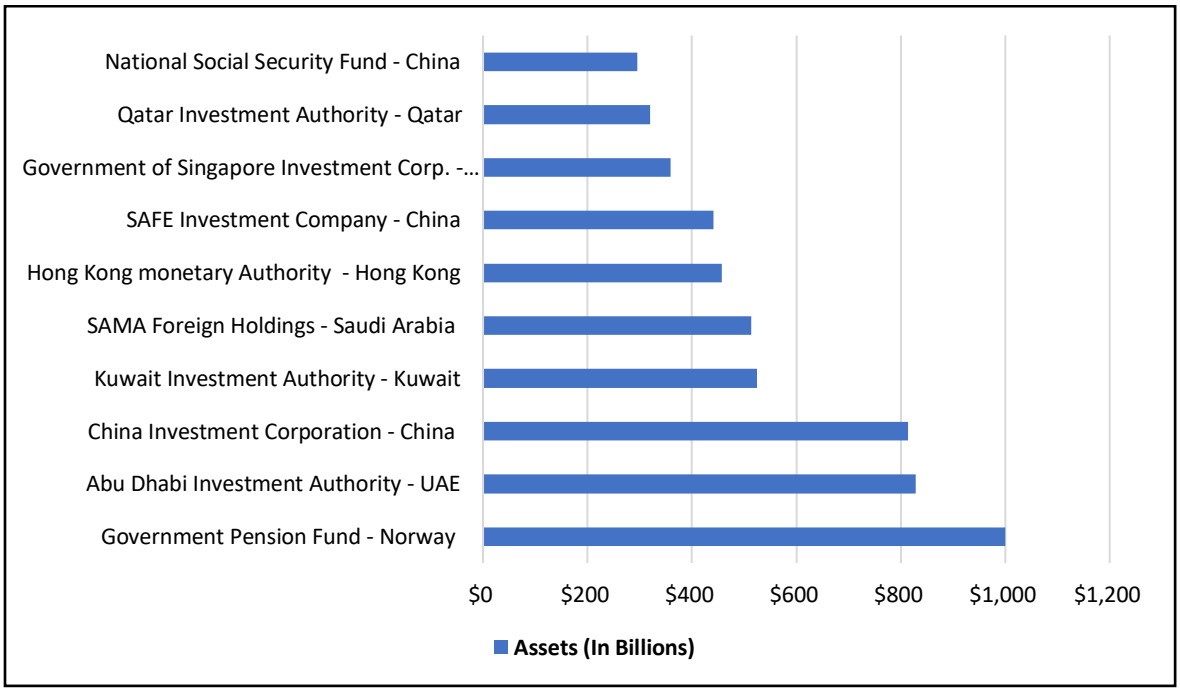
Government of Singapore Investment Corporation (GSIC), which manages the country's foreign exchange reserves and reinserts its savings into long-term capital appreciated investments (Sharma 2018). Pointing to the rise in the number non-commodity state funds, Abdullah Al-Hassen et al. (2013) shows that many South East Asian nations began building foreign exchange reserves from trade surpluses in the late 1990s after the Asian Financial Crisis, to provide a currency cushion so that they could better manage financial crisis's. The report notes that as of 2013 nearly two-thirds of all SWFs, were in Asia, subjected to the role of mitigating the effects of currency volatility and managing foreign exchange surpluses.

Although, it is true that these state investment funds have existed for more than a century, by the turn of the new millennia the number of investment funds controlled by states had increased dramatically in both size and scope. In most cases, SWFs give governments, the ability to manage national savings and trade surpluses, enable further capital flexibility, asset diversification, improve portfolio returns, especially for economies that are heavily reliant on material resources (Guerin 2013). Overtime SWF have become useful tools to manage public finances and achieve macroeconomic stability (Guerin 2013). Whether these funds are used in dynamic investing, asset diversification, or currency stabilization, having the ability to address multiple socioeconomic goals has influenced many governments to establish their own SWF. With that said, the growth of these funds has been staggering, in 2007, there were just forty SWFs throughout the world, as of 2017 there were eighty–one (Capape and Santivanez 2017). In that same year, the combined assets of these SWFs exceeded $8 trillion and is predicted to grow to $15 trillion by 2020. There is otherwise no doubt that SWFs are significant players in the global economy and have the potential to be leaders in the sustainable economy as well.

The graph below, figure 6 shows the largest SWFs by assets under management in 2017. As shown, by assets under management the Government Pension Fund Global of Norway (GPFG), often referred to as the Oil Fund manages about $1 trillion in accumulated assets is the largest SWF. The fund was created in 1990 to give the Norwegian government the ability to mitigate the volatility stemming from its dependency on the oil market and to preserve surplus savings for future generations of Norwegians (Sun and Hesse 2009). The management of the fund is partly managed by the Norges Bank government officials and by outside professional money advisors (Guerin 2013). Over the years, the success of the Oil Fund and the appropriate

management of trade surpluses have privileged Norway to become one of the wealthiest and stable economies in the world. Furthermore, in 2017, the World Happiness Report ranked Norway's as the Worlds happiness nations (Chokshi 2017). Essentially, the stability and security that the fund allows has improved the livelihood of the Norwegian economy and society.

Figure 6. Largest Wealth Funds by Assets under Management in 2017



Source: Sovereign Wealth Fund Institute. (2018)

Sovereign Wealth Funds Today

Nevertheless, the investment decision of SWFs makes them unique because they are linked to the overall governmental economic objectives and organizational structure. Since SWFs are technically owned by the citizens of that nation, the allocations these funds can be socially determined and beneficial to the whole society. Therefore, the financial managers of SWFs have the ability to promote a more dynamic and extensive economy through socially conscious investing and stakeholder engagement (Guerin 2013). First, by transiting the substantial savings accumulated in these funds, governments can direct capital toward more productive investments via into emerging economies or new technologies (Jayaretnam 2009). Second, as long-term investors with no obligation for future calls and with low risk of insolvency, SWFs can restore

capital exhaustion and financial stability. Third, by allocating more capital in the private markets, SWFs can help fill financing gaps in illiquid, long-term assets. Fourth, SWFs can add diversity to global investments and socio-economic projects, which can offer greater market efficiency and lower market volatility (Capape and Santivanez 2017).

