



Working paper

# Capital markets for cities

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## Key messages

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Building the fundamentals of strong leadership, strategic planning and credible public financial management for cities to strengthen their revenue mobilisation and access external financing is essential.

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Capital markets offer cities an additional potential source of private finance with the scale, timeframe and cost needed.

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The policy areas that should be prioritised to support cities in accessing capital markets are:

- Integrate cities into national and international policy frameworks, including for climate action
  - Establish bodies dedicated to raising capital market finance for cities
  - Focus on tapping into green finance and impact investing for cities
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# Abbreviations and acronyms

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<b>ADB</b>	Asian Development Bank
<b>AFD</b>	Agence française de développement (French Development Agency)
<b>AVCA</b>	Africa Venture Capital Association
<b>BIS</b>	Bank for International Settlements
<b>CAD</b>	Canadian dollar
<b>CCF</b>	Cities Finance Facility
<b>CDM</b>	Clean Development Mechanism
<b>CDPQ</b>	Caisse de dépôt et placement du Québec (Quebec Deposit and Investment Fund)
<b>CGD</b>	Center for Global Development
<b>DFI</b>	development finance institution
<b>EIB</b>	European Investment Bank
<b>EBRD</b>	European Bank for Reconstruction and Development
<b>EV</b>	electric vehicle
<b>IDS</b>	Institute of Development Studies
<b>IFI</b>	international financial institution
<b>IPO</b>	initial public offering
<b>FCDO</b>	Foreign, Commonwealth & Development Office
<b>FX</b>	foreign exchange
<b>IFI</b>	international financial institution
<b>IMIF</b>	International Municipal Investment Fund
<b>IPCC</b>	Intergovernmental Panel on Climate Change
<b>JSE</b>	Johannesburg Stock Exchange
<b>KfW</b>	Kreditanstalt für Wiederaufbau (German Development Bank)
<b>LGU</b>	local government unit
<b>LGUGC</b>	Local Government Unit Guarantee Corporation
<b>MIF</b>	Municipal Investment Financing
<b>MOBILIST</b>	Mobilising Institutional Capital Through Listed Product Structures
<b>MTN</b>	medium term notes
<b>OECD</b>	Organisation for Economic Co-operation and Development
<b>PFM</b>	public financial management

<b>PPF</b>	project preparation facility
<b>PWLB</b>	Public Works Loan Board
<b>SDG</b>	Sustainable Development Goal
<b>SPV</b>	special purpose vehicle
<b>SSF</b>	Sustainable Settlements Facility
<b>TAF</b>	Technical Assistance Facility
<b>TNUDF</b>	Tamil Nadu Urban Development Fund
<b>UK</b>	United Kingdom
<b>UKCCIC</b>	UK Cities Climate Investment Commission
<b>UKMBA</b>	UK Municipal Bond Agency
<b>UMDF</b>	Urban Municipal Development Fund
<b>UNDCF</b>	United Nations Development Capital Fund
<b>US</b>	United States

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# Executive summary

Access to finance has emerged as an important constraint on urban development, including with regard to the net zero transition and the urgent climate adaptation needs of many cities. Financial options are not keeping pace with cities' growth, increasing needs and complexities: a huge gap in finance now exists that runs into trillions of dollars.

To close this gap, private finance needs to be mobilised to supplement public sources. Current policy to help mobilise private finance covers capacity-building, reform to legal and regulatory frameworks, and project preparation facilities (PPFs). These have been complemented by dedicated financial intermediaries and risk mitigation (such as through guarantees). But the private finance being mobilised remains too granular, too slow to deliver and too small in scale.

An alternative is to seek finance from capital markets; this option offers much greater scale as well as being cheaper and longer in term. To be able to do this, city authorities and national governments need to better integrate cities into national and international policy frameworks (including Nationally Determined Contributions and climate funds). This should include enabling cities to have direct and simplified access to global climate funds and carbon credits to support capital market bonds.

International financial institutions and development finance institutions need to extend existing urban-focused departments and to make more varied and larger-scale use of guarantees and blended finance to enable many more cities to directly access private finance. New financial intermediaries need to develop and provide early-stage finance and then bundle and refinance these projects through capital market instruments including bonds and funds. Finance should be sought from new pools of 'city-aligned' capital. Key here are green bonds and impact investors.

Lastly, the barriers for cities with regard to accessing capital markets remain high, especially for 'second-tier' cities, for those in developing economies and for less 'investable' sectors and assets. As such, other financing sources, including taxation, national transfers and international development financing, also need to be maintained and grown.

