REGULATING AND SUPERVISING PENSION FUNDS TO FINANCE INFRASTRUCTURE IN AFRICA
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<tr>
<td>AES</td>
<td>Approved Existing Scheme</td>
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<td>AIIM</td>
<td>African Infrastructure Investment Managers</td>
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<td>APAK</td>
<td>Association of Pension Administrators of Kenya</td>
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<td>ARBS</td>
<td>Association of Retirement Benefits Schemes</td>
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<td>ASISA</td>
<td>Association for Savings and Investment South Africa</td>
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<td>CAPSA</td>
<td>Canadian Association of Pension Supervisory Authorities</td>
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<td>CDPQ</td>
<td>Caisse de Dépôt et Placement du Québec</td>
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<td>CIMA</td>
<td>InterAfrican Insurance Markets Conference</td>
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<td>CPFAs</td>
<td>Closed Pension Fund Administrators</td>
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<td>CPS</td>
<td>Contributory Pension Scheme</td>
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<td>DFIs</td>
<td>Development finance institutions</td>
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<td>DOL</td>
<td>Department of Labor</td>
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<td>EAC</td>
<td>East African Community</td>
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<td>ECAI</td>
<td>External credit assessment institution</td>
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<td>EIOPA</td>
<td>European Insurance and Occupational Pensions Authority</td>
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<td>ELTI</td>
<td>European Long-Term Investors Association</td>
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<td>EMDEs</td>
<td>Emerging and developing economies</td>
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<tr>
<td>ERGP</td>
<td>Economic Recovery and Growth Plan</td>
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<td>ERISA</td>
<td>Employee Retirement Income Security Act of 1974</td>
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<td>ESG</td>
<td>Environmental, social and governance</td>
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<td>EU</td>
<td>European Union</td>
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<td>FSB</td>
<td>Financial Services Board</td>
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<td>FSCA</td>
<td>Financial Sector Conduct Authority</td>
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<td>GDP</td>
<td>Gross domestic product</td>
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<td>GEPF</td>
<td>Government Employees Pension Fund</td>
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<td>GIF</td>
<td>Global Infrastructure Facility</td>
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<td>GIZ</td>
<td>Deutsche Gesellschaft für Internationale Zusammenarbeit</td>
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<tr>
<td>GPs</td>
<td>General partners</td>
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<tr>
<td>HLEG</td>
<td>High-Level Expert Group on Sustainable Finance</td>
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<td>IMF</td>
<td>International Monetary Fund</td>
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<td>INSEAD</td>
<td>European Institute of Business Administration</td>
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IOPS  International Organization of Pension Supervisors
IORP  Institutions for Occupational Retirement Provision Directive
JSE  Johannesburg Stock Exchange
LAPSSET  Lamu Port—South Sudan—Ethiopia Transport Corridor
LPs  Limited partners
LTIIA  Long-Term Infrastructure Investors Association
MENA  Middle East and North Africa
NDP  National Development Plan
NGN  Nigerian naira
NHC  National Housing Corporation
NOSI  National Organization of Social Insurance
NPC  National Pension Commission
NPF  National Provident Fund
NSITF  Nigeria Social Insurance Trust Fund
NSSF  National Social Security Fund
OECD  Organisation for Economic Co-operation and Development
PAIDF  Pan African Infrastructure Development Fund
PE  Private equity
PEPP  Pan-European Personal Pensions Products
PFA  Pension fund administrator
PFCs  Pension fund custodians
PIC  Public Investment Corporation
PICC  Presidential Infrastructure Coordinating Commission
PIDA  Program for Infrastructure Development in Africa
PiP  Pension Insurance Platform
PMFs  Private market funds
PPEEPF  Public and Private Enterprise Employees’ Pension Fund
PPP  Purchasing power parity
PPPs  Public–private partnerships
RBA  Retirement Benefits Authority
RBS  Risk-based pension supervision
REIPPP  Renewable Energy Independent Power Producers Program
RSA  Retirement savings account
<table>
<thead>
<tr>
<th>Abbreviation</th>
<th>Full Form</th>
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<tr>
<td>SIF</td>
<td>Special Insurance Fund</td>
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<tr>
<td>U.K.</td>
<td>United Kingdom</td>
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<td>U.S.</td>
<td>United States</td>
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Overview of Preliminary Recommendations

Institutional investors—primarily pension funds and insurance companies—hold about $100 trillion in assets globally. The long-term nature of infrastructure assets has the potential to match the liability-driven investment needs of these investors, whose liabilities stretch over decades. Infrastructure assets also have the potential to yield higher returns and offer lower correlations (and hence wider diversification opportunities), compared with such traditional assets as fixed-income securities and listed equity investments.1 Yet so far, there has been surprisingly little investment in infrastructure by most institutional investors, particularly pension funds (World Bank, 2018a). This is especially true for the emerging and developing economies (EMDEs).

African pension funds have been expanding in recent years, albeit from a low base, thanks to the rise of the middle class and the regulatory reforms that bring more people into the social security net. Pension funds in the six largest African markets could grow to an estimated $7.3 trillion by 2050 (from $800 billion in 2014). But pension investments in Africa have been focused mainly on government securities, real estate and bank deposits, with smaller proportions in equities and corporate bonds. There has so far been very limited investment in infrastructure (GIZ, 2017).

As Africa nations strive to mobilize their pension funds to invest in long-term assets necessary for development, they need to consider how the regulatory and supervisory structures of their countries can impede such investments.2 This study identifies these impediments and provides guidelines on how best to overcome them.

There is an urgent need to improve the policy and regulatory frameworks as well as the business environment for attracting more investment in infrastructure by African institutional investors (Sy, 2017). One of the key challenges for Africa’s pension fund regulators is to encourage portfolio diversification for pension funds to manage risk, while ensuring that diversification itself does not become a source of risk as pension funds venture into hitherto unknown asset classes and markets. Changes to the governance, regulation and supervision of pension funds to help them invest in infrastructure has to be consistent with their primary goal of ensuring old-age income security.

This study reviews the structure and regulations of African pension fund systems, focusing on Egypt, Kenya, Nigeria, South Africa and Francophone countries. It also examines key trends in the structure and regulation of pension funds in other countries and regions including Australia, Canada, the European Union, the Netherlands and the United States. It then provides some preliminary recommendations on how best to improve the regulation and supervision of pension fund systems in Africa, with a view to promoting long-term investments, especially in infrastructure projects. Some of the key recommendations are:

- Introduce risked-based investment regulations with clearly defined standards of accountability for pension fund fiduciaries and investment managers. Risk-based investment regulations are more effective than rule-based regulations in allowing pension funds to diversify their portfolios while controlling risks and are more appropriate for investing in alternative assets, including infrastructure and other long-term assets. Given that risk-based regulation places more responsibility on pension fiduciaries, this requires an appropriate standard of accountability.
• Remove barriers to pension fund efforts to diversify their investments. Since it takes time to move from a rule-based to risk-based regulatory system, some portfolio limits are likely to remain in place in most countries. Regulators should consider modifying or removing specific limits that can limit investment in infrastructure, such as restrictions on investment in privately placed equity and debt.

• Establish infrastructure as an asset class with its own investment limits. Investment in infrastructure and other long-term assets can be encouraged in rule-based systems if such assets are identified as an asset class and a specific limit is established for them. However, there needs to be a clear definition of what infrastructure assets and investment vehicles can be included in this category.

• Encourage fiduciaries to recognize the positive externalities that investing in infrastructure can have on future pension fund returns. The primary purpose of pension investing is to provide it members with an adequate income in retirement. To do this, attention should be paid to the long-term impact of investments on the country’s development, not just the short-term returns to the assets in the portfolio. To allow pension fiduciaries to do this, the benchmarks for judging their performance cannot be limited to short-term market returns, especially in countries where such indicators do not truly reflect the overall performance of the economy.

• Integrate ESG considerations into pension investing. Given the demonstrated importance of environmental, social and governance factors on the long-term performance of an economy, combined with the difficulty of measuring their benefits from market signals, pension fiduciaries need clear standards for evaluating their investments in relation to such factors.

• Promote the consolidation of smaller pension funds to promote better governance, achieve administrative efficiencies and have the scale necessary to invest in infrastructure. Smaller pension funds are generally less successful in their investments and have poorer governance than larger pension funds. Consolidating funds that are below adequate size will also facilitate pension investment in infrastructure and other long-term assets, which generally require larger investment staffs and larger single investments.

• Support the development of private market funds that can help pension funds invest in infrastructure and seek good alignment of interests between the two. Most pension funds do not have the internal staff resources to invest effectively in infrastructure and other long-term assets. Private market funds can be useful vehicles for such investment if they are structured properly and have an appropriate alignment of interests.

• Facilitate the pooling of pension assets for investment purposes. Net returns to investments in infrastructure and other long-term assets are generally higher for direct investing than they are when invested via private market funds. For pension funds too small to invest directly, an alternative is to pool their assets with other investors with aligned interests.
• Encourage the formation of co-investment platforms, including platforms combining foreign and domestic institutional investors. Pension funds can also increase the effectiveness of investing in infrastructure and other long-term assets by co-investing with other entities that have better capabilities for such investing. In many EMDCs, co-investing with foreign investors may provide domestic pension funds good investment opportunities while facilitating the development of their capabilities.

• Help pension funds develop their in-house capabilities to invest directly in infrastructure. Pension regulators should promote training of pension investment staffs for investing in infrastructure. Because one of the ways for pension funds to quickly acquire these skills is to recruit experienced staff from private investors, barriers to such recruitment should be lowered if possible.

• Promote capital market refinancing once infrastructure projects are operating successfully. While there is a high demand for pension fund financing of greenfield projects, most pension funds are not willing to take on construction risk or able to provide the oversight needed during the project construction period. Post-construction refinancing of bank debt with capital market financing via project bonds has proven effective for bringing pension funds into the financing of infrastructure projects. Pension regulations should facilitate this process, for example by allowing pension funds to invest in unlisted infrastructure project bonds.

• Encourage pension fund regulators to coordinate with securities market regulators to facilitate pension fund investing in infrastructure. Pension and securities market regulations need to work together to ensure the vehicles that pension funds need for investing in infrastructure and other long-term assets. For example, regulations for issuing listed and unlisted project bonds may need to be adopted that meet the specific needs of pension funds and of project sponsors (such as dealing with confidential information). Similar coordination may be needed for the development of infrastructure investment funds.

• Work to harmonize pension fund regulation and supervision across borders to encourage investing in infrastructure. Cross-border investment in infrastructure is a critical need in many regions of the world. Harmonising pension fund investment regulations makes it less difficult to secure financing for these projects and can open new investment opportunities for pension funds.

Although regulatory and supervisory restrictions on pension fund investments in infrastructure need to be reduced, this will not alone be adequate. Other determinants of such investing must also be supportive, including the institutional and legal framework, the depth and strength of the financial markets and the availability of vehicles for investing in infrastructure (Alonso, Arellano and Tuesta, 2015).
Pension Fund Structure, and Regulations for Financing of Infrastructure in Africa

This section provides some general background information on pension systems in African countries and describes how pension funds in these countries provide financing for infrastructure. A key country was selected in each of the major regions. (A summary of the Francophone countries of West Africa was also provided because their pension systems differ somewhat from the Anglophone countries of West Africa.)

South Africa

South Africa is an upper-middle-income country and the second-largest economy on the African continent (Brookings, 2017). Its GDP, $316 billion in 2015, is projected to reach $504 billion in 2040 (InfraCompass, n.d.). Infrastructure investment in 2016 was about $10 billion against a projected investment need of approximately $15 billion. The gap between the infrastructure investment needs and the spending trend for 2016–40 is $152 billion. For a population of about 53 million, 5,144 pension funds registered in South Africa in 2016 represented more than 16.5 million members. The assets of South African pension funds were 75 per cent of GDP in 2017 (Willis Towers Watson, 2018; OECD, 2017a).

South Africa has the benefit of a sophisticated and well-regulated financial services industry with investment vehicles to facilitate infrastructure investments. Political support for infrastructure investment has been most pronounced under the National Development Plan (NDP) and Presidential Infrastructure Coordinating Commission (PICC). The PICC has a mandate to plan and coordinate the National Infrastructure Plan, aimed at facilitating fast-tracked government-led infrastructure investment across several key sectors.