In summary, SWFs can provide an idiosyncratic framework to achieve a variety of socioeconomic goals, such as necessitate capital into inadequate markets, obtain a higher capacity for financial stability, and transform wealth into investment savings for future generations (Sun and Hesse 2009). As contrarian investors, SWFs can support global markets by injecting capital in times of financial stress and capital withdrawal. Internally, Gnomes (2008) asserts SWFs can even be used for several national objectives, such as debt repayment, funding for development projects, and exchange rate interventions. In addition, SWFs can protect nations from the effects of global financial contagion during economic downturns or so call Dutch Disease[6] (Gnomes 2008). Despite the reasons why nations establish SWFs, it is undeniable that these government operated wealth funds are becoming increasingly essential participants in the international monetary and financial system. There is no doubt that when transitioning into a sustainable economy, SWFs will be an important financial player, as they can supply liquidity to uncertain economies, support greener infrastructure projects, and reduce systemic risks overtime.

Achieving Improved Management Performance and Greater Transparency

As SWFs seek greater opportunities in developing economies, their capital resources present potential opportunities for both investors and economies receiving their foreign capital. Yet, Curto (2010) explains that directing capital flows toward developing economies carries inherent challenges for both the recipient nation and the investor. Prior to taking a position on a private market asset, SWFs should be aware that private market strategies are limited because they often incur higher risks and are burdened with information asymmetries (Guerin 2013). Host

[6] Dutch Disease is primarily associated with the discovery of a natural resource, it is the negative occurrence when there are significant increases in the value of a country's currency. It can decrease the price of competitiveness of exports and increases imports. The term Dutch disease was coined by the Economist magazine in 1977, discussing the crisis that occurred in the Netherlands after the discovery of oil in the North Sea.

governments who receive SWF capital may face similar risks, such as information asymmetry's, lack of clarity in fund objectives, and poor capital management.

A decision to invest in an asset, whether in developed or developing economies, is always a decision about the liability structure of the investor. Since each investor has different objectives, and those objectives determine whether they can invest freely in long-term and into illiquid investments, especially in uncertain markets (Sharma 2018). Due to their objectives, SWFs differs widely in terms of investment strategy, transparency, disclosure of portfolio information, and appetite for risks (Curto 2010). While the reasons vary, SWFs often hesitate to take positions on infrastructure assets in developing economies in fear of increased exposure to political and regulatorily risk (Sharma 2018). Other investors cite that small and developing economies are often are based on weak governmental structures, unsustainable political systems, and limited business openness. This presents significant issues about the adaptability, accessibility, and stability of the assets they are seeking to invest in (Curto 2010). With that said, fund manager will have to confront these conflicts with uncertainty when making portfolio decisions and investing in developing economies.

On the other hand, nations receiving SWF financing will have to consider the risks of these state-owned investment funds (Sharma 2018). This follows Minsky's (2008) concern that the stability of emerging economies, as well as the investment prospects of developed economies, depends upon how capital assets are financed. Thus, host countries receiving SWF investment must adapt to the possibility of capital misalignment and market disequilibrium, as a result of mismanaged foreign capital. In fact, capital fluctuations or rapid changes in international flows can cause inflationary or deflationary pressure and disrupt financial markets, thus, limiting a developing economy with the ability to achieve dynamic economic and social growth.

Since the abandonment of the Bretton Woods agreement, developing countries have been consistently concerned about capital fluctuations, and capital flows from industrialized nations. Market instability in a developing economy can occur if there is a sudden shift in the foreign private sector capital disposition, which causes investors to withdrawal or inject new capital (Gallagher 2012). In the 20th century, J.M. Keynes and Raul Prebisch advocated that nations can employ countercyclical macroeconomic management tools, such as capital controls,

to help maintain economic stability and national self-sufficiency (Gallagher 2012). As cited in Crotty (1983), Keynes wrote: "the central control of capital movements both inward and outward, should be a permanent feature of the post-war system." While others on the "free-trade" side of the argument believed that the use of capital controls limits a nation's productivity, financial diversity, and economic growth; proponents of laissez-faire economic policy advocate that free capital flows dramatically improve a country's prospects for development, prosperity, and economic efficiency (Guerin, 2013). Like all institutional investors, SWFs can shift their capital positions, but in most cases, their mandates and procedures that govern these funds limit their capacity to do so. In many cases, Gnomes (2008) shows that SWFs can bring stability to developing markets given their large scale of capital under management and their long-term investment horizons.

Additionally, many host nations are concerned about whether capital from government-sponsored investors will be used for strategic non–financial purpose, i.e., gaining access to valuable information and for other deceptive acts. This follows Keynes, who once said "that all international cash flows are inherently political" (Gallagher 2012). Many development economists have stated repeated concerns over nontransparent investment from SWFs posing destabilizing threats to developing markets and triggering behavior among investors. Although much of these fears are often unjustified and their criticisms exaggerated, transparency is still definitely an issue with the relationship between investor and host nations (Guerin 2013). Despite repeated efforts to improve transparency, some SWFs still fail to report their portfolio strategies and investment information. This follows Gnomes (2010), who mentions that opacity is a feature in many SWFs, especially those from developing economies. Therefore, when considering any foreign capital, host governments should weigh the risks and advantages of protectionist retaliation against investors who might pursue strategic investments, while at the same time, they should measure the impact that protectionist strategies will have on the international financial markets and their own domestic economy.