# 1 Introduction

Cities are on the frontline of the world's most pressing challenges: climate change, migration, urbanisation and inequitable economic development. And there is a huge gap in the finance, running into trillions of dollars, needed to address these challenges. This gap is especially acute in developing economies (Negreiros et al., 2021; World Bank, 2021).

This is particularly urgent in relation to climate change. Cities account for 70% of global emissions, are highly vulnerable to storm surges and sea level rises and are host to 55% of the world's population (World Bank, n.d). Tackling climate change requires a radical restructuring of the carbon footprint and rapid adaptation measures for our cities – and the finance to enable this.

Public actors – such as international financial institutions (IFIs) and national governments – are trying to mobilise public and private finance to close this gap.

Current policy to help mobilise finance covers capacity-building, reform to legal and regulatory frameworks, and PPFs. These have been complemented by dedicated financial intermediaries and risk mitigation (such as through guarantees). These initiatives are welcome but, to date, cities remain reliant on public financing. Where private finance has been mobilised, it remains too granular (such as from bank loans, syndicated loans<sup>1</sup> and project finance)<sup>2</sup>, too slow to deliver and too small in scale (Tyson, 2015; Smoke, 2019; Attridge and Goult, 2021).

An alternative is to seek finance from capital markets. Offering publicly listed instruments, including bonds, funds and equity, can facilitate access to the huge pools of finance that capital market investors hold. This includes institutional investors such as pension funds, mutual funds and insurance funds, which hold \$90–150 trillion of assets globally, and the rapidly expanding markets for green and impact bonds.

Further, access to capital markets can be cheaper, and longer term than bank lending or project finance (Table 1). Capital markets can also facilitate 'exits' for non-public investors, such as private equity and venture capital funds, and hence encourage early-stage financing of development projects.

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- 1 Financing offered by a group of lenders – referred to as a syndicate – who work together to provide funds for a single borrower. The borrower can be a corporation, a large project or a sovereign government where the total loan is too large for a single lender so that the risk can be spread between many lenders.
  - 2 Financing for the development, construction and operation of infrastructure. Typically, it is provided as debt with repayments matched to the cash flows from the project once construction is completed and it becomes operational. The projects' assets – primarily the physical infrastructure – are held as collateral for the lender.

**Table 1** Advantages and disadvantages of bank lending, project finance and capital markets

Financing type	Characteristics	Advantages	Disadvantages
Bank lending	<ul style="list-style-type: none"> <li>• From commercial banks</li> <li>• Smaller scale</li> <li>• Secured or unsecured</li> </ul>	<ul style="list-style-type: none"> <li>• Useful for general and short-term financing</li> <li>• Flexible</li> <li>• Simple to understand</li> </ul>	<ul style="list-style-type: none"> <li>• Unsuitable for infrastructure or capital financing</li> </ul>
Project finance	<ul style="list-style-type: none"> <li>• From specialist banks or private investors</li> <li>• Secured on project assets or future revenues</li> <li>• More complex financing (including special purpose vehicles or syndication across small groups of banks or investors)</li> </ul>	<ul style="list-style-type: none"> <li>• Suitable for early-stage financing (planning and construction stages of projects)</li> </ul>	<ul style="list-style-type: none"> <li>• Limited scale</li> <li>• High cost</li> <li>• Complex to understand</li> <li>• Secured assets or revenues lost if any default</li> </ul>
Capital markets	<ul style="list-style-type: none"> <li>• From multiple investors, including institutional investors</li> <li>• Range of products, from commoditised bonds to more complex securitised securities and funds</li> <li>• Secured on project assets or future revenues</li> <li>• Secondary markets allow for investors to sell before maturity independently of the underlying assets</li> </ul>	<ul style="list-style-type: none"> <li>• Large scale</li> <li>• Long term</li> <li>• Suitable for very large assets or pools of smaller assets</li> <li>• Can be used for refinancing once asset is operational</li> </ul>	<ul style="list-style-type: none"> <li>• Some products complex to understand</li> <li>• Secured assets or revenues lost if any default</li> </ul>

Source: Author

In the United States (US) and in some countries in other regions, cities have access to capital markets through municipal bonds. But elsewhere there is underdevelopment or no development of capital markets for cities (Tables 2 and 3 in the Appendix).

This paper explores how greater access to capital markets can help with this issue and what can be done to accelerate such work. It was prepared as part of the Africa-Europe Mayors' Dialogue, a platform that brings together African and European cities to work on shared challenges related to sustainable urban development. City administrations have repeatedly highlighted access to finance as an important constraint to city infrastructure development, including in the context of the net zero transition and climate adaptation measures. Mayors have repeatedly emphasised the fact that the financial options available to their administrations have not kept pace with growth and the increasing needs and complexities of cities themselves.