Retirement funds in South Africa comprise pension funds established for public servants, private pension funds, provident funds, retirement annuity funds, umbrella funds, preservation funds, unclaimed benefit funds and beneficiary funds. Most are subject to the Pension Fund Act (Hesse, 2018). But the largest—the Government Employees Pension Fund (GEPF), a public defined-benefit pension fund—is governed separately under the Government Employees Pension Law 21 of 1996. While the GEPF and several other public funds are mainly defined-benefit funds, most other pension funds in South Africa are defined-contribution funds.

Regulation 28 of the Pension Fund Act sets out the investment limits per asset class for South African retirement funds, with asset categories including cash, debt instruments, equities, immovable property, commodities, loans, investments in business of participating employer, hedge funds and private equity funds. So, there is not yet a specific asset class for infrastructure. Retirement funds will thus have exposure to infrastructure assets in a few different asset classes, specifically through debt (both listed and unlisted), listed equities and private equity.

One major highlight of Regulation 28 (in the 2011 FSB revision) is that it requires retirement funds to take environmental, social and governance concerns into special consideration to maintain the long-term sustainability of assets. According to a survey by the World Wildlife Federation, 93 per cent of South African investors believe Regulation 28 played a major role in shifting emphasis towards environmental, social and governance principles. As of 2014, the
Investing for Impact Barometer states that 36 per cent of asset management funds in South Africa have criteria on responsible investment (Brookings, 2017).

There is a strong push by the Financial Sector Conduct Authority (FSCA) in South Africa to consolidate the pension industry from a multitude of smaller and mid-size funds into fewer and larger umbrella funds. The number of active funds is targeted to fall to about 200 from the current 1,600—by establishing minimum requirements for size of membership and amount of assets under management (Hesse, 2018). Added to this is the push to professionalize fund trustees and fund executives, intended to produce better outcomes for retirement fund beneficiaries.

Even though Regulation 28 does not explicitly define the infrastructure as an asset class, there is strong and growing support for investing in infrastructure assets by South African pension funds and insurance companies. The GEPF’s Developmental Investment framework launched in 2012 commits it to investing 5 per cent of its total portfolio in developmental investments that are predominantly in infrastructure, both in South Africa and in rest of Africa. The government-owned Public Investment Corporation (PIC) manages these GEPF investments through the Isibaya Fund,7 targeted at providing finance for projects that support long-term economic, social and environmental growth in South Africa and the rest of the continent.

South Africa’s Renewable Energy Independent Power Producers Program (REIPPPP) saw equity and debt investments by numerous domestic and international investors, which included several South African pension funds. On the debt side, 64 per cent of funding was by South African commercial banks and 31 per cent by development finance institutions.8 It is expected that the commercial banks will sell down some of their debt positions to secondary capital markets and position themselves for additional exposure in future REIPPPP rounds. The debt tenors are 15 to 17 years make investments attractive for longer term funds such as pension or life funds, which have funded a number of these projects to date.

South African pension funds, for a variety of reasons are less likely to invest in infrastructure assets and projects directly. Most choose to get their exposure to infrastructure through funds and fund managers with a specific infrastructure focus. South Africa has several infrastructure focused fund managers and firms, such as Harith Fund Managers9, a private equity infrastructure fund manager which manages a 15-year $630 million infrastructure fund, the Pan African Infrastructure Development Fund (PAIDF1) and recently announced the first close of the $435 million PAIDF2. African Infrastructure Investment Managers (AIIM)10 is another example of a private equity infrastructure manager that develops and manages private equity infrastructure funds designed to invest long-term institutional unlisted equity in African infrastructure projects. AIIM actively manages investments in East, West and Southern Africa and has equity under management of $2.1 billion, with investments spread across seven African infrastructure funds.

The above-mentioned fund managers and infrastructure funds are simply two examples of infrastructure funds for South African pension funds to invest in infrastructure.

The Association for Savings and Investment South Africa (ASISA), has an infrastructure working group11 to work towards creating an enabling environment for the private sector to assist the public sector in funding infrastructure projects in South Africa. Such engagements have included the government’s REIPPPP program for renewable energy projects, engaging with
municipalities and metros to develop off-balance sheet funding models for metro infrastructure projects. It is working with the Johannesburg Stock Exchange (JSE) to develop project bonds as financing mechanisms for infrastructure. ASISA, the Batseta Council of Retirement Funds for South Africa and the Actuarial Society of South Africa have also partnered in various ways to expose pension fund trustees to infrastructure investments.

In 2018 the JSE announced its intention to list project bonds that will enable institutional investors to invest in infrastructure projects. The bonds are intended to provide a new asset class of bond investments for retirement funds while directing institutional investment funds into infrastructure. Similarly, green bonds issued via the JSE since 2017 can unlock the investment potential of green infrastructure, technologies and services. The City of Cape Town issued a 10-year green bond, which listed on the JSE’s bond market, and raised ZAR1 billion for the procurement of electric buses, energy efficiency in buildings and water management initiatives like water meter installations and replacements, water pressure management and the upgrade of reservoirs.

The education of South African pension fund trustees about infrastructure investment is recognized as a key priority by all industry stakeholders, including national and local government, ASISA, Batseta and the infrastructure fund manager community to further unlock pension fund assets to allocate to South Africa’s pressing infrastructure needs. Pension funds as universal owners given the diversification of their investments across all sectors of the South African economy, are likely see their total portfolio of investments benefit from improved infrastructure, which can provide the foundation for a stronger South African and regional economy.

Kenya

Kenya, a lower middle-income country, has the third largest pension fund market in Sub-Saharan Africa after South Africa and Nigeria (World Bank, 2018a; Murai and Kirima, 2018). The population is about 46 million people, and the unemployment rate is about 11 per cent (Trading Economics, 2018).

Kenya’s GDP, $74 billion in 2017, is projected to reach $243 billion in 2040, with average annual growth of 5.5 per cent (Global Infrastructure Outlook, 2018). The GDP per capita (on a purchasing power parity basis) was $2,993 in 2016 (Trading Economics, 2018). The total infrastructure investment in 2016 was about $5 billion against projected investment needs of about $10 billion. The gap between the infrastructure investment needed and the spending trend for 2016–2040 is $39 billion (Global Infrastructure Outlook, 2018).

There were 1,297 retirement schemes registered in Kenya in 2014. Pension assets as a share of GDP is relatively low at 18.3 per cent (Sy, 2017), with assets under management of $9.8 billion at the end of 2016.

Retirement funds in Kenya comprise:

- Individual Retirement Benefits Schemes.
Umbrella Retirement Benefits Schemes.

The National Social Security Fund (NSSF).

The Civil Service Pension Scheme.

The main retirement fund–related legislation in Kenya is the Retirement Benefits Act and the Chapter 197 Guidelines issued by the Kenya’s Retirement Benefits Authority (RBA). The Act also established the regulator, the RBA, with the mandate to supervise, regulate and promote the sector’s growth. The RBA is governed by a non-executive Board of Directors, its highest decision-making body. The Board is responsible for the overall policy direction and leadership of the RBA.

The formal retirement benefit sector covers about 15 per cent of Kenya’s labour force and the balance is attributed to the informal sector that is largely not under any pension scheme arrangement (coverage of the informal sector is estimated at less than 5 per cent). All retirement benefits schemes are established and operated under trust law unless established under a specific act.

All Occupational Pension Schemes, Individual Pension Plans and Umbrella Schemes are directly supervised and regulated under the RBA Act Cap 197. These defined-contribution and individual schemes are managed by licensed pension fund administrators. The law provides for the investment of pension funds within the East African Community (EAC), and these investments are treated as equivalent to local Kenyan investments. This aspect can be especially useful for cross-border infrastructure projects in the EAC.

The average portfolio of most Kenyan pension funds is heavily invested in Kenyan government securities, quoted securities and immovable property. This mostly conservative approach to investment in selected asset classes reflects the risk-aversion of most Kenyan pension funds. Asset allocations to more conservative asset classes could reduce investment returns and the potential of funds to beat inflation returns over the long term.

Infrastructure and housing have remained key priorities in Kenya’s development plans since independence. But the funds have little understanding of how these new and alternative asset classes should fit into the current investment policies and strategies of Kenyan retirement funds. Kenya has allowed this new class of investment under alternative investments within the “other” asset category, which must be approved by the RBA before such investments.

Offering viable investment opportunities for Kenyan pension funds are ongoing infrastructure development projects such as the Konza Technology City; Lamu Port—South Sudan—Ethiopia Transport Corridor (LAPSSET project); Standard Gauge Railway (Pilot—Nairobi–Nakuru–Mau Summit—Four Lane); and Kenya Vision 2030 aspirations.

To support investment into alternative asset classes like infrastructure, pension industry associations in Kenya—such as the Association of Pension Administrators of Kenya (APAK) and the Association of Retirement Benefits Schemes (ARBS)—have been engaging with their members and Kenyan fund managers to help them understand alternative asset classes, preferring to call them “new frontiers of investment”. So, there is already an opportunity to develop well-
structured investment grade investment instruments in critical sectors. A good way to start is having a “coalition of the willing” from the pension fund sector work with APAK and ARBS.

As in South Africa and other African countries, the education of Kenyan pension fund trustees and administrators is ongoing. The Kenyan government and the regulator, RBA, also lead in developing strategies for categorising the various approved asset classes to bring clarity to potential new asset classes, such as infrastructure, currently termed by the RBA as “other”.

Some practical examples of investment instruments and projects currently under development in Kenya that enable pension fund participation include:

- **Housing**: The Kenya government’s arm for commercial low-cost housing development is implemented by the National Housing Corporation (NHC), and is under way to structure and issue an NHC corporate bond, which would allow pension funds easier access to support and invest in this sector.

- **Energy**: Green bonds as per Kenya’s Green Bond Program will help to finance projects in the renewable energy, energy-efficiency, green transport and waste-water treatment sectors.

- **Water and waste management utilities**: A recent investment instrument to enable pension fund participation is the Kenya Pooled Water Fund, a special purpose vehicle comprising five water utility companies.

**Nigeria**

After fully recovering from the recent recession about two years ago, the economic atmosphere in Nigeria is dealing with many challenges and opportunities. With nearly 192 million people in 2017, Nigeria ranks as the world’s 7th most populous country. In country classification, it is a lower-middle-income economy (World Bank, 2018b).

Working to modernize the economy, Nigeria is implementing an Economic Recovery and Growth Plan (ERGP) for 2017–2020, with much-needed reforms of transport and power infrastructure, the business environment, health and education and pensions.

Nigeria’s economy is getting stronger, with annual GDP growth in the first quarter of 2018, at 1.9 per cent, a slight decline from 2.1 per cent in the previous period. Its gross domestic product (GDP) in 2017 was $375.8 billion, thanks to increased oil production, as growth slowed in the non-oil sectors. Inflation is down to 11.2 per cent, from 16.1 per cent in 2017, and the lowest since February 2016 primarily due to slow growth in the cost of consumer goods, utilities and housing among other items.

On the global competitiveness index, Nigeria ranks at 125 of 137 countries with an average score of 3.5, on a scale of 1–7 (best). It received the highest score of 5.1 for market size and GDP (PPPS5338.45) and high marks for macroeconomic environment, labour market efficiency, domestic business sophistication and goods market efficiency. And it scored low on infrastructure development, on higher education and training and on healthcare and primary education (World Economic Forum, 2015).
In 2015, the OECD did a policy review of Nigeria’s investment climate, covering all major policy areas and economic sectors. Some of the main areas were expanding markets through regional and multilateral engagements, investing in customs procedures and trade opportunities, formulating policy for energy and infrastructure investment, improving corporate governance and developing the financial sector.

The report also indicated collaboration with the Nigerian Federal Authorities to adopt and implement policy frameworks that affect investment and economic development. For example, on the effort to mobilize private investment in clean energy, infrastructure and other development projects, the OECD has developed key areas for policy makers in Nigeria to consider. They include:

- Establishing an investment policy that covers transparency, property protection and non-discrimination.
- Promoting investment through incentives, licensing, policy coherence and co-ordination within and across levels of government.
- Levelling the playing field by not discriminating in access to financing.
- Help to share the benefits of investment to the general population.
- Improving the policies for public governance (OECD, 2015a).