In order to address the transparency issues arising from SWFs, the Santiago Principles were established in 2008 (Sharma 2018). The Santiago Principles are a series of universal principles that aim to improve transparency among SWF governance. The agreement outlines twenty-four common practical items of guidance for appropriate governance, accountability

arrangements, and long-term investment procedures. The reporting and disclosure of SWF portfolio information in accordance with the Santiago Principles relies entirely on voluntary self-assessment and is at the discretion of the SWF managers. Alex Buteica and Catalin Petrescu (2017) suggests that a number of steps are necessary to improve the effectiveness of the Santiago Principles, namely: improving disclosure practices; improving the quality of compliance self-assessments; relying on third-party verifications of compliance with the Santiago Principles; and exploring the possibility for regulations to recognize and endorse the Santiago Principles formally. Although the establishment of the Santiago principles was a step in the right direction, the main problem is that these principles are not legally binding, and such initiatives have mostly fallen short in providing proper measurement tool that weigh the impact of SWF investment. Buteica and Petrescu (2017) recommend that SWFs be required to publicly display earnings, portfolio strategies, and holdings in accordance with international law.

As such, there is still a greater need for enhanced financial management and transparency investment practices. Therefore, it is imperative that fund managers initiate management tools and measurements to ensure the efficiency and accountability of their investments. As such, in order to lower information asymmetries, ensure sound fund governance, and diminish corruption, then mandatory international reporting standards must be applied to SWFs. By merely making investment information, public information, can drastically lower uncertainty and risks, for both investors and host nations. While requiring investors to report portfolio information is difficult, it is also a critical step in lowering investment asymmetries and capital inefficiencies (UNEP 2017). Therefore, in order to transition into a sustainable economy, its increasingly important that both SWFs, host countries, and international regulators work together to improve transparency practices, investment strategies, and financial standards.

The goal of this report is to show that all SWFs globally can contribute to a sustainable economy; however, failure to implement transparency standards can prove detrimental to SDG progress. Addressing this issue, Voysey et al. (2016) notes there have been some valiant efforts to improve investor transparency and to implement universally accepted practices, such as the establishment of the Principles for Responsible Investing, the International Forum on Sovereign Wealth Funds (IFSWF), Institutional Investor Roundtable, and the Linaburg-Maduell

Transparency Index (Voysey et al. 2016). These international agreements and financing tools have been effective at promoting greater transparency and adherence to investment practices for institutional investors. Each new transparency tool and policy has helped resolve some of the uncertainty that countries face when receiving SWF capital. Yet without a universal system that integrates transparency standards into investment governance will limit the capacity for SWFs to manage assets properly.

Private Market Alternative Investing and Strategies

Traditionally, most SWFs funds focus their portfolio distribution on assets in developed countries, mostly in bonds and equities. A characteristic of typical SWF is to take positions on safe, liquid investments offering low to mid returns (Gnomes 2008). In fact, Emmanuel Guerin (2013) notes that SWFs hold an ownership stake of around 8 percent of the publicly traded shares globally. Considering these factors, in the past decade, the United States, UK, and Germany have been the primary beneficiaries of most SWF capital. According to Rajiv Sharma (2018) many SWFs have already been participating in financing the SDGs related to growth (8), climate (13), conservation (14, 15), infrastructure (7), and consumption and production (12) by virtue of their portfolio exposure in the public markets (Sharma 2018).

Consequently, SWFs position in the public market space limits the impact they can have on sustainable development because they can only influence assets through secondary exposure, via stakeholder engagement or through overseeing which firms receive financing. However, secondary exposure cannot be the source of change if progress is to be made on the SDGs, especially given the time constraint of achieving them by 2030. According to Capape (2018), if SWFs or any other institutional investor are genuinely going to support the SDGs, they must have more in-depth exposure into private markets, in regions where capital is thin.

Vorsey et al. (2016) explain that many SWFs have already realigned portfolio strategies toward private market alternative assets, such as in infrastructure and real estate. For instance, SWFs spent 62 percent of all foreign direct investment (FDI) on real estate and infrastructure in 2016; comparatively speaking, the average only four years earlier stood below 30 percent (UNEP 2017). According to Capape and Santivanez (2017), on average these two asset

(infrastructure and real estate) classes represent a quarter of all transactions made by SWFs since 2010. This correlates with a growing trend among SWFs who see private market assets as more attractive. For example, in 2007 only 12 percent of SWF assets were allocated to private markets; by 2017, private market assets represented over 30 percent of portfolio holdings. To put this in context, in 2007 SWFs only spent around $288 billion in private market financing, but by 2016 that sum had increased by 460 percent to $1.6 trillion value of total SWF asset allocation (UNEP 2017). As noted, Capape and Santivanez (2017) just in private equity alone, SWF's holdings grew more than 14 percent between 2015–2017. As such, by the end of 2017, SWFs had invested more in the private markets than in cash and fixed income assets, which only represented 28 percent of portfolio holdings (UNEP 2017).

Even traditionally minded SWF managers, who seek to invest in low-risk assets and to protect portfolio positions from market uncertainty, have shown intentions to move into developing economies and allocate more resources into the private markets (Guerin 2013). One benefit that investors see in transferring to private markets is that in many cases, portfolio returns are becoming higher as compared to public markets. Other benefits include having more direct control over strategies, planning, and implementation processes of long–term projects and assets. Despite the benefits, an investors ability to move to alternative assets depends mainly on the individual asset manager appetite for risk. In other words, an alternative investment must align with investors mandates. Due to this, not all institutional investors have been able to shift into private markets. For example, pension funds are often highly leveraged and are pinched for returns, insurance companies are limited by their mandates, and hedge funds already maintain positioning in both the public and private spheres. Meanwhile, SWFs have been very versatile with their private market strategies, as they have moved away from a passive approach to asset management to a more proactive investment strategy. Just in 2015–2017, the share of total SWF investing in developing economies infrastructure and real estate increased from 59 percent to 63 percent (Capape and Santivanez 2017).