The focus of this paper is specifically on financing for sustainable infrastructure – such as high-capacity public transport; smarter, more efficient, buildings; and clean and efficient utilities – because of the scale of financing needed, its suitability as an asset class for capital markets and its importance for climate change and adaptation. However, the discussion can also be applied to other financing needs.

The paper also aims to focus on issues beyond those of sound public financial management (PFM) and tackling barriers in national constitutional and legal frameworks. This is not because they are unimportant – indeed, they are critical – but because they are covered elsewhere. The paper has been produced on the basis of a desk review and a series of interviews carried out with key stakeholders, including representatives from IFIs, the private finance sector, specialist organisations and networks that support cities, as well as city teams themselves.

Section 2 provides an overview of the current state of capital markets for cities and reviews current policy initiatives to tackle barriers to greater access. Section 3 discusses possible ‘out-of-the-box’ solutions. These include stepping up the game on integrating city policy with national and international efforts, especially for climate change and for cities with weaker capacity and credit ratings. This includes rebooting financial intermediaries to focus on capital markets – not project finance – and bringing in-house the skills and capacity that are hard and slow to build within city authorities.

The paper also points to a critical role for cross-city cooperation to form financial intermediaries to allow for the pooling of assets. This would allow them to access larger-scale and longer-term finance by providing more sophisticated financial instruments that would be more attractive to investors – and especially to institutional investors. Finally, Section 3 discusses new ‘city-aligned’ pools of capital that should be a key focus for investor engagement. These include green bonds, local pension funds and niche ‘city-level’ finance sources. Section 4 concludes by drawing these themes together to identify policy priorities in the context of a deeper discussion of climate action for cities.

## 2 Today's capital markets for municipals

### 2.1 Introduction

Municipal bonds (or 'munis') are debt securities issued by cities, counties and subnational public bodies and are currently the main instrument that intermediates finance to cities from capital markets.

In 2021, the global market for municipal bonds reached \$4.0 trillion. However, this is concentrated in the US, which represented \$3.9 trillion, or 78% of this total (Fidelity, 2021). This has been encouraged by the federalist nature of the US, which allows cities independent revenue-raising and borrowing powers, and characteristics that make them attractive to domestic investors, including strong credit quality and tax-free income. The investor base is also well diversified, with 45% held by retail investors, 25% by mutual funds, 12% by banking institutions and 12% by insurance companies (The Investment Association, 2019).

Outside of the US, capital market access for municipals – the financial market term for city or sub-state authorities – is much more limited.

In the United Kingdom (UK), there are no municipal public bond issuances, although city authorities, such as Transport for London, have issued green bonds in their own names. Instead, local government authorities have more than £85 billion in outstanding debt, of which 75% is from the Public Works Loan Board (PWLB), with the remainder predominantly from commercial banks as loans or project finance. The UK Municipal Bond Agency (UKMBA) has also been set up to lend to local governments using funds raised in capital markets. However, to date, only one loan has been made (UKMBA, n.d.).

In Europe, local governments' issue is a modest 7% of total government debt, although this varies considerably by country (Hartwig Lojsch et al., 2011; Padovani et al., 2018). For example, Germany and Switzerland have well-developed markets, whereas markets are more modest in Finland, France, Italy, the Netherlands and Spain (Table 2 in the Appendix).

However, in developing economies, municipal bond markets are absent or only very nascent. For example, in Africa there have been only a handful of municipal bonds, and these have been issued as green bonds rather than vanilla (meaning, basic or simple bonds) munis, for example in Cape Town and Johannesburg (Table 3 in the Appendix).

In these countries, cities face difficulty accessing capital markets because of weak PFM, including a shortage of reliable and meaningful revenue streams and poor creditworthiness. They are also

held back more broadly by the immaturity of domestic capital markets (Haddaoui and Gulati, 2021; Tyson, 2021a). Because of this, credit support (such as partial guarantees) is often needed for subnational government bonds (Smoke, 2019).

Nevertheless, progress has been made in some countries, such as Brazil, India, Mexico, the Philippines and South Africa. However, borrowing tends to be concentrated in larger urban areas. For example, in Brazil and South Africa, 70% and 74% of total local borrowing has been assumed by only three and four municipalities, respectively (Smoke, 2019).

## 2.2 Barriers in cities' access to capital markets

As discussed in the section above, outside of the US, municipal capital markets are generally underdeveloped or nascent. This is to a large extent because of barriers relating to cities' mandates and credit fundamentals, difficulties in meeting requirements for capital market access and weak appetite among investors for municipal securities because of mismatches with their needs.