If Nigeria continues to seriously implement the recommended actions, it could see not only tremendous growth, but also economic development in smaller countries in the region following with their own policy frameworks for investment and development.

Two major pension reforms changed the Nigerian legacy Defined Benefits Government Plan under the Pension Reform Act of 2004 and Act of 2014. The growing unfunded pension liabilities in the legacy pay-as-you-go system made it unsustainable over the long term. Explosive population growth and generous pension benefits also contributed to the growth of unfunded liabilities. The reforms repealed all prior pension schemes including the two defined contribution plans, the National Provident Fund (NPF) and the Nigeria Social Insurance Trust Fund (NSITF), replacing them with a mandatory defined contribution plan for the private and public sectors.16

Under the new Nigerian pension plan, eligible employees must select and set up their own retirement savings account (RSA) with an approved pension fund administrators (PFA) and notify their employer to forward their pension contribution to which custodian. It is a mandatory contribution plan with 10 per cent from the employer and 8 per cent from the employee, for remittance to the custodian on behalf the employee.

The National Pension Commission (NPC or PenCom), with a 13-member board of trustees, is responsible for the overall regulatory management of the Fund. It manages hiring and supervision of the pension fund administrators, which manage the assets of participants, and the pension fund custodians (PFCs), which provide custody and administration of the assets.17
There are three existing pension accounts with balances. The Closed Pension Fund Administrators (CPFAs) and the Approved Existing Scheme (AES) have both closed to new hires since 2014. Enrolled participants in the CPFAs and AES were around 23,983 and 40,642 respectively. The Contributory Pension Scheme (CPS)/Retirement Savings Account (RSA) is the only plan currently open to new hires. Total membership was 7,348,028 in December 2016. This fund is expected to scale very quickly, given strong enforcement, young population growth and the inclusion of both public and private sector employees. Operationally, all new employees of the sponsored companies are required to join the CPS and to open RSAs with a PFA of their choice. Investment discretion lies with the PFAs, which are chosen by the participant (National Pension Commission, 2017). The PFAs operate largely under a rule-based, not the risk-based, asset allocation concept. PFA investment decisions are guided by regulations which specifies the required asset allocation sectors and weight limits.

According to the 2016 annual report, 10 of the PFAs earned rates of return ranging from 7.4 per cent to 9.7 per cent, or about 64 basis points (0.64 per cent) below the median industry performance of 10.34 per cent. Net asset value of the three pension funds based on unaudited reports was NGN 6.16 trillion (National Pension Commission, 2017).

In December 2016, assets were invested across nine approved asset classes that included federal Nigerian bonds, state government bonds, treasury bonds, corporate debt securities and money market instruments. Small allocations of less than 1 per cent each were made to opened/closed ended funds, real estate investment trusts, superannuation bonds, private equity, infrastructure, cash and other assets; 78 per cent of assets were invested in federal/state government of Nigeria bonds; 7 per cent in money market instruments (or cash); and 8 per cent in equities. With such heavy concentration in fixed income, portfolio diversification is limited, thus creating an exposure to portfolio concentration risk.

Public sentiment is calling for better diversification and more transparency of information from the pension funds. The PFAs are being urged to consider further diversification or to increase the current allocation to include other variable income assets, especially the nontraditional asset classes such as private equity, infrastructure and real estate through the allowable instruments. A broader diversification of asset allocations could be the catalyst for higher risk-adjusted returns. Perhaps implementing a hybrid of both rule-based and risk-based models closer to a 60/40 split could provide downside protection while gaining the upside benefits of a strong market economy.

Outside the pension funds, the Nigerian government is already investing in infrastructure, including it as one of the five priority areas. Under the Nigeria Economic Recovery and Growth Plan for 2017–2020, the objectives are to restore economic growth, build a globally competitive economy and invest in Nigerians by driving social inclusion, job creation, youth empowerment and improved human capital (ACIOE Associates, 2018).

Nigerian government state-owned enterprises are working with foreign investors to restore and build a high-speed train with multiple lines. Lack of funding has slowed some of the rail projects, but this is a good example of how pension fund assets could play a valuable role in financing a project that would link Nigeria and other West African countries by rail. Nigeria is considering privatization for some of the state-owned enterprises including refineries, to raise
funds for infrastructure and other sector projects. Development transport infrastructure is one of the key objectives.

Oil has provided 95 per cent of foreign exchange earnings and 80 per cent of federal revenues. In recent years, the government has been working with international organizations like the OECD to implement market reforms. A key goal is to diversify from the reliance on crude oil exports. The government is also encouraging the private sector to invest in infrastructure.

While the Nigerian pension funds authorities have approved investing in infrastructure, they may need additional encouragement and support to increase their current infrastructure allocations. The Federal Government of Nigeria, along with other neighbouring countries, are supportive of better roads, rail transportation, consistent power generation, clean water and other infrastructure projects. They know that such developments will lead to building better cities, increase trade between countries, create employment and improve living standards for the entire region. It may require education and dialogue with the regulatory bodies about the mutual benefits of using pension assets for infrastructure in Africa. With projected positive long-term returns, both the continent and the pension plan participants will benefit over the long term.

Whether internal or cross-border, the impediments to infrastructure investment include:

- **Longevity and liquidity concerns**: Long-term infrastructure investment may not be acceptable to the pension fund regulators due to high liquidity needs.

- **Uniform laws and cultural values**: Applying uniform laws, standards and policies to protect integrity and development of the cross-border infrastructure project is not easy.

- **Fragmentation and outstanding unfunded liabilities**: Managing fragmented pension schemes and improving allocation of benefits to the large section that falls in the low-income groups are difficult. Three to four different pension schemes are offered, with different levels of benefits. The outstanding unfunded pension liabilities of defined benefit plans are determined from actuarial valuation report to determine the health or funding status. This information is either not available or difficult to obtain.

- **Asset allocation and concentration concerns**: A pension plan may already have substantial allocation to infrastructure or other long-term investments, so there may be little liquidity to reallocate to infrastructure under the current regulations.

- **Fiduciary concerns**: Pension funds regulators and administrators are (as fiduciaries) aware of their duty as protector of the pension funds and are not likely to move quickly into increased investment in infrastructure. Moving the needle will require detailed planning and multiple meetings with the proper authorities.

- **Fund administration and transparency**: Promoting infrastructure investing requires greater transparency and more frequent communication about the investment process and the use of discretionary authority.
Nigeria has one primary pension fund with tremendous growth potential given the country’s population, and its potential for sustainable growth in just a few years. Transparency and member communication are critical for maintaining confidence in the pension scheme. The normal retirement age of 50 appears to be too early. And given that people are living longer, there is likely to be more pension reform ahead to make technical amendments to the plan documents, such as increasing the retirement age. While there is some movement in pension fund investment in infrastructure, considerable efforts on multiple fronts will be needed to substantially increase allocations.

**Egypt**

After years of internal political instability and geopolitical conflicts, Egypt has found a way to mobilize its people, natural resources and regional relationships into becoming Africa’s fastest growing economy, overtaking South Africa and becoming Africa’s second largest economy after Nigeria. The turnaround started in 2016, when Egyptian authorities went to the IMF for assistance and support with their economic reform program.  

The comprehensive program the IMF proposed included restoring macroeconomic stability, promoting inclusive economic growth (by developing small business opportunities), creating jobs, providing social and education programs (elderly and low-income family subsidies, free school meals and other social programs, as well as protecting vulnerable groups such as women in the workforce.) The reform program is also intended to create a favourable environment to attract and promote private sector expansions from within and outside of its borders. This included improving fiscal transparency of government agencies, cracking down on corruption and promoting fair competition for public procurement of government contracts and services.

Two other factors that leverage Egypt’s growth and development are its strategic location and its population growth.

Located in the north-eastern region of the African continent, Egypt falls within the Middle East and North Africa (MENA) region. The capital city, Cairo, is densely populated with nearly 20 per cent of the population. Egypt’s crucial location puts it in the middle of everything in a very strategic way. Located on the African continent, it has links in the northeast to the Middle East and southwest Asia by a land bridge formed by the Sinai Peninsula. Egypt is also a Mediterranean country bordered by the Gaza strip and Israel.

This strategic location, history and population has made Egypt a regional power and a major player in regional peace talks. Based on United Nations estimates, Egypt’s population is nearly 100 million, ranking it as the 14th most populous country in the world. In Africa, it is the 3rd most populous after Nigeria and Ethiopia. The median age in Egypt is around 25 years. The economy depends mainly on oil, natural gas, tourism and agriculture. Its gross domestic product (GDP) was $235 billion in 2017, and its GDP per capita around $3,470. Inflation stands at 13.5 per cent in 2018, a big decline from 30.8 per cent in 2017.

Egypt has a diverse and inclusive system of pension plans, with at least five plans for different group of workers. The three mandatory social insurance pension funds combined are
estimated to have around $5.5 billion and cover nearly 80 per cent of active workers.\textsuperscript{21} They include:

- The Government Employees Pension Fund, a pay-as-you-go defined benefit plan, providing retirement, death, disability and maternity benefits.

- The Pension Fund for military personnel, providing retirement, death, disability and maternity benefits.

- The Public and Private Enterprise Employees’ Pension Fund (PPEEPF), a mandatory plan for the employer and self-employed and an optional non-contributory scheme for individuals working abroad and for casual workers. Both plans provide retirement, death and disability benefits.

Two other pension plans are the Social Assistance Programs for special groups of the population and the voluntary occupational pension plan known as the Special Insurance Fund (SIF).\textsuperscript{22}

Pension reform was implemented in 2013, as regulators determined that the current pay-as-you-go pension plans were unsustainable. Population growth, longevity, growing pension liabilities and the need to make technical changes to the plan benefits were reasons for closing the pay-as-you-go pension plan to new hires and implementing a defined contribution plan. Other provisions of the reform were raising the normal retirement age from age 60 to age 65 by 2027 and increasing the contribution rate to 16.5 per cent for employees and 10 per cent for employers.

Two agencies administer the pension schemes. The National Organization of Social Insurance (NOSI) covers the Government Employees and Military Pension Plans. And the Public and Private Social Insurance Fund is responsible for the optional plan for Egyptians working abroad, part-time workers and agriculture workers as well as for the mandatory employer and self-employed plans.\textsuperscript{23}

Under the old defined-benefit plan, funding came from the government, member contributions and investment earnings. Funding for the SIF consists of allocations determined by the establishing pension fund company, member contributions, investment returns and any other sources decided by the fund’s board of directors.

Assets for the government plan are held with the National Investment Bank of Egypt. They are invested and allocated according to an approved set of guidelines that stipulate the following: at least 25 per cent invested in guaranteed government bonds; at least 60 per cent invested in real estate, securities listed on the stock market, and no more than 50 per cent in bank deposits with a fixed rate of return or any other investments with fixed return if approved by the Egyptian Insurance Supervisory Authority (IOPS, 2011a). Current details on the asset allocation or investments are difficult to obtain. So, investments are heavily weighted in government bonds, other fixed return securities and cash.
Whether internal or cross-border, the impediments to infrastructure investment include:

- **Longevity and liquidity concerns:** Long-term infrastructure investment may not be acceptable to the pension fund regulators due to high liquidity needs.

- **Uniform laws and cultural values:** Applying uniform laws, standards and policies to protect integrity and development of the cross-border infrastructure project is not easy.

- **Fragmentation and outstanding unfunded liabilities:** Managing fragmented pension schemes and improving allocation of benefits to the large section that falls in the low-income groups are difficult. Three to four different pension schemes are offered, with different levels of benefits. The outstanding unfunded pension liabilities of defined benefit plans are determined from actuarial valuation report to determine the health or funding status. This information is either not available or difficult to obtain.

- **Asset allocation and concentration concerns:** A pension plan may already have substantial allocation to infrastructure or other long-term investments, so there may be little liquidity to reallocate to infrastructure under the current regulations.

- **Fiduciary concerns:** Pension funds regulators and administrators are (as fiduciaries) aware of their duty as protector of the pension funds and are not likely to move quickly into increased investment in infrastructure. Moving the needle will require detailed planning and multiple meetings with the proper authorities.

- **Fund administration and transparency:** Promoting infrastructure investing requires greater transparency and more frequent communication about the investment process and the use of discretionary authority.