Stefano Curto (2010) highlights that as compared to developed economies, developing nations offer opportunities for economic growth, business investment, and stable long-term returns as compared to public markets. As such, SWFs have enormous potential to revert the savings and capital holdings generated in surplus countries toward the developing world, where

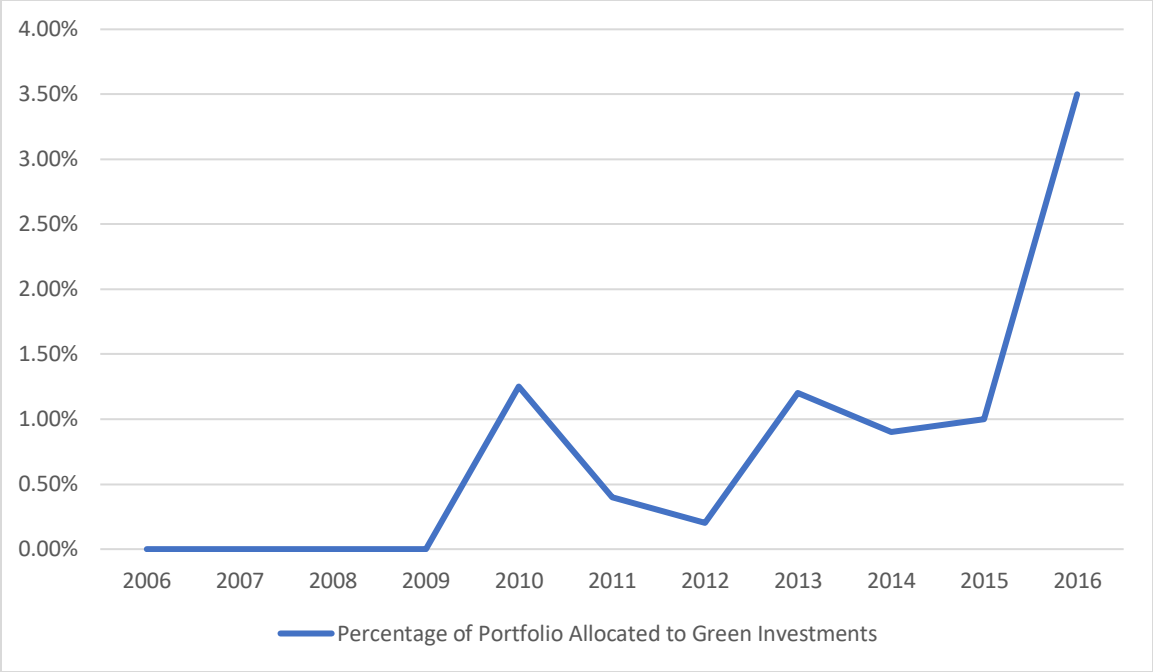
capital can be more productive and efficient. Curto (2010) continues to explain that it is essential that SWFs to consider employing more capital to developing economies because there are more direct investment opportunities in these regions. Moreover, allocating SWF capital to developing economies is important for a few reasons: they could become a driving force in north-south, and south-south flows, as funds mobilize capital into developing markets and vice-versa; they could help stabilize capital markets, as was seen in the most–recent financial crisis and the can be a catalyst for financing long-term investment projects (Thomas 2018). In short, SWFs have a tremendous capacity to influence the sustainable development in developing economies, while at the same time, they can create more dynamic opportunities for themselves and the nations they operate in. Notably, by realigning values and increasing private market financing (infrastructure, real estate, and venture capital) SWFs can have more impact on sustainable infrastructure development than other investors (UNEP 2017).

Sovereign Wealth Fund Portfolio Allocation and Impact Investing

Capape and Santivanez (2017) recommend that to have a positive impact on green growth and the SDGs, SWF's have a few different avenues they can go down. These include initiating decarbonization strategies by divesting in high carbon exposed companies; investing in green assets, such sustainable infrastructure and agriculture; or support renewable energy companies in both public and private markets. But as mentioned, the greatest impact that SWFs can have on sustainable development is through direct investments in the private markets, particularly in infrastructure (Sharma 2018). A few dynamic funds have taken actionable to increase private market investment allocation on assets that relate to an SDG or many SDGs. Since the establishment of the 2030 Agenda, SWFs have already committed $4.3 billion to green assets, invested over $3.5 billion in renewable energy companies, and are currently financing $2.2 billion in green infrastructure funds. (Capape and Santivanez 2017). In all SWF investment in renewable assets between the period of 2015 –2017 was about $11 billion, but still was only a small proportion of their current market allocations. Additionally, of the $11 billion that SWFs spent on green finance, only $2.2 billion was allocated into green infrastructure assets (Sharma 2018).

As impact investors, SWFs can apply climate change related asset into their long-term portfolio assets and take actionable steps to lower those risks. According to Simon Zadek and Nick Robins (2014) through proactive ownership, SWFs who adhere to the sustainable principles can apply stakeholder power to encourage companies and governments to withdraw from fossil fuel assets and reallocate funds to more sustainable resources. Additionally, their prominent position in public, corporate ownership also allows them to apply pressure to other shareholders and public investors, pushing them toward investments that meet the SDG principles. For example, Norway's SWF has been able to influence companies and projects they invest in, to improve on issues ranging from cultural diversity to specifics about executive payment. The example set by Norway, motivated other asset managers to apply similar strategies, such as the Nigeria Sovereign Investment Authority (NGIA), who now applies a robust SDG framework to assess potential companies prior to investing in them (Thomas 2018). Sharma (2018) mentions that by 2017, the total value of all divestments from non-renewable energy made by decarbonized portfolios amounted to $2.9 billion. That same year, 42 percent of the SWF industry reported they use the SDGs to measure and report the social impact of their portfolios (Sharma 2018). Figure 7 shows the aggregate portfolio share of green investments under the management of SWFs. As shown in the chart between 2006–2016, less than 1 percent of total SWF assets were allocated to green investment, but since the establishment of the 2030 Agenda, there has been a definite uptick in SWFs funding green assets, reaching nearly 3.5 percent of total asset under management in 2016.