This section discusses each of these barriers further, distinguishing among those along the financing intermediation chain, from the mandates and credit fundamentals that make a city ready to access capital markets; to the ability to effectively access capital markets (such as to meet various requirements or to understand and structure securities); and then to the issuing of securities that are attractive to investors – or that meet investors' 'appetite' (Figure 1).

**Figure 1** Barriers in cities' access to capital market access



Source: Author

### 2.2.1 Mandates and credit fundamentals

Having the mandate and capacity to raise debt and revenues is an essential prerequisite to accessing capital markets, as these are the basics of creditworthiness.

However, there can be barriers here as a result of legal mandates. For example, 56% of countries forbid borrowing by local governments (including the issuance of municipal bonds) and 16% are not allowed to independently raise taxes (Negreiros et al., 2021). This means they are reliant on national debt, but national priorities and the political environment can result in cities lacking the influence to obtain a suitable share of national resources for infrastructure and other needs, or national governments may prefer to implement projects themselves (Interview material).

Other barriers can result from regulations. Internationally, for example, Basel III has resulted in new rules for infrastructure and emerging markets that make finance to these more scarce and costly.<sup>3</sup> IFIs usually do not provide finance at the city level, only at the national or international level – although this is beginning to change with the recent prioritising of green infrastructure (Fisher and Alexander, 2019; Haddaoui and Gulati, 2021; Interview material).

At a national level, regulations across energy, transport, waste and other sectors restrict public procurement and inhibit the development of a strong business case that can unlock private finance and increase the quantum of projects coming forward. For example, many countries have restrictions on the decentralisation of renewable energy generation and a lack of regulations governing net metering, thereby constraining the development of local renewable energy by municipalities and the private sector. The following is a case in point: the current regulatory regime in South Africa does not allow excess electricity from renewable sources such as residential or rooftop solar to be sold back to the grid. Reform to allow for this would stimulate and promote faster growth in the rooftop solar market (Interview material).

Municipal bonds<sup>4</sup> can be issued to finance specific projects. However, while cities have many assets that could potentially be used to raise finance in various ways, most assets are not well matched to the requirements of financing through bonds (often described as a lack of ‘bankable’

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3 Basel III was introduced after the 2007/08 global financial crisis in order to improve financial stability. It included higher risk weights for the calculation of capital requirements for infrastructure and emerging market financing. These had the effects of increasing costs of such financing in order to cover these higher capital requirements and created greater risk aversion from banks in relation to them. In addition, limits on large exposure rules have limited the ability of smaller banks to fund infrastructure projects. These inadvertent effects of the new regulations have meant that such financing has become more costly and less available (BIS, 2017; CGD, 2019).

4 Capital market instruments can be ‘general obligation bonds’ – which are unsecured on specific assets or revenue streams – or ‘revenue’ of project bonds – which are secured against named assets or future revenue streams. For example, the latter is typical in infrastructure financing, where the underlying assets (such as a building or a road) and revenues (such as rents or tolls) are secured against repayments.

projects). This is because of gaps in cities' capacity to prepare suitable projects, including with regard to financial structuring. Developing such expertise for individual cities is expensive and time consuming (Interview material).

There is also a mismatch between the most desirable assets from an investor's perspective and a city's financing needs. City projects can be too small for capital markets. For example, investors prefer building, energy or transport projects but cities also have high financing needs in sectors with less commercial attractiveness, such as waste, water and sewage (Tyson, 2015; Interview material).

### 2.2.2 Requirements to access capital markets

Cities need access to reasonably mature capital markets to be able to issue securities. For some cities, mainly those in notably smaller economies and in developing economies, capital markets may be insufficiently mature to support municipal securities (Table 4 in the Appendix) (Tyson, 2021a).

Cities also need to meet listing requirements for capital markets. This implies obtaining credit ratings, ideally at an investment grade.<sup>5</sup> This is because a rating allows investors to quickly assess the credit risk of an issuer. It also facilitates pricing and underwriting of new issuances by financial intermediaries and allows for ongoing monitoring – and potentially re-rating – during the life of the bond by the agency. Further, where ratings meet a minimum threshold – for example investment grade – this significantly increases the potential investor base, as institutional investors have minimum rating requirements.

In the US, such credit ratings are commonplace for municipal authorities, and it is an important duty for city treasurers and chief finance officers to maintain healthy credit ratings. However, in Europe, many cities lack credit ratings; and in developing economies, of the 500 largest cities, only 21% have investment grade credit ratings (Haddaoui and Gulati, 2021). Further, cities' credit ratings are often 'capped' at the same level as their sovereign credit rating. This can make obtaining investment grade ratings difficult in some low- and middle-income countries.