Challenges to the Egyptian pension fund will come from the daunting task of managing a fragmented pension scheme and improving the inefficiency of benefit distribution to the large share of the population that is impoverished or disabled. Strong governance policies and fair execution of pension benefits are imperative.

Infrastructure development is an excellent long-term investment option that supports economic growth while providing a consistent long-term income stream to pension holders. Regulators need to be encouraged to allocate a higher percentage of their assets to infrastructure development on the continent and to allow for cross-border pooling of assets. But fund administrators protect their assets, and it is unlikely that they are ready for cross-border infrastructure investment. That may require efforts to convince them about the long-term benefits and positive outcomes possible for the region.

**Francophone African countries**

Most francophone African countries have pension regulatory systems following French retirement systems and reforms over the past decades, mostly for civil servants and some private
sector employees. But they recently have been adopting voluntary and supplemental schemes. These retirement systems comprise three pillars:

- Mandatory public pensions financed on a pay-as-you-go basis (social security system).
- Mandatory occupational systems offering different schemes along occupations or sectors.
- Voluntary occupational and personal arrangements.

The mandatory public pension is an unfunded contributory pension based on redistributions of contributions from those working to those in retirement. The scheme is financed by a payroll tax (social security contributions) where employees and employers make contributions based on statutory rates.

The mandatory occupational pension is a supplemental defined contribution system that is mainly based on redistributions but also has elements of investment. The schemes in this group aim to supplement retirees’ public pension income with additional contributions usually from employers and employees. In general, surpluses are invested in capital markets.

The third pillar has the voluntary schemes that include collective or individual retirement savings plans. These plans enable employees (and employers in the case of company plans) to get tax credits when they contribute to these funds.

In most Francophone African countries, the supplemental and voluntary plans are administered by insurance companies (or other financial institutions) as financial products. Voluntary pension plans are usually insured using life insurance contracts. The insurance companies manage the assets as part of their general or segregated funds under management. With 14 Francophone African countries having fully integrated and harmonized insurance markets, they have an opportunity to pool some of these assets for long-term investments across the region.

The InterAfrican Insurance Markets Conference (La Conférence interafricaine des marchés d’assurance, or “CIMA”), located in Libreville (Gabon), was created in July 1992 by a treaty of 14 African countries. The treaty adopted a single insurance market and regulatory and supervisory framework across these countries. The 14 signatory countries are: Benin, Burkina, Cameroon, Central African Republic, Congo, Ivory Coast, Gabon, Guinea-Bissau, Equatorial Guinea, Mali, Niger, Senegal, Chad and Togo.

As the common regulator, CIMA has a single-market insurance approach with a harmonized set of rules governing investments and liquidity requirements. Although this has allowed various insurance companies to expand and operate in other countries, most of them generally invest in liquid assets such as bank notes, certificates of deposits and government securities. Although investments in commercial real estate have been modest, infrastructure remains an undeveloped asset class. The availability of long-term, inflation-indexed and predictable cash flows from infrastructure investments could be an attractive asset class for a group of institutional investors that can already pool assets and invest across 14 countries.
Lessons from Other Countries

Pension fund investments in infrastructure depend on the availability of investable infrastructure projects, the level of development of the financial system (especially capital markets), the availability of people with skills for investing in infrastructure, the size and structure of pension funds, the vehicles available for investing, the legal certainty of contract law and the availability of various forms of risk mitigation. In addition, pension fund regulation and supervision have an impact on how and how much these institutions invest in infrastructure (Alonso, Arellano and Tuesta, 2015). Around the world countries are making regulatory changes that have an impact on the ability of pension funds to invest in infrastructure or that are specifically designed to encourage increased pension fund (and insurance company) investments in infrastructure. This section discusses some of these developments, with selected country examples.

Rule-based to risk-based investment regulations

Pension investment regulations are generally of two categories—rule-based (sometimes referred to as compliance-based) or risk-based. The former is based on setting limits on the amount of investment by asset class, the amount of exposure to single entities, the amount of domestic and foreign assets, the currency composition of assets and so on. The latter focuses on the evaluation of the risks of the overall investment portfolio and its expected returns relative to some benchmark. Risk-based supervision for pension funds allows supervisory authorities to use their scarce resources evaluating the main risks posed to pension fund members—as opposed to rule or compliance-based supervision which involves rigorously checking compliance with a set of rules, irrespective of their relative importance to meeting the contributor’s objective (Randle and Rudolph, 2014; Brunner, Hinz and Rocha, 2008).

There has been a gradual shift in many countries from rule-based to risk-based pension investment regulation and supervision. The latter is viewed today as best practice in that it:

- Allows a balancing of risk and returns that can potentially increase investment returns.
- Lowers supervisory costs and makes supervision more effective.
- Provides flexibility to address differing needs within the same supervisory system.
- Aligns pension investment regulations and supervision with that of other financial (banks, insurance companies).

Many issues must be addressed as regulators move from rule-based to risk-based investment regulations, and the issues are different for defined contribution, defined benefit and hybrid systems. But considerable experience has been gained from efforts to make this transition in various countries (Meenakumari, 2008; IOPS, 2007).

Infrastructure is often classified as a nontraditional or alternative asset. Such assets are generally considered to be riskier than traditional ones. Thus they may require special regulation and supervision. A risk-based supervisory approach to nontraditional assets is recommended by
the OECD/IOPS Good Practices on Pension Funds' Use of Alternative Instruments and Derivatives (IOPS, 2011b).

As funds increase their investments in nontraditional assets, it is expected that supervisors will develop a supervisory approach dedicated to these types of investment.

Guidelines for nontraditional investments can help pension funds better assess such factors as counterparty risk, contract terms or valuations—and perform due diligence and achieve appropriate diversification.

Due to complexity of infrastructure and other nontraditional investments by pension funds, supervision may need to rely more on qualitative judgements rather than on compliance with quantitative indicators. This should be true whether the pension supervisor operates under a rule-based or risk-based supervisory framework. However, a risk-based supervision regime might enable pension funds to invest in a much wider domain of financial instruments. In this way, risk-based systems should be more conducive to investing in nontraditional assets.

In the move from a rule-based to risk-based regulatory system, the responsibilities of investment managers and pension fund trustees are likely to be an issue. A risk-based system places a greater burden on the judgements by these persons. This calls for clarity in the standards of performance to which they are held responsible.

In the United States, the Employee Retirement Income Security Act of 1974 (ERISA) is a federal law that sets minimum standards for most voluntarily established pension and health plans in private industry to protect individuals in these plans. ERISA abandoned the use of prescribed investment categories and conferred broad managerial discretion on trustees, within the bounds of overarching fiduciary obligations. Most U.S. public pension plans have adopted similar standards. Under ERISA, pension plan fiduciaries must act prudently, diversifying their investments to minimize the risk of large losses, and must act for the exclusive benefit of plan participants and beneficiaries.

In addition to removing all categoric restrictions on types of investment, in recent years U.S. pension investment regulations have tended to:

- Focus on the total portfolio, rather than individual investments.
- Define the fiduciary's central concern as the trade-off between risk and return.
- Prescribe diversification as integral to prudent investing.
- Reverse the nondelegation rule with respect to investment and management functions.
- Use the "prudent investor" standard rather than "prudent person" standard in recognition of the increased complexity of investment decision making (Hawley et al., 2011).
While the exact formulation of fiduciary duty varies between jurisdictions, the main concepts are relatively consistent. Fiduciaries are generally required to discharge their duties:

- Solely in the interest of participants and beneficiaries.
- For the exclusive purpose of providing benefits.
- Impartially, taking into consideration differing interests of various participant and beneficiary groups.
- With the care, skill and prudence exercised by similar fiduciaries, including diversifying investments.
- Incurring only costs that are appropriate and reasonable.
- In accordance with governing law and documents (Hawley et al., 2011).

The duty of prudence has in the past encouraged pension fiduciaries to adhere to practices followed by similar institutional investors. However, this has led to a focus on short-term investment returns and a “herding” behaviour among funds, which can cause market volatility and undermine sustainable wealth creation. Regulators have recognized this and now encourage trustees to measure performance on a risk-adjusted basis rather than on peer comparisons using relative performance metrics. Fiduciaries must ensure that their decision-making processes balance capital allocations between near-term needs and future wealth creation. This entails active consideration of a range of factors beyond narrow financial criteria.

**Infrastructure as an asset class**

One way that regulators have attempted to stimulate institutional investment in infrastructure has been to remove or lower barriers to such investments. For countries employing risk-based investment guidance, this has entailed scrutiny of the measurement of risk. In a few countries using rule-based guidance, a special allocation to infrastructure assets (sometimes combined with other “real assets” or “alternative” assets) has been delimited. However, listed infrastructure debt (specifically project, utility or municipal revenue bonds) would fall under the broader allocation for listed (and sometimes rated) securities.

The European Union has been at the forefront in the effort to mobilize institutional investors, especially their pension funds and insurance companies, to invest in infrastructure. There have been several well-organized efforts to mobilize financing for long-term investments from institutional investors through suitable regulatory frameworks and appropriate incentives.

In September 2016 the European Commission, after an extended period of consultation and discussion, modified its regulatory framework for insurance companies (Solvency II) to establish a new asset class for infrastructure (EIOPA 2015a; EIOPA 2015b). It then proposed a definition of infrastructure investments that could qualify for a lower prudential-risk charge. It decided that this asset class should not be limited to specific sectors or physical structures but include all systems and networks that provide and support essential public services. To ensure that the infrastructure asset class is effectively delimited to infrastructure investments, the regulation
specifies that the qualifying infrastructure assets should be owned, financed, developed or operated by an infrastructure project entity that does not perform any other function, where the primary source of payments to debt providers and equity investors is the income generated by the assets being financed and that the infrastructure project entity should provide a contractual framework that ensures a high degree of protection to its investors. In other words, they limited the asset class to public infrastructure using project financing.

They also specified that the new infrastructure asset class should be framed by criteria that ensure that infrastructure investments exhibit a sound risk profile with respect to their stress resilience, predictability of cash flows and protection provided by the contractual framework.\textsuperscript{31}

To ensure that a prudentially sound system is in place and that infrastructure assets are appropriate to benefit from a reduction in capital requirements (that they are safer and less volatile than comparable corporate investments), the Commission listed the following as criteria that must be met for an asset to qualify for inclusion in the new asset class:

- The infrastructure project entity should provide a contractual framework that ensures a high degree of protection to its investors, including provisions against losses from the termination of the project by the party that has agreed to purchase goods and services, which could be triggered by the termination of a purchase agreement. Sufficient financial arrangements should be in place to cover the contingency funding and working capital requirements.

- To reduce the risk to lenders, a sufficient degree of control over the infrastructure project entity should be established, including security in assets and equity, as well as limiting the use of cash flows and activities.

- Where the calibration for investments in bonds and loans is reduced based on the assumption that most infrastructure investments are held to maturity, the insurance or reinsurance undertaking should be able to demonstrate that it is able to do so.

- To incentivize infrastructure investments with high recovery rates, the new asset class should be limited to investment grade debt, and only to senior debt where no external assessment is available. Nevertheless, the inclusion of infrastructure equity in this new asset class should not depend on the existence or the level of any external assessment of the infrastructure entity.

- Where no external assessment by a nominated external credit assessment institution (ECAI) for an investment in qualifying infrastructure is available, additional criteria should apply in order to ensure that the investment is subject to limited risk. Those criteria should provide for professional management of the project in its construction phase, ensure adequate mitigation of construction risk, limit operating and refinancing risk and prohibit the project from entering into speculative derivative positions.
Where no external assessment by a nominated ECAI for an investment in qualifying infrastructure is available, it should be ensured that the infrastructure project is subject to a stable political environment.

Projects based on innovative technology or design should be eligible to fall within the scope of this new asset class. To ensure that projects based on innovations are safe, insurers should carry out appropriate due diligence to verify that technology is tested. This can include prototype testing, pilot testing and other forms of testing to demonstrate that the project has sound technology and design.