Figure 7. Percentage of Portfolio Allocated to Green Investments, 2006–2016



Source: Halland (2017)

While some improvements have been made in green investments, most SWFs still allocate little capital without considering green sectors in their investment mandates and even less mention social concerns in portfolio decisions. Many investors still carry traditional beliefs that incorporating environmental, social, and governance (ESG) analysis in portfolio decisions will be detrimental to the overall performance (Capape 2018). This issue was addressed by Carolina Nowacki and Ashby Monk (2018) who explain that investors remain hesitant to invest in long-term unlisted and illiquid sustainable assets due to perceived lower returns compared to traditional non–renewable assets. Additionally, this correlates with the belief that renewable and infrastructure assets offer less capital mobility and are difficult to liquidate (Behrendt 2015). Also, according to the Linaburg–Maduell Transparency Index, as of 2018, only eight SWFs publicly disclosed their strategies on climate change and their solutions for filling the green finance gap (Sharma 2018). Truth be told, most SWFs have not positioned themselves as a qualitatively new source for financing sustainable development or ESG assets, and many still have no plans to do so (Behrendt 2015). Of the 81 SWFs that currently exist, only 21 have issued some sort of public strategy on green investment financing, and, in an overwhelming number of cases, SWFs mainly focus on optimizing financial returns, not social ones. Overall,

though the total value of SWF participation in private green finance and green investments for the period 2015–2017 was around $11 billion, this represents only 0.15 percent of all SWF assets under management (Capape 2018). In short, if progress on the SDGs is to be made, SWFs must be more proactive to align their goals with sustainable products.

Capape and Santivanez (2017) note that attitude for green investments is changing. In a survey of 45 SWFs in 2017, 84 percent said they have a strong desire to diversify assets into high growth developing markets in order to maximize returns and promote responsible investing practices. Conversely, to date, there are a few SWFs who have already invested in renewable energy corporations, projects, and directed capital towards sustainable and climate-oriented debt assets. This follows a growing trend among many SWFs who are reliant on revenues from nonrenewable resources to diversify their economies away from hydrocarbons by tapping into burgeoning sectors such as clean technology, low-carbon transportation, and sustainable infrastructure (Curto 2010). For example, SWFs in Australia, France, Ireland, New Zealand, and Norway have implemented climate-related investment strategies, but only Norway and New Zealand have integrated climate risks into their asset reporting procedures (Sharma 2018). Additionally, the Ireland Strategic Investment Fund has been able to form efficient green portfolio strategies, by applying stakeholder pressure on companies and governments to improve management practices and direct more capital towards the SDG-related assets (Capape 2018). While the examples set by these funds has shown an indication that the sustainable development agenda has opportunities in the SWF industry, there is still a long way to go.

Sovereign Wealth Funds: Sustainable Investing in Developing Economies

Although sustainable development has not been explicitly on the radar screen of the SWF managers in the past, it does not mean that it will need to remain absent in the future. The recent trends in the wake of the 2030 Agenda suggest that investor attitudes are more sympathetic to green assets and sustainable infrastructure. For example, the Government Pension of Norway reformed its SWF mission statement to include the focus: "to contribute to efficient and well-functioning markets and to promote work on international standards for responsible investing" (Capape 2018). Additionally, some progressive governments have also made significant impacts on SDGs, i.e., France established the Green Transition laws, which require institutional

investors to report climate change risk and the carbon footprint of their assets under management (Capape 2018). The Peoples' Republic of China just launched initiatives requiring investors to transfer vital capital to green energy sectors and clean transportation infrastructures. Furthermore, demographic pressures, social movements, government policies, and changes about the perceived risks associated with sustainable assets are factors that may help improve green infrastructure spending from SWF (Capape 2018).

While there are no universally accepted standards for measuring SWF impact on SDGs in the aggregate, it is safe to say that the field of climate finance has been improved by the creation of many climate–policy-oriented institutions and groups. One example is the One Planet Sovereign Wealth Fund Working Group, formed in 2017 with the primary mission, "to accelerate efforts to integrate financial risks and opportunities related to sustainable assets into the management of large long-term investors" (One Planet Summit 2018). The UN is the founding member of the Green Fiscal Policy Network, a web-based platform which aims to disseminate knowledge and policies to enhance SDG investment opportunities (Sharma 2018). Lastly, the creation of the Sovereign Wealth Institute enables cross-fund discussion, facilitates data services, and provides research on global projects that need financing (Capapé 2017). In all, these organizational shifts among global partners have made sustainable assets more accessible for SWFs and have opened new opportunities for corporations, communities, and developing economies.

New tools relating capital alignment and asset management, have been created to help investors, such as SWFs, bypass working through private equity structures to enable them to focus capital on long-term sustainable sectors directly. One such tool for analyzing potential sustainable infrastructure projects is designed by Aligned Intermediary (AI). According to Nowacki and Monk (2018), AI develops financial tools, standardizations, and specifications that guide investors through long-term climate infrastructure projects. AI was founded in 2015 as a White House initiative to help investors source, screen, enact due diligence, and implement green infrastructure and technologies in order to connect them with long-term investors. Currently, AI works with nine SWFs, who have already committed over $1.4 billion to sustainable sectors. Other initiatives that seem promising are the International Investors Roundtable (IIR) created in 2010 to identify areas where investors could collaborate on

investments. Essentially, the IRR helps investors guide capital toward sustainable sectors that offer investors the chance to maximize long–term risk-adjusted returns (Nowacki and Monk 2018). Both these organizations support the development of a standard measurement system that would increase the effectiveness of SWF investments and can help fund managers optimize portfolio performance.

Even though these initiatives and strategies have been sufficient to a certain degree at aligning investors with climate target and assets, incorporating climate–risks into investors' portfolios is still challenging (UNEP 2017). While numerous studies have shown that sustainable assets are more dynamic and profitable for long-term investors, without metrics to prove long-term value and overall returns improvements, it may be hard to convince investors to make the shift. To shift SWF behavior will require a concentrated effort addressing attitudes and investment operations all the way through incorporating relevant criteria into portfolio processes. In fact, the existing asset indexes, such as the Cisco Discovery Protocol Global Climate Index and Intergovernmental the Task Force on Climate-related Financial Disclosures (TCFD), allow only for an approximation of the impact that investment have on the climate and mostly focus just on the portfolio management rather that transition-level improvement for green investments (Sharma 2018). However, the climate infrastructure industry is demanding a robust international classification system based on asset standardizations that can help measure the impact of private sector capital on SDGs and their overall the socioeconomic goals. While the investment tools and innovations like those designed by AI provide hope, measuring SWF progress in green infrastructure will be increasingly difficult without mandatory SWF disclosures, reporting standards, and transparency practices.