For green and impact bonds, certification standards need to be met. This can be a complex process, especially as consensus on international standards for such certification has not yet been reached.

Because of the difficulty involved in cities meeting these requirements independently, they have often been part of technical assistance programmes funded by development partners. While these programmes have helped, meeting the requirements remains a frequent barrier to capital market access.

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5 Capital market securities can be unrated but this limits the pool of potential investors and increases the expected interest rate (or 'coupon') with this due diligence being done independently by investors.

### 2.2.3 Investor appetite for municipal securities

The majority of investors for capital market instruments are institutional investors such as mutual funds, pension funds and life insurers. However, their fiduciary responsibilities and regulatory constraints require them to invest in relatively low-risk, transparent and liquid investments. This constrains their appetite for municipal securities because, first (and as noted), institutional investors typically require investment grade credit ratings.

Second, regulations can constrain the asset classes in which institutional investors can invest. For example, pensions can be prohibited or have portfolio limits on infrastructure investments – a key asset class that cities can offer (Tyson, 2015). As a result, only 0.8% of the capital managed by institutional investors is allocated to infrastructure (C40 Cities Finance Facility, 2021).

In addition, in some emerging markets, there are high and idiosyncratic market risks – such as foreign exchange and political risks – which are difficult for investors to mitigate (Tyson, 2015). This means that, for many cities, the potential ‘investor pool’ is limited to smaller and more specialist groups of investors with a higher risk appetite and – detrimentally for cities – a higher expected interest rate.

And even these investors can be constrained. For example, private equity funds and venture capital funds, which often specialise in the early-stage development and financing of infrastructure, have a business model whereby they invest in a firm or project and hence increase its value and then crystallise the gain (or ‘exit’ the investment) via initial public offerings (IPOs) in capital markets. The underdevelopment of municipal capital markets makes this difficult, creating a ‘chicken and egg’ problem for cities.<sup>6</sup>

## 2.3 Assessing current policy

As discussed, there are three main barriers for cities to access capital markets. Development agencies have already recognised these constraints and sought to implement policy interventions to help overcome them. A more detailed overview of these and their results is presented below. Examples of specific interventions are also discussed to illustrate these approaches (Figure 2).

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6 For example, 76% of limited partners consider ‘limited exit opportunities’ in Africa as the biggest challenge faced by private equity fund managers investing in the continent; root causes include the lack of thriving IPO markets. Among the 33 reported African private equity exits last year, not one took place through an IPO. In 2019, only one out of the 44 exits in African private equity went the IPO route (AVCA, 2021).

**Figure 2** Current policy to help cities access capital markets

Source: Author

### 2.3.1 PFM capacity-building

Competent PFM requires strong institutional capacity at the city level for the fundamental functions of revenue mobilisation and management of public expenditures, including investment management to underpin creditworthiness.

Cities vary in their PFM capacities. Some are highly competent. Others can have weaker capacity, especially in lower-income countries, where resources are limited and institutional development is still in progress.

Development partner support in strengthening local PFM capacities comes in various forms and with a range of objectives in mind. While most of this support is not explicitly geared towards improving the borrowing capacity of cities, much of it contributes directly or indirectly to making them more credible borrowers, thus increasing their chances of accessing external financing.

Some development partner support is aimed primarily at helping cities and other local governments become more effective and efficient spending units. Here, the focus tends to be on developing realistic, needs-based and well-coordinated plans and budgets, strengthening budget execution and ensuring adherence to procurement and reporting requirements. Building up these capacities will also contribute to making cities better at managing their investment projects.

Other technical assistance seeks to support cities in becoming development actors in their own right by broadening their fiscal space and autonomy. This is intended to be achieved by, among other things, helping cities strengthen own-source revenue mobilisation from local taxes, fees and charges. Updating tax registers, modernising revenue administration procedures (usually through

automation) and improving compliance through better taxpayer communication, convenience and enforcement are key reform elements aimed at increasing local revenue yields. Cities that can demonstrate having substantive, stable own-source revenue inflows tend to be in a favourable position when seeking external financing.

Box 1 presents a successful example of strengthening local revenue mobilisation in Freetown, Sierra Leone. Here, capacity-building efforts and technical assistance from various development partners helped develop the city's property tax assessment and collection capabilities.

### **Box 1 Building revenue mobilisation capacity in Freetown (Sierra Leone)**

The Freetown City Council, established in 1893, is one of the oldest municipal governments in Africa. National government transfers have funded more than 80% of its expenditure, with limited city-level revenue generation. This has impeded the city's ability to mobilise investment for key infrastructure.