The new regulations mean that insurers investing in such projects will need to hold a lower level of capital against their investments.32

Subsequently, again at the request of the European Commission, the EIOPA undertook a second round of discussions on infrastructure corporates (EIOPA, 2016a; EIOPA, 2016b). The EIOPA then recommended an extension of the infrastructure asset class, so that infrastructure corporates that meet a detailed set of predetermined tests, can also be included. In September 2017 the EU Commission amended the Delegated Regulation (EU) 2015/35 concerning the calculation of regulatory capital requirements for infrastructure corporates (CMS, 2017). The amended regulation introduced the concept of “qualifying infrastructure corporate investments”—infrastructure entities that have a business object beyond a specific project. With this new category, the lower capital charges for infrastructure investments were extended from project financing to corporate financing. This more favourable treatment was extended to corporates for which a substantial majority of the revenues comes from owning, financing, developing or operating infrastructure assets. To assess such sources of revenues, the most recent financial year (where available) or a financing proposal (such as a bond prospectus or financial projections in a loan application) should be used. Given that the EU viewed the business risks as higher for infrastructure corporates than for (pure) infrastructure projects, but lower than for non-infrastructure entities or projects, the capital charge for investing via either equity or debt in infrastructure corporates was assigned a capital charge between the two.33

Additional work is needed on infrastructure as an asset class, both in identifying the forms and vehicles for investing in infrastructure that truly exhibit the properties that institutional investors are seeking—and in establishing the risks of each of these forms and vehicles. Fortunately, such work is under way at several institutions (OECD, 2018b; World Bank, 2018c; EDHEC, 2018).

Infrastructure and sustainable development

Governments around the world are also looking at the large and growing assets of funded pensions (and other institutional investors) as a financial resource to finance sustainable development, renewable energy, impact investments, climate mitigation and so on.34 To facilitate this, investment regulations are being changed to allow pension fund fiduciaries to consider the wider and long-term impact of their investments.

There is a long history of pension fund assets being channelled into basic infrastructure to support an economy’s overall development. One of the early and successful examples is Finland.
Its first national pension system, introduced in 1937, was fully funded and accumulated in individual accounts was. Initially the funds were used to build the country’s electric power system. After World War II, the funds were used to industrialize the country. And later they were partly invested in the production of housing. These investments helped Finland to transform itself from a largely agrarian society and one of the poorest countries in Europe in the 1930s to an industrial and urban society that today has a higher GDP per capital than the U.K. or France (Kangas, 2006).

The view that pension assets should provide financing for the domestic economy is codified in the restrictions that are still in place in many countries on investing in foreign assets, thus keeping the funds at home for investing domestically.

Today there is a movement to encourage investment in “sustainable” development—not just in development—both domestically and globally. This has required a re-examination of the guidelines that investment managers most follow—away from looking only at factors that have a direct and short-term impact on financial returns and risk and toward incorporating factors that have an indirect and long-term impact.

One of the countries that has moved most aggressively in this way is the Netherlands. Pension funds there have a statutory obligation to publicly describe how they take into account the environment, climate and human and social relations when investing. They are not obliged to pursue an environmental, social, and governance-sensitive investment policy, but if they don’t, they are required to explain why they choose not to do so. And if they do pursue such a policy, it must be incorporated into their business processes, their risk management processes and their management information systems (IOPS, 2017).

In the United States, the Department of Labor (DOL), which enforces ERISA, has provided guidance for interpreting the law. Over the years, DOL guidance on whether fund fiduciaries could consider factors other than those having a direct impact on the economic interests of the plan have vacillated. However, on October 22, 2015, DOL announced new guidance for pension funds that will enable fiduciaries to consider ESG concerns in addition to financial return when investing (OECD, 2017b).

In the last few years, the European Commission has sought to mobilize pension fund and other private capital for green and sustainable investments to enable the transition to a low-carbon economy. The Commission established a high-level expert group on sustainable finance in 2016. As part of this effort, it sought public consultation on institutional investors and asset managers' duties regarding sustainability. The responses indicate broad support for the idea that taking ESG factors into account increases the flow of capital towards a more sustainable economy, which is in the interest of the ultimate beneficiaries of institutional investors. The Group published an interim report in July 2017 and its final report in January 2018 (HLEG, 2017; HLEG, 2018).

The most recent development in this area is a push for the European Commission to bring forward legislation that embeds this duty in law and provides clarity for investors on their duties. Such legislation might require the integration and disclosure of sustainability factors in the investment decision-making process of European financial institutions. This could remove the widely held misconception that an investor’s duty is to “maximize returns” and thus cannot consider ESG or ethical factors in investment decisions (European Commission, 2018a).
For such legislation to be adopted and effectively implemented, however, there is still much work to be done to clarify how ESG factors can be made part of the investment process and to determine the most appropriate reporting requirements, especially given the potentially high cost of disclosure. In the recent European Commission consultation, about two-thirds of the respondents stated that the information or risk metrics currently available do not enable the relevant investment entities to adequately perform sustainability risk assessments.37

Perhaps the most fundamental problem to be addressed is how to reorient investment decision making away from its current focus on short-term performance to focus on long-term performance in line with sustainable development. As stated in the HLEG final report, the mismatch in time horizons is deeply embedded in today’s financial system (HLEG, 2018).

At one end of the investment chain, the long-term horizon of end-beneficiaries (such as pension funds, household savers and sovereign wealth funds) is generally not reflected by financial intermediaries, due to principal-agent issues and misaligned performance metrics and incentives, including the lack of informed consent. At the other end of the investment chain, the needs of businesses for patient capital are undermined by an excessive focus on short-term price performance, particularly on listed equity and bond markets.

A shift does appear to be occurring in the perception of asset owners about the costs and benefits of including ESG considerations in their investment decisions. In the past, owners were concerned that this could reduce their investment returns. According to a recent global survey of asset owners, the prevailing view today is that ESG integration into investment decisions will increase their returns and reduce their risks (Morgan Stanley, 2018). And infrastructure and other real assets are seen as asset classes where ESG integration can have a significant impact on investment decisions.

Delegating infrastructure investment management

As the range of assets available for pension funds to invest in has grown beyond publicly traded government and corporate bonds and corporate stocks, the skills needed for investing have increased. And many of the assets now available to pension funds are not traded on public markets. Infrastructure investments, especially equity investments, are often carried out as private market transactions. Such transactions—having little or no public regulation, and while offering potentially high returns—can entail high risks. Most pension funds have recognized that they do not have the skills to invest in these markets successfully on their own. Thus, many have turned to private market funds (PMFs) to help them invest in these “alternative” investments. Outsourcing investment management is allowed by pension regulators in most countries, is mandatory in a few and prohibited in just a handful. But the use of outsourcing depends on the availability of PMFs and the willingness and ability of pension funds to use their services.

PMFs are entities with the skills and knowledge to invest specific private market segments with greater safety and an expectation of greater returns than the typical investor. But PMF objectives are not fully in line with those of their investors. For example, PMFs may exit successful investments quickly and hold on to losers to window-dress their track record and improve their compensation. The cost of these misaligned objectives is referred to as “agency costs”. In some countries market regulations attempt to mitigate such costs in several ways.
First, investing in PMFs is usually restricted to qualified investors. Being qualified does not imply a minimal amount of knowledge, but instead requires a minimum amount of money. It is implicitly assumed that with sufficient capital, the investor can pay for experts, including lawyers, which enables the investor to solve any possible conflicts of interest via well-written contracts. Also, sufficient capital allows the investor to monitor and conduct extensive due diligence on fund managers to assess trustworthiness and the magnitude of potential conflicts of interests.

Second, investment occurs in rounds. If a manager does not return enough money, or is seen as conflicted, investors do not invest in the follow-on fund, and the manager is driven out of business. However, it is difficult to obtain an accurate measure of PMF past performance, let alone a measure of expected future alpha (Phalippou, 2018).

One of the limitations of the use of PMF for investing in infrastructure is that infrastructure assets generally have a long life (twenty or more years) while PMFs have typically offered only seven- to ten-year fixed life investment vehicles. Thus, one of the key benefits to pension funds of investing in infrastructure—the ability to match long-term assets and liabilities—is greatly diminished by the need for PMFs to sell assets generating stable long-term revenue in order to close out the fund. Long-term investors are thus faced with the task of reinvesting the cash paid out by the PMF when it could be more profitable for the pension fund to retain the assets.

PMFs dedicated to investing in infrastructure first appeared in the 1990s, initially mostly in Australia. The government there was attempting to lower the country’s heavy public debt burden and turned to the private sector to help finance public infrastructure projects. At the same time, compulsory national pension insurance funds were accumulating assets rapidly. The stable long-term returns that the infrastructure funds promised proved quite attractive to pension fund investors.

Over time most other developed market economies have followed a similar path. And today PMFs are widely used by pension funds in Europe and the United States. In the meantime, Australian pension funds, while continuing to outsource their infrastructure investments, are testing more aligned investment vehicles (Inderst and Della Croce 2013).

Infrastructure funds are usually structured as limited partnerships, where the managers of the firms are general partners (GPs), and investors are limited partners (LPs). Although commonly classified as private equity (PE) funds, they can invest in either (or both) infrastructure equity or debt instruments. The GP gathers commitments from investors, with cash called in as investments are made. The GP acquires assets over the first few years of the fund’s life and then divests the assets in the last few years of the fund’s life. The GP is compensated through an annual management fee (typically 2 per cent of fund assets), deal fees and monitoring fees, as well as the so-called “carried interest fee” (often 20 per cent of net investment gains). Such fee structures can easily lead to total annual investment management costs in the range of 4 to 5 per cent of assets.

Carried interest is one of the means to help align the interests of GPs and LPs. GPs earn carried interest only if they exceed a specified minimum rate of profit for the fund (the “hurdle rate”), which can vary by fund but is often around 8 per cent. Carried interest is the primary source
of profit for the GP and differs from management fees, which should only cover the cost of running the fund.

Another way to align interests between the GP and LPs is having the GP invest its own money in the funds. In some funds the GP investments are significant.

LPs also use management contract covenants to restrict how GPs invest. For example, there is often a limit on investments in “greenfield” or “primary stage” projects, which entail taking on construction risk. Institutional investors have shown an aversion to taking construction risk and having to deal with the management issues that often arise during construction and initial project operation. So, they have invested primarily in “brownfield” or “secondary stay” projects that have a successful operating record.\footnote{Insourcing infrastructure investment management}

Co-investments and separate accounts provide additional opportunities for investing with PMFs.

There are currently 534 active infrastructure fund managers worldwide. Sixty-nine unlisted infrastructure funds reached a final close in 2017, securing an aggregate $65 billion in commitments from investors. Unlisted infrastructure assets under management reached $418 billion in June 2017 (Preqin, 2018). There are about two dozen unlisted Africa-focused infrastructure funds (Preqin, 2016).

**Insourcing infrastructure investment management**

Given the severe information asymmetries between the GP and LPs in PMFs, the short life-span of most infrastructure PMFs and the high PMFs fees, some pension funds have tried alternative means for investing in infrastructure (Eicher, 2013).

One means of overcoming the agency problems in using outside asset managers is vertical integration—by internalising investment management. Some of the first large pension funds to do this aggressively were the Canada Pension Plan Investment Board, Caisse de dépôt et de placement du Québec and Ontario Teachers’ Pension Plan. Soon other large Canadian pension funds followed suit, so the approach has come to be known as the Canadian model (Eicher, 2016).

Canadian pension funds are among the most active investors in infrastructure, with some investors having portfolio allocations to equity infrastructure of 10 per cent or more. They are able not only to co-invest but also to take leading roles in consortia, competing with other funds and financial sponsors when bidding for projects. This also means that these investors have in-house resources to produce their own research and risk assessment of infrastructure projects without depending on external consultants.

For the largest investors in Canada, infrastructure is treated as a separate asset and is part of the allocation to inflation-sensitive investments, which tend to correlate closely with changes in inflation acting as a hedge against increases in the cost of future pension benefits (OECD and Wyman, 2011).

Canadian funds are distinctive in their ability to invest directly in alternative asset classes such as infrastructure, real estate and private equity. Yet this ability to invest directly requires (1)
the right sponsoring organizations and membership base to provide sufficient scale; (2) the right governance structure to oversee a complex investment program; (3) the organizational culture and compensation model to attract a talented in-house investment team; and (4) the long-term patient capital that is facilitated by the stable, defined-benefit nature of the pension plan designs that Canadian pension managers are charged with administering (World Bank, 2018d).