Co-Investment Opportunities and Investment Strategies

SWFs face mounting risks when investing in new ventures, especially in uncertain markets and in assets marked by information asymmetries. Building on the last section, many SWFs have been proactively searching for ways to lower systemic risk, improve returns, and allocate more sustainable finance. The 2030 SDGs and the Paris climate targets provide an excellent roadmap for investors to explore new innovative techniques for acquiring more sustainable assets and increasing the global efforts to address climate change. A growing theme among SWF

management is employing new strategies, such as collaborative investing and co-investment partnerships (Nowacki and Monk 2018). In fact, 2015 there were over 590 co-investment arrangements, which was twice the number of collaborative partnerships than in 2007 (Andersson, Bolton, and Samama 2016) As such given the growing number of partnerships and co-financing arrangements among institutional financiers; such new financial arrangements will be increasingly crucial for sustainable investment (Nowacki and Monk 2018; Capape 2018). This because collaborative investing, allows investors to increase transparency, implement effective management practices, and finance more green projects while at the same time, decreasing overall risks and market uncertainty.

Such investment initiatives feature collaboration between partners that have unique strengths that can be applied to capital–demanding projects. For example, SWFs, which are inherently government-backed, could partner with high–performing private equity firms to improve investment performance, financial stability, and diversity in investments (Capape 2018). Furthermore, these collaborative investing techniques allow investment firms to hedge their portfolio exposure to different market segments and reduce long-term risks in capital projects (Andersson, Bolton, and Samama 2016). Additionally, these co-investment arrangements have allowed large global investors with substantial long-term assets under management to partner with top money managers and even with activist organizations throughout the world, too improve the efficiency of their investments. Take for example, Abu Dubai's SWF partnership with the global commodity trading company Trafigura in 2015, the two firms were able to buy three metal mines in Spain and jointly acquire a controlling stake in the iron ore port in Brazil, thus providing jobs and vital economic growth to these regions (Andersson, Bolton, and Samama 2016). These projects had better outcomes because the long-term capital backing of Dubai was able to be optimized through the risk/return strategies that Trafigura implemented.

Another critical aspect of these co-financing arrangements is the ability to transfer a greater capacity of savings to large financial projects, necessitate capital into inadequate markets, and transform wealth into meeting the SDGs, mainly investing in infrastructure development (Nowacki and Monk 2018). These benefits can be seen in partnerships, like the New York-based Global Infrastructure Partners (GIP) and China Investment Corporation (CIC)

who announced the acquisition of a portfolio of Asian Wind and Solar Energy projects for $3.7 billion. GIP was able to advise and share its knowledge of infrastructure finance, whereas CIC was able to provide stable long-term capital. When finalized in 2019, the energy project will be the largest renewable energy infrastructure acquisition in history (Nowacki and Monk 2018). Additionally, financial stability and market issues can be addressed in emerging market when investors partner with multilateral organizations that foster greater transparency and openness in transactions (Gnomes 2010). For example, the partnership between the International Finance Corporation (IFC) and Vietnams' SWF State Capital Investment Corporation, enabled greater investment stability and cooperation in acquiring state-owned companies in Vietnam (Nowacki and Monk 2018).

As the 2030 Agenda gains further traction, investors will face consistent pressure to transition to sustainable portfolios; as such these co-investment arrangements provide an opportunity to build diversity in their portfolios while at the same time making an impact on the SDGs. Nowacki and Monk (2018) explain that partnerships that focus on improving green development will require that these shared portfolio investors be persistent in promoting ESG criteria over existing assets and future investment projects. These partnerships can utilize the strengths of all actors and enhance knowledge, expertise, and bring capital stability to long-term green projects. However, the extent to which co–investment arrangements actively engage with SDGs will depend on firms, capacities, and the individual partner's investment objectives (Glancy 2012; Baker 2018). For example, in 2017 the Abu–Dubai Based SWF, created a joint investment fund with China's Development Bank Capital and with China's State Administration of Foreign Exchange to enhance mutual infrastructure spending in both countries. The partnerships aim is to look "at a range of alternative investment strategies, asset classes, and special opportunities, including greenfield investment projects, with the goal of building a balanced portfolio focused on sustainable" (Sharma 2018).

The management and governance structure of these partnerships varies, but usually, such arrangements are managed partly in-house by a group of individual managers and partly by external financial managers working on the project in a collaborative manner (Klemper and Tarnoswki 2017). The task of managing co–financing arrangements is challenging because of the difference in partners management style, culture practices, and a dissimilar appetite for risks

among individual investors. A well-managed co-investment project can support the delivery of the SDGs and sustainable infrastructure by helping to improve the quality of financing, strengthening board values, earmarking high–impact projects, and promoting green, ethical investments. Such arrangements could accelerate investments in companies who are socially conscious and finance sustainably and inclusive development projects (Nowacki and Monk 2018). In an era in which traditional finance is retracting, the impact of these associated partnerships will be crucial to funding future development and financial patterns in developing economies (Sharma 2018).

More institutional investors and not just SWFs should continue to partner with governments and multilateral organizations to address the SDGs through sustainable infrastructure investment. For examples international collaborative partnerships could enhance the social and economic SDGs related to (1) poverty, (2) hunger, (4) quality education, (5) gender equality, (10) reduced inequalities, and (16) social justice institutions. These partnerships can improve access to new markets, open new financial opportunities, and enable higher financial returns for each partner (Nowacki and Monk 2018). Some arrangements will focus more on earning higher returns and improving portfolio outlooks, while others will focus on more strategic considerations and financial stability, such as employing funds in capital depressed markets. Accordingly, partnerships can reap benefits by anticipating the global shift into green assets and scale–up investments in (7) energy, (11) cities, (13) climate, (9) infrastructure, and (6) water, through agreements that focus on these financing opportunities (Sharma 2018).