To address this issue, the council sought to reform property valuation and tax administration. High-level political leadership and public support for taxation to pay for public services were key enablers of the reform programme, which received technical assistance from the International Centre for Tax and Development and the International Growth Centre and funding from the UK government. At the heart of this reform was a new approach to property valuation, which, by using a simplified points system, makes it possible to capture the occasionally large differences in property values, making it more equitable, while being easy to understand and reproduce by taxpayers, contributing to its acceptability.

By April 2020, 95% of properties in Freetown were mapped and valued – doubling the number in the register and potentially increasing property tax revenue for the city fivefold. Addressing the previous systematic undervaluation of high-end properties resulted in the tax payable on the top quintile of properties more than tripling.

Source: Bakarr Kamara et al., 2020; Grieco et al., 2020; IDS, 2021

### 2.3.2 Regulatory and legislative reforms

As mentioned, regulations and legislation can impede city financing, and reforms may be needed. This is often complex and time-consuming, especially where they require, for example, parliamentary approval. Reforms can also have complex interdependencies because they can interact with constitutional structures or financial regulations that have other purposes and goals. Nevertheless, reforms have been put in place effectively (Interview material).

This can be assisted by IFIs, development finance institutions (DFIs) and other development partners through technical assistance. This has been most effective when it is delivered as a complement to project preparation and financing (Tyson, 2015).

Box 2 highlights an example of such a successful ‘programme within a programme’ by the United Nations Capital Development Fund (UNCDF), where the technical assistance was closely tailored to the UNDCF’s core Local Financing Initiative for Municipals.

#### **Box 2 UNCDF’s Municipal Investment Financing technical assistance programme**

The Municipal Investment Financing (MIF) Programme seeks to increase the capacity of local and regional non-sovereign entities to access sustainable sources of capital financing. In order to achieve this outcome, the MIF Programme implements its multidimensional initiative through its country programmes, the International Municipal Investment Fund and a Technical Assistance Facility (TAF). It works in Asia (Bangladesh and Nepal) and in East and West Africa.

The TAF is managed by UNCDF and is constituted to support the pipeline for the International Municipal Investment Fund (IMIF) for investment projects of less than \$25 million. It had an initial capitalisation of \$50 million and provides grant-based funding.

It also provides technical assistance to cities to help them finalise their investment project so that the project can be presented to the Fund Manager of the IMIF, Meridiam, with the best chance of success. This aims to help cities tackle barriers in the financing process, including supporting them to get a credit rating and advising on regulatory and legislative reform. It has sought to tackle barriers to complement financing and project development by addressing, for example, conflicting goals and priorities between municipal and national authorities and reform of pension legislation.

Source: UNDCF, n.d.; Interview material

### 2.3.3 Project preparation facilities

Cities need to have diverse capabilities to attract private finance. They need to be able to address project planning, navigate governance and regulatory frameworks, manage complex financing arrangements across the lifecycle of projects and deliver value-added partnerships to bring projects to the operational phase.

Such capabilities can be difficult and inefficient to build ‘in-house’ for municipal authorities. This has led to the emergence of PPFs and financial intermediaries (the latter are discussed further in the next section). PPFs have been used to deliver early-stage financing in conjunction with specialist technical expertise and partnerships to provide such skills in an efficient and effective manner (Tyson, 2015; Neigreros et al., 2021).

PPFs have proved effective at the city level. Box 3 highlights the example of the C40 Cities Finance Facility, which provides technical support to cities to prepare ‘finance-ready’ projects. However, it does not provide finance itself, nor act as an intermediary for cities to access private finance (Box 3).

#### Box 3 The C40 Cities Finance Facility

The C40 Cities Finance Facility seek to tap into the growth in green private finance and attract it to city projects in developing economies tackling climate change mitigation and resilience projects. It is funded by a consortium of development partners.

It has successfully partnered with cities to develop ‘finance-ready’ projects by providing technical assistance to develop cities’ sustainability priorities into bankable investment proposals. This includes embedded advisors with sectoral expertise and technical training for city authorities.

Supported projects have included transport (cycle lanes in Bogota and electric buses in Medellín, Mexico City, Santiago and São Paulo) and river management projects in Durban.

Source: C40 Cities Finance Facility, 2021

Box 4 highlights the City Climate Finance Gap Fund of the World Bank. This fund provides technical assistance but also aims to act as an intermediary for cities to access private finance. However, in practice, little private finance has been raised to date.