The main limitation of the Canadian model for most pension funds is the difficulty of hiring qualified investment professionals. As a result, most adopters of the Canadian model invest substantially with PMFs, parallel to their direct investment program. Since investing in greenfield projects require the most due diligence and project management expertise, this is often left to PMFs. Investments in operating infrastructure assets are more easily evaluated and managed by pension fund staff and generally require less specific expertise about infrastructure (which provides additional flexibility for staffing).

The popularity of the Canadian model has led some PMFs to offer “long-life” or “permanent-capital” funds alongside traditional funds. By doing so, PMFs offer a direct alternative to the holding assets internally over long horizons. The main benefit of such funds is better alignment of investment horizons. The main drawback is that the pension fund still needs to enter complex and incomplete contracts, and thus face significant agency costs (INSEAD, 2018).

**Consolidating pension funds**

In most countries, the system of pension funds has developed over the years and covered different groups of workers, typically starting with public sector employees and later for private sector employees. Individual funds have usually been established by individual public and private sector employers. As a result, in many countries there are thousands of individual pension funds, some covering many beneficiaries and have accumulated a large amount of investable assets, along with a large number with few beneficiaries and limited assets. In recent years, there have been efforts in several countries to consolidate pension funds into a smaller number of funds.

Proponents of consolidation say the benefits include:

- Lower costs (due to economies of scale), which translate into more assets available to support payments to members and maintain plan sustainability over the long term.

- Better governance and improved oversight by regulatory authorities.

- Better capabilities in plan management.

- A broader investment universe and greater capacity to directly invest in alternative assets.

This last point is significant when investing in infrastructure. Without sufficient scale, pension funds find it difficult to invest in infrastructure and other long-term alternative assets. Often the minimum investment is greater than they can handle. And even if investment management is typically outsourced to external providers, their staff are too small to provide proper oversight. (Oversight of these outsourced activities is essential, given the agency issues associated with outsourcing in general, and the complex contracting issues involved.)
The global move to pension consolidation has been led by the Netherlands and Australia.43

The key feature in the Netherlands has been regulator activity—the regulator has been active in writing to pension funds that have remained out of consolidation vehicles, noting that the fund may be too small to fulfil the governance requirements for running a pension fund. This drove many small and mid-sized pension schemes into the arms of industry-wide pension schemes and insurance companies. The implied threat worked, and the result was a significant increase in the amount of consolidation in the Netherlands. The number of pension funds dropped to 268 in 2017 from 1,060 in 1997, and the concentration is likely to continue.

In Australia, the market was allowed to dictate how many pension funds there were: competition reduced the number from 7,000 funds in 2006 to just over 2,000 in 2016 (Willis Towers Watson, 2016).

There has been considerable research on the impact of consolidation of pension funds in various countries. In general, this research supports the view that consolidation has proven beneficial (Matkin and Chen, 2015; Pension Policy Institute, 2017). (Denmark, the Netherlands and Australia—the top three countries in the Melbourne Mercer Global Pension index 2017, which measures sustainability of retirement schemes—all have a relatively small number of large pension funds.) It also appears that investment consolidation brings about the greatest benefits, significantly more than savings on administrative functions.44 While increased scale may not guarantee improved investment performance, significant international evidence shows that it can reduce investment costs and improve governance for pension funds (Heenk and Smart 2018).

**Pooling assets for infrastructure investment**

One alternative to consolidating pension funds is pooling the investable assets by multiple asset owners into investment platforms governed by the pension funds (OECD, 2015b).

In November 2011, the U.K. government signed a memorandum of understanding with U.K. pension funds to work together to develop an investment facility, the Pension Infrastructure Platform (PiP), to help U.K. pension funds invest more in U.K. infrastructure assets. The scheme is entirely independent of government control—the PiP is being developed by pension funds for pension funds. The PiP is the first of its kind in the U.K.

U.K. pension funds have historically invested relatively small amounts in infrastructure assets. This is surprising since the U.K. has been the world leader in using public–private partnerships (PPPs) to bring the private sector into the construction, maintenance, and financing of public infrastructure projects. However, most U.K. pension funds lack the capacity and in-house expertise to invest directly and assess risks. (U.K. pension funds invest less than 4 per cent of their total assets in infrastructure—lower than overseas pension funds in Australia and Canada, where an estimated 8–15 per cent of assets are invested in infrastructure.) PiP was established under the rationale that pension funds would be better owners of public infrastructure assets than other types of investors, because the pension funds need steady cash returns over 20–30 years to pay pensions and have no incentive to turn a quick profit and sell the assets. PPPs have been politically controversial in the U.K., in large part because investors have received substantial profits from public service projects (especially hospitals). Politicians are keen to involve pension funds as
investors because profits are then paid to U.K. retirees, which can help defuse criticism (Financial News, 2017).

PiP has so far secured £750 million from six pension funds. It is open to all U.K. pension schemes, and pension scheme can join on the same terms as our founding investors. Annual fees for the fund, which is targeting annualized returns of 5 per cent above inflation as measured by the retail price index, are limited to a maximum of 50 basis points per annum. PiP aims to invest initially in ‘core’ infrastructure projects that are free of construction risk and not subject to usage risk. This is expected to include regulated utilities and non-toll roads. It took several years to get organized and begin investing, then in 2017 PiP acquired stakes in six solar energy parks, ten social infrastructure projects and a stake in the Isle of Wight ferry company. PiP has also arranged or facilitated around £1 billion’s worth of direct investments by its members—by putting pension funds in touch with sellers of such assets.

Pension funds have tried other ways to achieve the benefits of asset pooling, such as co-investment platforms (Monk and Sharma, 2015). A good example is CKD Infraestructura México, an investment platform launched in late 2015. Caisse de Dépôt et Placement du Québec (CDPQ) joined a consortium of five Mexican investors including several of the largest pension funds in Mexico. CDPQ holds a 51 per cent interest in the co-investment vehicle and is the controlling manager.

CDPQ is a Canadian long-term asset manager for Canadian pension funds and insurance companies with around Can$250 billion in assets. A specific investment team has been appointed to manage the Mexican investment platform, but it will also draw from the expertise of infrastructure investment teams from CDPQ. This platform will allow the Mexican investors to benefit and learn from CDPQ’s infrastructure investing expertise. It will give CDPQ local intelligence and deal access and probably some political risk protection.

The platform plans to invest up to Mex$35.1 billion (equivalent to US$2 billion) in Mexican energy and transportation projects and has an investment horizon of 50 years. Planned investments will be in equity in brownfield projects with stable cash flows in local currency. This reflects CDPQ’s willingness to assume exchange rate risks and manage them on a portfolio basis, which is facilitated by (1) the indexation to inflation of the projects revenues, (2) the long-term horizon of investments and (3) the currency diversification of CDPQ’s portfolio at a global level.

Investments are planned as joint ventures with an infrastructure operator that has “skin-in-the-game” and is responsible for managing the infrastructure assets. The first investment, in a company with four operating toll roads, has already taken place.

This platform has two important features: it facilitates knowledge transfer from a highly specialized international asset manager to less experienced pension funds in Mexico, and the participating institutions have good alignment of interests regarding fees and investment horizons.

Capital market financing of infrastructure

The greater demand for infrastructure project financing by institutional investors has highlighted the need for capital market structures and regulations that facilitate (or at least do not
The use of capital market instruments, especially unlisted infrastructure project bonds.
While many banks have the skills to finance projects using loans, most pension funds do not. Pension funds are more skilled at investing in bonds, and these capital market instruments are better suited to their needs than loans, given their greater transparency, regulation, liquidity and standard terms.

Infrastructure project bonds have funded infrastructure projects in Europe, Canada, the United States and Latin America. The increased use of PPPs to mobilize private financing for public infrastructure projects has stimulated the use of project bonds. Investing in project bonds by pension funds was facilitated initially by the availability of full financial guarantees from specialized private insurance companies (so-called “monolines”) which lifted the credit rating of the bonds and limited the need for pension funds to undertake due diligence on each project or be involved in monitoring and managing projects. Such guarantees are no longer widely available, but in the EU a substitute for full guarantees has been the use of “first loss” guarantees by the European Investment Bank. These have been used successfully for select major public projects (European PPP Expertise Centre, 2010; Rossi, Stepic and Alerassool, 2015).

Companies or vehicles that want to raise funding in the capital markets have two distinct avenues: a public offering or a private offering, each subject to different regulatory treatment. The former carries the obligation to provide information to investors at the moment of investment and on an ongoing basis. In tandem, the intervention of the regulator is required in the form of an ex-ante authorization of the offering materials along with ongoing monitoring, both aimed at ensuring that issuers provide complete, accurate and timely information to investors. In a private offering, issuers are not subject to disclosure requirements or to the authorization of the issuance by the securities regulator or its ongoing monitoring. In this case, any disclosure is determined by the investors’ requirements. Finally, regulators have enforcement powers related to public market transactions; private market transactions rely on contractual enforcement.

The private placement market is the capital market of choice for infrastructure bond issuance. (Infrastructure funds are also generally placed under a private offering regime.) This is particularly the case for projects during their initial financing, when the construction phase has not been completed. Project sponsors generally find publicly offered project bonds unattractive for anything other than very large credits (over $200 million) in the post-construction stage (when projects are refinanced to replace bank loans and to allow project sponsors to take out some of the equity they have invested in the project). Issuers will choose to offer bonds in a public offering only if the benefits of doing so outweigh the extra time and cost. The primary benefit of public offerings is possible lowering of the borrowing cost, which can be achieved by increasing competition among a broader group of prospective investors. Project sponsors also have concerns about the confidentiality of certain project information if they use public offerings (World Bank, 2017).

In many EMDEs (emerging markets and developing economies), the market for private placements is less well developed than public capital markets. Since private capital markets arise out of market forces rather than through government regulations, the lack of such markets reflects government regulations that block its development, the lack of sufficient development of the financial market in general, or the failure of rule-of-law to provide confidence in the contractual relationships that private markets depend upon. Countries wishing to develop private markets as a
means for encouraging infrastructure financing need to work to remove any regulatory barriers to the use of private markets and take measures to strengthen the enforcement of commercial contracts.

In some countries with private capital markets, pension funds are prohibited from investing in privately placed securities. This is a result either of deficiencies in the general framework for securities regulation or of restrictions directly imposed on the pension funds. Yet project sponsors are more likely to use the capital markets if such an avenue is available.48 For this reason, there has been a trend for pension regulators and securities regulators to work together to allow pension funds greater flexibility in their use of private placements.

**Incentivising investment in infrastructure**

Simply removing regulatory and structural barriers that can inhibit pension funds from investing in infrastructure may not be sufficient to draw pension funds into infrastructure financing. Pension funds are, and should be, cautious about taking credit risk. Infrastructure financing is fraught with credit risks, and given the complexity of most infrastructure projects, it can difficult to identify and assess all the risks. Some successful operating projects may be viewed as fitting within the risk profile of pension funds, but it is extremely rare that greenfield projects do. Yet the greatest demand for project financing is for greenfield projects.

Two distinct approaches can be taken to deal with this problem. First, governments can help mitigate the risk of investing in greenfield projects by providing partial credit and risk guarantees and insurance, backing up counterparties in off-take agreements, and providing availability payments to projects (European PPP Expertise Centre, 2011). All of these can reduce the credit risk of greenfield project financing to a level sufficient to attract institutional investors. One of the key incentives that the European Union has taken is to provide funding to develop a pipeline of well-structured and credit-worthy projects. Another has been to provide first-loss protection for project bonds. In both efforts, the EU’s major development finance bank, the European Investment Bank, has played a leading role.49 These efforts have proven quite effective in bringing pension funds and insurance companies into financing key public infrastructure projects in the EU.

Second, governments can make it easier for project sponsors to bring in institutional investors once projects are operating successfully (Bond 2018). Most construction financing for projects comes in the form of equity, sponsor loans or bank loans. When construction is completed and projects are operating successfully, the project sponsors can refinance their outstanding construction period loans and pay off some of the equity. They can do this either by restructuring the terms of their existing debt (usually working with the same creditors who provided the construction financing—which are usually commercial banks, multilateral development banks and development finance institutions) or seek to obtain new debt (either via loans or bonds) which can be used to pay off the construction period loans. The latter approach offers new investors an opportunity to step in.