Consider the co-investment arrangement between the Abu Dhabi Investment Authority (AIA) and British Columbia Investment Management Corporation teaming up with Macquarie to buy the energy supplier Open Grid Europe in 2016 (Nowacki and Monk 2018). The financial backing of the AIA combined with the high-transparent management practices of the Canadians provided capital stability and certainty within the partnership. Another notable example is the investment partnerships between international organizations, such as the European Union and the Government Pension Fund of Norway, under this agreement Norway's SWF divested all the capital that it had in non-renewable energy sources and reverted funds to sustainable assets. These partnerships demonstrate that co-investment strategies can deliver more efficient goods,

lower asymmetries between investors and governments, build effective financial networks, and promote the SDGs in the process.

Policy Recommendations

With substantial long-term assets under management and government-backed capital, SWFs are in a unique position to fund development objectives outlined in the 2030 Agenda. They have the potential to make the largest contribution to the SDGs that require long-term investments relating to infrastructure and real estate. Three approaches could influence SWF investment in these sustainable development assets and contribute to the SDGs.

First, the mandates that control the objectives of the SWFs must include a principle that applies ESG criteria when analyzing potential investments. The extent to which SWFs engage with green investment will depend on their risk appetite, mandates, and internal capacities (Capape 2018). Given that SWFs have long-term horizons, sustainable investment and climate-related concerns should align with their mandates. But at the present, many funds view investments that focus on an ESG criteria will compromise financial returns. Capape (2018) recommends that a genuine policy shift will need to take place within the mandates of funds from an external standpoint (governments and citizens) and in the internal management. This shift should help managers promote the benefits of green finance, align portfolio goals with green investments, and consider engaging in development as direct owners of sustainable assets. This follows the "One Planet Sovereign Wealth Fund" recommendation that investors align long-term investment horizons with climate change considerations (Sharma 2018). An effective way to increase awareness of sustainable initiatives is through improving regulatory and financial market advocacy efforts which encourages investors to transition to sustainable portfolio practices.

Second, SWFs have been hesitant to shift focus into developing economies due to the perceived higher risks and lower attractiveness of the assets in these economies. This problem relates to the individual investors' appetite for risks and their willingness to allocate funds into uncertain regions. Despite this, SWFs should recognize the numerous opportunities developing regions, particularly for investors with reliable long-term private capital. Infrastructure assets in these economies are in dire need of financing; this issue presents a perfect opportunity for SWFs

whose long-term horizons fit well with these products. This can be achieved through improving engagement with governments, data collection, expanding performance/risk metrics, and through partnering with experts or existing investors in these regions.

Finally, the investment themes of SWFs relate very well to those outlined in the 2030 Development Agenda. As such, SWFs should recognize that investments in sustainable development can help them meet their financial performance objectives and achieve societal goals as well. To achieve this, SWF should analyze how individual SDGs or multiple SDGS can translate into long-term investment opportunities. They will also have to go beyond just choosing the SDGs the fit well into their portfolios, but also consider the SDGs that are more difficult to obtain. As Behrendt (2015) says, "what is needed is investment products that incorporate these social objectives and offer attractive commercial returns." In particular, the social goals of (1) no poverty, (2) zero hunger, (4) quality education, (5) gender equality, (10) reduced inequalities, and (16) strong institutions are currently challenging to address (Sharma 2018). In short, SWFs should consider a variety of options when engaging in the SDGs, the process of reallocating funds to sustainable assets requires careful coordination among the investors and the host nations they invest in.

Although SWFs can make a tremendous impact on achieving the SDGs, the green portfolio transition process is a large constraint for many investors. One of the main issues that SWFs face is the lack of clarity in portfolio decisions and a weak management structure, contributes to inadequate strategy disclosure, fund opaqueness, and low performance (Capape 2018). Since SWFs are inherently political and are highly exposed to public opinion, uncertainty in portfolio discretion is consistently a burden for fund managers. To resolve this issue, SWF managers should implement secure governance practices that help ensure efficiency and accountability of investments to lessen the burden on their partners. Sound fund governance practice will define proper investment mandates, provide incentives for effective fiduciary practices, and enable the monitoring of shareholder preferences. Thus, achieving efficient governance practices requires that SWFs improve reporting standards, disclosure investment strategies, and be able to clarify fund objectives. (UNEP 2017).

The One Planet Sovereign Wealth Fund (2018) recommended that SWF managers integrate climate-related risks into their portfolios to improve the resilience of long-term

investment positions. Fund managers should also take the lead in the global investor community by integrating an ESG criteria in their investment analysis. Capape (2018) recommends that SWFs use ESG metrics to appraise investments across their entire portfolio. As SWFs optimize more low-carbon investments, they should form partnerships with organizations such as the Financial Stability Board Task Force on Climate-related Financial Disclosures (TCFD) and Aligned Intermediary who seek to help investors coordinate their strategies with more green initiatives (Sharma 2018). However, in accordance with their objectives and the progress they have made, it is still clear that SWFs managers still have much work to do.

Likewise, governments have a role to play in attracting SWF investments into their capital-deprived projects and their overall economy. This could include building a more sustainable project pipeline, streamlining contractual processes with investors, providing government-backed guarantees for sustainable infrastructure investments, and making long-term tax incentives for sustainable investments. In general, the profitability of low carbon, resource–efficient, and environmentally friendly investment projects depend on setting up public policies that ingrate climate change related risk within assets and capital projects (Nowacki and Monk 2018). Policy makers will need to coordinate investment measurements criteria (like ESG criteria) for SWFs who are interested in investing in their economies. Such measurement metrics should be provided to SWFs so that they can appraise projects and measure them across their entire portfolios to ensure they are in line with the SDGs (Sharma 2018).