### Box 4 The City Climate Finance Gap Fund

The World Bank's City Climate Finance Gap Fund was launched in 2020 and aims to close the urban climate financing gap for early-stage climate planning and project preparation in low- and middle-income countries through technical assistance and capacity-building, working with developers and providing assistance to attract private financing to mature projects.

It is currently capitalised at €55 million, with a target capitalisation of €100 million and private finance leverage of €4 billion. It is funded by a coalition of development partners and is being implemented by the World Bank and the European Investment Bank (EIB).

As of September 2021, it has worked with 33 cities, so far providing mainly grant-based technical assistance. The fund has not been operational for a long period but even so its leverage of private finance<sup>7</sup> appears fairly limited.

Source: World Bank, 2021

More needs to be done to cover this 'last mile' in project delivery to mobilise private finance for cities by means of such facilities, and they need to focus on capital markets finance as well as project finance.

#### 2.3.4 Publicly sponsored financial intermediaries

City financing can be mobilised via financial intermediaries managed or regulated by the public sector such as publicly owned municipal bond banks and funds. For example, these are present in the Nordic countries (KommuneKredit in Denmark, Kommunalbanken AS in Norway, Kommuninvest i Sverige AB in Sweden, Municipality Finance plc in Finland), France (Agence France Locale), the US, Canada, New Zealand, the UK and Japan as well as a number of developing economies, including, for example, Colombia, India and the Philippines (Smoke, 2019).

Their forms are diverse. Most have a mandate to mobilise finance for subnational authorities, which include cities as well as states and local governments. They can take the form of banks or funds and can be fully owned and managed by the government or co-owned with an IFI or private investors. They are typically capitalised from the national budget, mandatory or voluntary contributions from subnational governments or grants or sovereign loans from IFIs. They can also blend such public funds with private finance from commercial banks and private investors (Smoke, 2019).

<sup>7</sup> Not publicly reported but based on a review of announced projects.

These types of financial intermediaries offer significant advantages. They provide technical expertise and publicly funded loans. They also allow for the pooling of assets, which can be restructured into funds for which there is greater demand from private investors. Such pooling also allows for a reduction in overall costs, and improved transparency and administration of financing (Smoke, 2019; Interview material).

However, they also have disadvantages. They can lack sufficient capacity or incentives to operate effectively.<sup>8</sup> Their close ties to central government and reliance on publicly managed funding has led to politicisation and conflicts of interest in lending decisions. This has resulted in loans being approved for non-creditworthy investment projects, sometimes at unjustifiably subsidised interest rates and on excessively favourable terms. Political interference has also disincentivised loan repayment or incentivised the withholding of loans (Smoke, 2019; Interview material).

However, despite these drawbacks, intermediaries have been successful. Box 5 highlights an example from India where the intermediary financed city infrastructure from private investors through blended finance.

### Box 5 Tamil Nadu Urban Development Fund (India)

The Tamil Nadu Urban Development Fund (TNUDF) is a financial intermediary facilitating financing of city infrastructure. As of 2021, it had \$390 million in loans in transport, water, sanitation and sewage and other projects.

TNUDF co-invests using loans and bonds from the State Government of Tamil Nadu and IFIs including the World Bank and the Asian Development Bank (ADB), with funds raised via bonds from private investors. These funds are then pooled and lent to cities. Bonds are typically guaranteed by the Government of India, the State of Tamil Nadu and donors.

TNUDF also provides a broad range of technical assistance and capacity-building.

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8 In the past, there have been issues in relation to private financing, including lack of expertise in relation to the non-core competencies of city authorities such as financing and energy infrastructure and markets. This includes Bristol Energy, which was sold in 2020 at a loss of c. £30 million (BBC, 2020a); Nottingham Council, which lost c. £38 million on the collapse of Robin Hood Energy (BBC, 2020b); and Warrington, where a council-backed energy company was persistently loss-making and then failed in 2022 (Dhillon, 2021; Skentelbery, 2022). These fails have been assigned to a lack of expertise and competitiveness in energy markets, as well as the exceptional rise in gas prices in 2021, when the companies involved had not hedged their forward contracts with customers. Councils were also criticised for ‘propping up’ their joint or wholly owned energy companies for too long after it became apparent that they were not viable private enterprises.

It has been seen as successful in mobilising private finance, improving the creditworthiness of cities and promoting the development of a municipal debt market, and the bonds have benefited small and medium-sized cities in particular. However, the rigidity of the fund's lending policies and delays and poor construction in the project pipeline have deterred higher private investors.