Since institutional investors may be willing to provide long-term debt at this stage of the project, sometimes at lower costs than bank loans, they can be an attractive source of private financing for the project sponsors. However, for this to be of most benefit to project sponsors, they
need to prepare for the refinancing at initial financial close of the project (when the construction financing is arranged). Capital market refinancing of bank loans via project bond issues has often been discouraged by the disincentives of breaking the swaps associated with the initial bank financings (Standard & Poor’s, 2015). And project sponsor don’t like to take “refinancing risk,” the risk, when the time comes for refinancing, that market conditions may make this difficult and costly even if the project is operating as planned.

Governments could help overcome these problems by offering a contingent refinancing facility to project sponsors. This will provide a guarantee, at the initial financial closing, that construction period bank loans will be repaid with longer term financing if the project is completed successfully. This will reduce refinancing risk for projects that need longer term financing than can be provided by bank loans alone and allow project sponsors to safely use “mini-perm” construction loans. It would also facilitate the refinancing of bank loans by institutional investors. The World Bank and several governments, including Mexico and Brazil, are considering setting up such facilities (GIF 2017a; GIF, 2017b).

Multilateral and national development banks are recognising that they can leverage their infrastructure financing capabilities if they focus on the higher risk phases of project development while mobilising private sector financing for successfully operating projects. A recent Brookings study has made a persuasive case for this:

Considering the differences in tolerance for risks of different investors, their engagement should come at a different stage of the infrastructure cycle. Clearly, development banks should engage at the earlier stage the infrastructure development cycle while institutional investors will come at the latter stage. Also, it should be noted that once development banks engagement into the greenfield space gathers pace in Africa, institutional investors can then come into the picture and support brownfield investment, which in turn would free up development banks to do more greenfield, and hence the virtuous cycle (Brookings, 2016).

Refinancing the portfolios of infrastructure funds can also provide opportunities for pension funds. An innovative “blended finance” approach of this type has recently been launched. Climate Investor One, first proposed by the Netherlands Development Finance Company FMO, combines three investment facilities to finance projects in the wind, solar and hydro sectors in developing countries. It supports these projects through several stages of a projects’ life, at each stage bringing in new sources of financing. An initial fund provides technical, environmental and social due diligence support at the project development stage. A second stage fund then finances a large part of construction costs with equity, removing the need for more costly and difficult-to-raise debt finance. Finally, once projects are operating successfully, new capital—primarily debt—will be raised through a pooled refinance fund that will be marketed to institutional investors (Global Innovation Lab for Climate Finance, 2017).

**Harmonising regulations and pension fund supervision**

The way pension funds are structured, regulated and supervised varies substantially across countries. This is due to many factors, including the history of their formation, the way other parts of their financial systems are regulated, the nature of their legal system, and so on. Harmonising regulations and pension funds supervision across countries, and especially among regional
groupings of countries that are closely linked economically and financially, has many potential benefits. And such harmonization is likely to be of significant value in allowing the financing of infrastructure projects. Since the 1990s, the harmonization and integration of occupational pension regulations across jurisdictions has been on the agenda of governments, regulators and supervisors in many advanced industrialized countries, mostly at the international level.

For example, the International Organization of Pension Supervisors (IOPS) is an independent international body representing those involved in the supervision of private pension arrangements.\(^{52}\) Its membership includes the national pension regulatory agencies of 75 countries. While the organization does not explicitly strive to harmonize regulations and supervision across national pension systems, it does provide examples, experiences and lessons for the benefit of IOPS members and the broader pensions community. It also proposes guidelines for its members in various areas, including regulation and supervision. One of its current priorities is helping pension regulators implement risk-based pension supervision.\(^{53}\) Another is focused on the supervision of investment management for alternative assets, including infrastructure and long-term investment (IOPS, 2017).

Regional harmonization of pension investment regulations, as pursued in the EU and Canada, can also be beneficial. This facilitates the movement of both labour and capital across borders, both of which can support investments in infrastructure. Protecting the pensions of workers when they are outside their home country can increase labour mobility. Reducing the regulatory burdens on pension funds choosing to invest in infrastructure projects in other countries can increase such investment. Cross-border infrastructure is a key prerequisite for the regional integration of economies and the facilitation of trade in goods and services.

The EU is pursuing a successful program to develop cross-border infrastructure, especially in the transport sector (EU Parliament, 2018). In addition to providing special risk-mitigation measures to mobilize financing for cross-border projects, it has taken steps to make it easier for pension funds to invest on a cross-border basis by harmonising their investment regulations. The EU Parliament has issued directives with such harmonization in mind. For example, one directive specifies that pension funds should be allowed to invest in other member states in accordance with the rules of their home member states to reduce the cost of cross-border activity. Therefore, the host member states should not be allowed to impose additional investment requirements on pension funds located in other member states (EU Parliament, 2016).

In Canada, employer pension plans are regulated by the provinces. The Canadian Association of Pension Supervisory Authorities is a national interjurisdictional association of pension regulators whose mission is to facilitate an efficient and effective pension regulatory system. One of its key priorities has been to coordinate and harmonize pension investment regulations across Canada’s provinces (CAPSA, 2001). This effort has, as yet, had little success.

The EU and Canadian efforts to harmonize its pension systems have generated some useful research on how the many barriers to such harmonization can be overcome (Hennessy, 2011; Hering and Kpressa, 2007).
Preliminary Recommendations

Pension regulators in Africa can benefit from the ideas and experiences outlined in this report as they attempt to help their countries mobilize domestic pension savings to finance essential infrastructure in their countries and regions. Here are recommendations for them to consider:54

- **Introduce risked-based investment regulations with clearly defined standards of accountability for pension fund fiduciaries and investment managers.** Risk-based investment regulations are more effective than rule-based regulations in allowing pension funds to diversify their portfolios while controlling risks and are more appropriate for investing in alternative assets, including infrastructure and other long-term assets. Given that risk-based regulation places more responsibility on pension fiduciaries, this requires an appropriate standard of accountability.

- **Remove barriers to pension fund efforts to diversify their investments.** Since it takes time to move from a rule-based to risk-based regulatory system, some portfolio limits are likely to remain in place in most countries. Regulators should consider modifying or removing specific limits that can limit investment in infrastructure, such as restrictions on investment in privately placed equity and debt.

- **Establish infrastructure as an asset class with its own investment limits.** Investment in infrastructure and other long-term assets can be encouraged in rule-based systems if such assets are identified as an asset class and a specific limit is established for them. However, there needs to be a clear definition of what infrastructure assets and investment vehicles can be included in this category.

- **Encourage fiduciaries to recognize the positive externalities that investing in infrastructure can have on future pension fund returns.** The primary purpose of pension investing is to provide it members with an adequate income in retirement. To do this, attention should be paid to the long-term impact of investments on the country’s development, not just the short-term returns to the assets in the portfolio. To allow pension fiduciaries to do this, the benchmarks for judging their performance cannot be limited to short-term market returns, especially in countries where such indicators do not truly reflect the overall performance of the economy.

- **Integrate ESG considerations into pension investing.** Given the demonstrated importance of environmental, social and governance factors on the long-term performance of an economy, combined with the difficulty of measuring their benefits from market signals, pension fiduciaries need clear standards for evaluating their investments in relation to such factors.

- **Promote the consolidation of smaller pension funds to promote better governance, achieve administrative efficiencies and have the scale necessary to invest in infrastructure.** Smaller pension funds are generally less successful in their investments and have poorer governance than larger pension funds. Consolidating funds that are below adequate size will also facilitate pension investment in
infrastructure and other long-term assets, which generally require larger investment staffs and larger single investments.

- **Support the development of private market funds that can help pension funds invest in** infrastructure and seek good alignment of interests between the two. Most pension funds do not have the internal staff resources to invest effectively in infrastructure and other long-term assets. Private market funds can be useful vehicles for such investment if they are structured properly and have an appropriate alignment of interests.

- **Facilitate the pooling of pension assets for investment purposes.** Net returns to investments in infrastructure and other long-term assets are generally higher for direct investing than they are when invested via private market funds. For pension funds too small to invest directly, an alternative is to pool their assets with other investors with aligned interests.

- **Encourage the formation of co-investment platforms, including platforms combining foreign and domestic institutional investors.** Pension funds can also increase the effectiveness of investing in infrastructure and other long-term assets by co-investing with other entities that have better capabilities for such investing. In many EMDCs, co-investing with foreign investors may provide domestic pension funds good investment opportunities while facilitating the development of their capabilities.

- **Help pension funds develop their in-house capabilities to invest directly in infrastructure.** Pension regulators should promote training of pension investment staffs for investing in infrastructure. Because one of the ways for pension funds to quickly acquire these skills is to recruit experienced staff from private investors, barriers to such recruitment should be lowered if possible.

- **Promote capital market refinancing once infrastructure projects are operating successfully.** While there is a high demand for pension fund financing of greenfield projects, most pension funds are not willing to take on construction risk or able to provide the oversight needed during the project construction period. Post-construction refinancing of bank debt with capital market financing via project bonds has proven effective for bringing pension funds into the financing of infrastructure projects. Pension regulations should facilitate this process, for example by allowing pension funds to invest in unlisted infrastructure project bond. They can also reduce refinancing risk for project sponsors by offering refinancing guarantees.

- **Encourage pension fund regulators to coordinate with securities market regulators to facilitate pension fund investing in infrastructure.** Pension and securities market regulations need to work together to ensure the vehicles that pension funds need for investing in infrastructure and other long-term assets. For example, regulations for issuing listed and unlisted project bonds may need to be adopted that meet the specific needs of pension funds and of project sponsors (such
as dealing with confidential information). Similar coordination may be needed for the development of infrastructure investment funds.

- **Work to harmonize pension fund regulation and supervision across borders to encourage investing in infrastructure.** Cross-border investment in infrastructure is a critical need in many regions of the world. Harmonising pension fund investment regulations makes it less difficult to secure financing for these projects and can open new investment opportunities for pension funds.

**Suggestions for Future Research**

This study has outlined some of the ways pension fund regulation and supervision can have an impact on the ability of countries to mobilize pension funds to invest in infrastructure. Additional work is needed on each country’s pension system and investment regulations to see how the above recommendations apply and how they might be implemented as needed.

In addition, there is a need for additional pan-African research. A few examples are:

- The International Organization of Pension Supervisor (IOPS) has promoted the use of risk-based investment regulations on a global basis, including a toolkit for national pension fund regulators. It would be useful to study how African pension funds have used IOPS support and resources and what more might be done to enhance their use.

- The Program for Infrastructure Development in Africa (PIDA) focuses on cross-border implementation of energy and transport corridors and regional internet exchange networks. Anchored in the Africa Union’s 2063 Agenda, PIDA was emphasized at the 2017 World Economic Forum as one of many pan-African strategies offering tangible solutions to the significant challenges impeding intra-African trade and industrialization. A study of how harmonising pension investment regulations might facilitate cross-border investment in Africa could be useful.

- The 2063 Agenda plan for its first 10 years calls for the Africa50 Fund to leverage pension fund investments in infrastructure (African Union Commission, 2017). Detailed analysis is needed on how this fund could best mobilize such financing—including the design of risk mitigation instruments and an examination of what changes in pension investment regulations might be needed to facilitate such investments.

- At least one attempt to pool pension assets for investing in infrastructure is being undertaken in Kenya. It would be useful to examine the feasibility of establishing other national and cross-border asset pools and what actions would be necessary to see this happen.

- A number of private market funds for investment in African infrastructure are available to African and foreign pension funds. It would be useful to find out whether
regulatory changes could provide better alignment of interest between these PMFs and their pension investors.

- Sharing infrastructure investment experience between African pension funds and with foreign pension funds could be facilitated by expanding the efforts of “mobilizers” such as the Africa Pensions Fund Network and the NASP project on Mobilizing Institutional Investors to Develop Africa’s Infrastructure (MiDA). Research is needed on how such organizations have performed and how their efforts could be enhanced and expanded.
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Introduced by Harry Markowitz in the 1950s, diversification is the concept of spreading your investment dollars into a variety of asset classes in an effort to increase return for a given level of risk.

The term “institutional investor” is used here to denote pension funds, insurance companies, sovereign wealth funds, endowments and similar organization with primarily long-term liabilities—as distinct from banks (OECD, 2013). In context of the discussion here, “long-term assets” refer to investments that are not easily traded and typically require that the investor intends to hold the assets in their portfolios for a significant period, usually seven years to twenty years or more. Often the long-term assets are never sold. Also, long-term assets should have a higher (historic) probability of maximising returns over the long term (typically defined as ten years) as compared to competing alternative investments. Two important categories of long-term assets are private equity and debt in companies and infrastructure projects.