Additionally, governments have a role to play in aligning investments to the most capital deprived SDGs, such as in infrastructure (7) or health (9). The methods that governments use to measure, and value sustainable projects should promote the quality of climate-related financial information and support the assessment of the climate risks associated with investments. Inherently investors will be more attracted to specific economies whose governments offer policy coordination that decreases asset opaqueness and provide them with accurate performance/risk data (Capape 2018). These measurements can also offer further details on how investors can translate assets in these economies into long-term investments that specifically address an SDG or multiple SDGs.

In order to address the risks, uncertainty, and poor investment outcomes in developing economies, SWFs and long-term investors have employed collaborative investing models, such

as co-investment arrangements and financial partnerships to enable further symmetry within capital projects, lower investment opaqueness, and offer diversity in asset ownership (Nowacki and Monk 2018). These collaborative investing techniques have shown to be especially crucial in financing SDG–related assets and for long-term private market assets, such as infrastructure and real estate. Most of the time, actors enter co-financing partnership seeking to strengthen networks, stabilize funding requirements, and achieve more of their management goals. By way of alliances, investors can partner with other investors or governments and commit to sharing information, collaborate on a specific theme, and create further opportunities for those affected by their investments (Nowacki and Monk 2018). On the other hand, host governments should encourage co-financing agreements because it better protects them from market issues, such as capital flight, stemming from investor choices. It also ensures that funds will not be used strategically and lowers transparency issues. Indeed, collaborative investing has shown improvements in both the projects effectiveness over the long-run and provided higher portfolio returns for investors, while at the same time lowering concerns for host governments.

In short, a growing proportion of financial actors and SWFs have made commitments to align their operations with climate change objectives and sustainable development assets. The reasons for this shift have been more a factor of investors finding unique ways to impact climate finance policies. Due to these changes, uncertainty and risks have decreased within green investment because of the improvements have been made between host governments and investors. As coordination has improved, governments have been able to show that green projects have positive future returns and offer investment stability for long-term investors. As such, investors looking to contribute to the SDGs have been very responsive to governments who provide a guidance on long-term sustainable assets. Based on these past successes, it is my recommendation that for sustainable assets to be more valued, that SWFs, as well as other investors, enact transparency standards and climate-risk metrics in their portfolios, whereas governments and international organizations should enforce those standards.

VI. CONCLUSION

The members of the United Nations' unanimous agreement on the 2030 Sustainable Development Goals (SDGs) reflects the environmental and development concerns facing nations throughout the world. These goals recognize that the preservation of our planet is a collective effort, requiring the action from all nations, investors, and corporations. As the world transitions into a sustainable and more inclusive economy, financing the SDGs will be a tremendous obstacle. The failure of past climate policies to reverse the effects of climate change has undoubtedly increased skepticism about whether the principles of the sustainable development agenda will be implemented. Caritas International (2015) said, "That the ambitions of the SDGs and their broad objectives have prompted uncertainty over whether these principles will be effectively put into practice." Even UNTCAD (2015) recognized that these SDGs are incredibly ambitious, especially when climate-related assets pose additional challenges, such as poor measurement techniques and low-carbon progress ratings.

Undoubtedly, achieving development goals requires significant changes in the current financial structure and regulatory framework. Therefore, financing a transformative development agenda will require greater investor adaptability and multilateral cooperation that ensures the availability of resources to be used more strategically. Even more, so will be the importance placed on improving investor depth and adopting an industrial design that incentivizes institutional investors to finance SDG-related assets and long-term sustainable projects. Furthermore, the existing sustainable framework that attracts financing from both private and public sources should be maintained and improved. This can be achieved by offering more innovative mechanisms and investment tools to help investors mitigate risks and realign portfolios to sustainable assets.

Governments in developing economies have the responsibility to attract capital to achieve the SDGs while at the same time focusing on their own domestic agendas. This could be done through increasing the number of sustainable bankable projects that mitigate long-term asset risks, disseminates project information, and facilitates stable public sector coordination. Providing a proper pipeline of bankable sustainable infrastructure projects is not easy and requires comprehensive long-term planning, including cooperating with partners, organizations, investors, and existing projects.

Despite the risks in adjusting to a new financial framework, a well-managed transition to a low-carbon economy presents material benefits and opportunities for investors (Glancy 2012). Institutional investors will need to step up efforts in financing global development needs and realign their strategies the achieving SDGs, particularly in developing economies. Some of these investors are in better positions to have more of an impact in meeting the long-term financing commitments as demanded by SDG-related assets. SWFs have a comparative advantage over traditional financial institutions due to their inherent characteristics and financing sources. SWFs are, by definition, backed by the governments who created them to achieve many socioeconomic goals. These government backed funds are prime candidates to make impacts on the SDGs because they have a low risk of insolvency, usually take long-term financing outlooks, and the socioeconomic goals outlined in the 2030 Agenda fit well with the investment mandates of most SWFs. SDGs related to energy, infrastructure, sustainability, and production resonate with the mandates of SWFs and are the most important to transition into a sustainable economy.

While there is currently an aversion to sustainable investment given the perceived higher risks and lower returns among SDG assets, such attitudes are changing rapidly among SWFs. In the post-SDG world, SWFs as well as other investors, have become more attracted to alternative private market investing, such as long-term sustainable infrastructure. As such, the long-term capital offered by these SWFs will be crucial to fill the financing gaps across a variety of SDG-related assets. Beyond creating a collaborative environment in which long-term investors can contribute to sustainable sectors, it is useful to recognize that transitioning into green sectors presents great opportunities for these investors. As such, many investors are finding creative ways to mitigate risks, improve data collection, and create techniques to judge long-term investment options. Other investors have employed more collaborative techniques to reach their goals, these including multilateral agreements, international conventions, and co-financing arrangements. While there have been significant improvements in achieving a sustainable future, more than ever, financing sustainable assets require fresh thinking about the role that investors must play and demands a greater willingness from policymakers to act. Only through cooperation and transparency will investors, governments, and corporations be able to avert the

potential incidents that will harm the planet. It must be within this unifying spirit that these global actors and policies seize the vision of a free and inclusive world.

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