GEPF is not officially regulated by the FSB but voluntarily elects to follow FSB rules and regulations.

The old pay-as-you-go defined benefit schemes were closed and the fund balances were transferred to the Bank of Nigeria to invest in Nigerian Federal Government Bonds, and to pay outstanding pension benefits as they come due. The Pension Plan Governing body felt the need to be more inclusive in providing pension coverage, especially with

[39]
explosive population growth. This younger generation is no longer staying home to care for the elders. This resulted in Nigeria’s Pension Reform Act of 2014 that expanded coverage to not only government and private sector employees, but also to allow coverage for self-employed individuals or in some cases companies with less than three employees provided certain conditions are met. This is a mandatory contribution plan for employees and employers.

17 www.pencom.gov.ng.

18 The IMF’s three-year Extended Fund Facility arrangement in the amount equivalent to SDR 8.597 billion (about $12 billion or 422 per cent of quota at the time of approval of the arrangement) was approved by the Executive Board on November 11, 2016 to support the authorities’ economic reform program (IMF, 2016).


21 The pension funds of the three schemes are pooled together. All pension reserves and accumulated surpluses are deposited and invested through National Investment Bank (which finances most of the government investment programs) (IOPS, 2011a).

22 Voluntary occupational pension plans have been established in Egypt since 1975 known as ‘Special Insurance Funds’ (SIFs). In addition to pension payments, SIFs could provide a range of other benefits (marriage disbursement, disability, decease of the member, etc.) in accordance with the decision of a fund’s board of directors and approval by the Egyptian Insurance Supervisory Authority (IOPS, 2011a).

23 Other regulators and supervisory authorities for Egypt are: The Ministry of Insurance and Social Affairs, responsible for the efficient operation of social insurance system, manages some pension programs within the social assistance system and being parts of national poverty alleviation programs. The National Social Insurance Authority is responsible for managing the pension and insurance system of both public (including government) and private sector subscribers. The Egyptian Financial Supervisory Authority is responsible for licensing, supervising and controlling the private pension funds (IOPS, 2011a).

24 Most countries have some quantitative limits on the investments of pension funds in specific asset classes. Usually the limits are high for government debt and publicly traded securities (corporate and bank stocks and bonds). Often there is a relatively small allocation to “alternative assets” (real estate, infrastructure, commodities, hedge funds, currencies and derivatives). Some countries do not allow investment in private investment funds, direct loans, or unlisted stock. Many countries have limits on all foreign assets and assets in foreign currencies. Pension investment regulators in many countries have, over time, loosened or eliminated restrictions on specific asset classes. According to the OECD, in 2017 eight countries did not impose any ceiling on pension fund investment by asset classes: Australia, Belgium, Canada, the Netherlands, New Zealand, the United Kingdom, the United States and Malawi (OECD, 2018a).

25 “Alternative” or “nontraditional” investments are defined as follows: direct investment in the following asset classes: infrastructure, real estate, private equity and commodities (and are typically long-term investments); indirect investments through either primary or secondary funds of private equity, real estate, commodities, infrastructure or hedge funds. (This second type also includes investment strategies that invest in traditional assets using non-traditional methods, such as short-selling and leverage.) Alternative investments can be traded either in private or public markets. They have a low correlation to markets, have active shareholders and provide “alpha” (excess return of an investment relative to the return of a benchmark index) with higher dispersion among managers. “Traditional” Investments are primarily publicly traded stocks and bonds. These are characterized by high liquidity, high correlation to markets, passive shareholders and provide “beta” (returns linked to movements of the overall market) with lower dispersion among investors.

26 U.S. pension funds have been investing little in infrastructure. (Much U.S. public infrastructure is financed via municipal bonds. However, federal tax exemption for interest on most municipal bonds makes municipal debt unattractive to U.S. pension funds because they are exempt from U.S. taxes.) Recent developments in the infrastructure market have increased investor attention to this asset class, however, and investors are taking different approaches towards investment in infrastructure. The majority of the investments in infrastructure are made on an opportunistic basis through private equity or real estate allocations. There seems to be a trend of placing infrastructure as a separate allocation as programs mature. Infrastructure is still perceived to be riskier by some investors than real estate and private equity. The infrastructure asset is often included in an inflation-linked allocation group. Despite recent direct investment of a few public pension funds, the large majority of U.S. pension investors invest in infrastructure through funds (OECD and Wyman, 2011).

27 Historically, courts viewed the trustee’s investment function as an act that the trustee was “reasonably . . . required personally to perform”. Thus, trustees that delegated that function were held personally liable when the investment agent caused losses to the trust. Over time, as investing increased in complexity, it has been accepted that the prohibition on delegation of the investment function should be reversed. Allowing trustees to delegate investment
decisions better serves beneficiaries’ interests by ensuring that trust assets are invested in accordance with professional standards.

28 In the United States, the long-standing use of the “prudent person” standard for fiduciary behaviour was modified by the Uniform Prudent Investor Act of 1994 to a “prudent investor” standard. The change reflected a recognition that, in accordance with modern portfolio management theory, prudence should be measured on an overall portfolio basis, rather than by discrete consideration of each particular investment. It also recognized that managing pension fund assets requires significant professional expertise beyond that of the common person.

29 Despite the maturity of the infrastructure markets in Europe, especially in countries such as the U.K., France and Spain, European investors have started building up their allocation to infrastructure, treating it as a separate allocation, only in the last few years. Allocations to such assets are still limited (1 to 3 per cent equity allocation of total portfolio) even if targets have been slowly increasing in recent years. In Europe, pension funds use the indirect market route to benefit from the experience and expertise offered by infrastructure fund managers. Only the largest pension funds have the right resources to invest directly in infrastructure.

30 Two such efforts are the European Long-Term Investors Association (ELTI) (www.eltia.eu) founded in 2013 and the Long-Term Infrastructure Investors Association (LTIIA) (www.ltia.org ) founded in 2014.

31 Equity, loans and bonds used to finance PPPs are key forms of investment that will receive the new regulatory treatment.

32 For example, the calibration of the stress factor for such investment in equity will be lowered to 30 per cent from 49 per cent. This will lower the capital charge.

33 The new regulations reduce, by 25 per cent, investment capital charges for qualifying infrastructure corporates compared with the standard formula under the previous Solvency II regulation.

34 “Sustainable development” is development that meets the needs of the present generations without compromising the ability of future generations to meet their own needs. “Impact investments” are intended to generate social and/or environmental returns alongside a financial return.

35 The responses to this request can be viewed at https://ec.europa.eu/info/consultations/finance-2017-investors-duties-sustainability_en.

36 At the current time, the issues of sustainability reporting and ESG integration by EU pension funds have been taken up in the areas of occupational pension funds (Pillar II) and private voluntary plans for personal pensions (Pillar III). The 2016 update to the Institutions for Occupational Retirement Provision Directive (IORP II) and the 2017 proposal for Pan-European Personal Pensions Products (PEPP) both encourage pension providers to disclose publicly whether and how they account for climate risk and include such factors in their risk management systems. But these provisions do not oblige them to take account of ESG factors in their investment policies (HLEG, 2018).

37 Even so, the European Commission, in March 2018, citing the catastrophic and unpredictable consequences of climate change and resource depletion, approved an action plan on sustainable finance. This plan called for urgent action to adapt public policies, including an effort to make the financial system part of the solution to ensure a greener and more sustainable economy (European Commission, 2018b).

38 Funds with fixed life spans are called “closed-end” funds and are the most prevalent type of infrastructure fund. There are a few “open-end” funds that no specific term and allow for continuous solicitation of additional capital, and periodic subscriptions and redemptions (Clark and Biskupska-Haas, 2017).

39 Traditional funds invest with a goal to exit within the typical ten-year fund life cycle, resulting in an average target holding period of three to seven years for a deal. Fund life rather than business rationale oftentimes dictates exit timing. In addition, PMFs are often under pressure to sell strong performers prematurely to facilitate fundraising efforts with investors demanding distributions and verifiable track records.

40 Australian pension funds—superannuation funds—are active investors in infrastructure. Some of the superannuation funds have built up a significant allocation to infrastructure (for some above 10 per cent of assets). The average size of Australian investors does not allow them in most cases to have the right resources in place to invest directly in infrastructure. If the superannuation fund is not large enough it would normally invest through closed-ended funds or through open-ended vehicles. Infrastructure is commonly treated as a separate allocation in the overall portfolio (OECD and Wyman, 2011).

41 Since LPs invest equity into these funds, for regulatory purposes they are treated as private equity investments, even if the fund itself invests only in infrastructure debt.

42 The income profile and level of return expected in greenfield and brownfield projects are quite different. Successfully operating projects are expected to provide stable dividends or interest payments, similar to investments in real estate and bonds. This suits income-style investors. During the construction period, investors are expected to make payments and do not generally have any income from their investments until the project is operating successfully. Investors accept the higher risk and deferred income of greenfield investments due to the eventual higher
return potential. This suits growth-style investors. Pension funds tend to focus on low-risk income generating investments, but they may seek some growth investments to help raise their overall investment returns.

43 There has been some consolidation in the U.K., which has roughly 6,000 pension schemes. Government intervention has led to the creation of the Local Government Pension Scheme, which recently consolidated 89 investing entities into 8 (Heenk and Smart, 2018).

44 Size is especially important for defined contribution plans. Members transferring between different providers and moving between funds within the same provider as they increase in age require defined contribution funds to maintain a certain level of liquidity. The smaller the fund, the higher the minimum share of liquid assets it must have. And the higher the share of liquid assets, the less able it is to invest in illiquid infrastructure assets (Morales, Fuentes and Stewart, 2017).

45 www.pipfunds.co.uk.

46 Strategic partnerships between banks, institutional investors, infrastructure corporations and donors/DFIs are becoming more common for structuring financing projects that highlight their complementary aspects. Partnerships are sought to align the structuring and debt origination capabilities of the banks with the appetite for long-term financing sought by institutional investors and with the convening power and risk-sharing capacity of DFIs (GIZ, 2017).

47 Infrastructure project bonds are used to raise capital for specific stand-alone projects and they are repaid from cash generated by the project.

48 “Hybrid” issuance regimes offer a compromise solution for countries seeking to facilitate the issuance of project bonds. The challenge lies in striking the right balance between facilitating project sponsor use of capital market financing while protecting the interests of investors (Loladze, 2014).

49 An initiative of this type was the EU and EIB’s Europe 2020 Project Bond Initiative, analyzed in Rossi, Stepic and Alerassool (2015).

50 An alternative option is for governments to finance the initial construction, allowing the private sector to build the project (via a PPP) and then sell it to pension funds and other institutional investors and banks when it is up and running. The government can then use the proceeds from the sale to develop additional greenfield projects. This could be more economical for the taxpayer, as the cost of capital from the private sector is usually considerably higher than the government can borrow for projects. Some of the projects where governments have used “infrastructure bonds” (such as in Nigeria and Kenya) or the projects have been financed by multilateral and domestic development banks could benefit from being refinanced into the capital markets.

51 In a “mini-perm”, the tenor of the project’s senior debt is significantly less than the duration of the contract, so that refinancing is necessary after five to seven years. At this point, the majority of the loan is still outstanding, and the project sponsor faces an event of default if the debt is not refinanced (Dupras, Marty and Voisin, 2015).

52 http://www.iopsweb.org/

53 The IOPS Toolkit for risk-based pension supervision (RBS) provides a five-module framework for pensions supervisors looking to apply a system of risk-based supervision. See http://www.iopsweb.org/rbstoolkit/.

54 There are many differences in pension fund systems across countries in Africa and in how their pension funds currently invest in infrastructure. Attempts to follow these recommendations must consider the specific structure and capabilities of each country’s pension funds.

55 This toolkit is available at http://www.iopsweb.org/rbstoolkit/.


57 https://au.int/agenda2063.

58 The Africa Pension Funds Network was established in 2014 by the AfDB’s Making Finance Work for Africa Secretariat. Mobilizing Institutional Investors to Develop Africa’s Infrastructure was established in 2016 by the U.S. Agency for International Development and the U.S. National Association of Securities Professionals. See www.mida-infra.org.