Source: KFW, 2017; TNUDF, 2021

Box 6 highlights the example of green banks for cities. Green banks are public, semi-public or not-for-profit institutions that use public funds to attract private investment into clean energy or other 'green' investments for cities. Their role is to identify a pipeline of projects, manage project risk and support and finance project development. They have been successful in delivering financing at the city level but to date – and as for PPF – they have provided mainly lending or project financing and not capital market instruments.

### Box 6 Green banks for cities

As of 2021, there were 14 green city banks in the US and 3 in the UK. Others are in development in Asia and Africa. These focus predominantly on renewable energy and energy efficiency. Their current leverage ratios of public to private finance are \$1: \$3.60 – well above leverage at other DFIs of \$1: \$0.69 (Attridge and Goult, 2021).

However, to date, finance has been heavily concentrated in loans at the project level, making financing smaller scale and illiquid for investors. There have been a few exceptions. For example, the Connecticut Green Bank issued \$16.8 million of green bonds in 2020, which attracted institutional investors.

Source: Fisher and Alexander, 2019; Pillay et al., 2021

### 2.3.5 Credit guarantees

As noted, poor creditworthiness or lack of credit ratings can be a key barrier for cities to access capital markets. One approach to tackle this has been for a third party with greater creditworthiness to provide a guarantee or insurance 'wrapper' whereby this will compensate for any losses to a borrower should the lender not meet their obligations (The Investment Association, 2019; Haddaoui and Gulati, 2021).

Most commonly, this has been provided by national governments or IFIs. For example, the World Bank and the International Development Association provide partial risk guarantees and partial credit guarantees (Matsukawa and Habeck, 2007).

Two illustrative examples are discussed below. The first is a basic guarantee from an IFI for a city water system (Box 7) and the second a more complex arrangement whereby a publicly owned corporation was created to provide guarantees to local governments backed by guarantees from a donor (Box 8). However, as for other current policy approaches, the focus is on project finance and bank lending rather than the capital market.

### **Box 7 Credit guarantees for Luanda's water system (Angola)**

In 2021, Standard Chartered, the commercial bank, provided \$1.1 billion to finance major upgrading of water production, transmission and distribution facilities, including a water treatment plant, storage facilities and new networks in Luanda, Angola, that will serve 2 million people. The loan was made possible by guarantees from the World Bank and France's export credit agency, which overcame the bank's primary concerns about credit risk.

Source: Reuters, 2021; Interview material

### **Box 8 The Local Government Unit Guarantee Corporation (The Philippines)**

The Local Government Unit Guarantee Corporation (LGUGC) provided financial guarantees for local governments to enable them to access capital from private sector financial institutions. For water projects, the United States Agency for International Development provided a co-guarantee of up to 50%. In return, partner financial institutions, usually LGUGC shareholder banks or their subsidiaries, provided loans to, or underwrote bond issues for, the borrowing entities such as local government units (LGUs). For the guarantee services provided by LGUGC, borrowing entities paid a guarantee fee, which could range from 0.25% to 2.00% per year of the amount borrowed, depending on the risk assessment.

LGUGC also rated the creditworthiness of LGUs using its LGU credit screening and rating system, following due diligence requirements in their partner financial institutions. Only LGUs with a minimum investment grade rating were eligible for guarantees. The LGUGC was dissolved in December 2019, but a part of its function was taken over by Philguarantee, an entity formed by consolidating five Philippine guarantee programmes and agencies

Source: IISD, n.d.; Climate Bonds Initiative, 2020

## 2.4 Conclusion

As has been discussed, there are significant barriers for cities to access capital markets. Policy has sought to address these. Progress has been made in developing the capacity of municipal authorities in relation to ‘basic’ functions including revenue generation, asset assessment and PFM. There have also been recent initiatives to help municipals access finance through PPFs and financial intermediaries. These have achieved successes and are important in laying the groundwork for access to capital markets.

However, these policy initiatives have focused on mobilising project finance and bank lending. Such financing can be useful for short-term and smaller-scale financing needs. But capital markets offer greater-scale and longer-term finance. This is important because much greater-scale and much longer-term finance is needed if the needs of cities for infrastructure development and for climate action are to be addressed. Without tapping into capital markets, these needs are unlikely to be met. Initiatives that have sought to extend these to capital markets have been more limited. The greatest gaps lie in delivering capital market expertise and in tackling the barriers to investor appetite.

The next section discusses what innovations could be considered to build on the current groundwork of policy interventions to extend them with the goal of building municipal access to capital markets.

## 3 What innovations are needed?

### 3.1 Introduction

As discussed in Section 2, more needs to be done to develop capital market access for cities. In this section, the paper discusses how policy could be enhanced to achieve this.

There are three initiatives to consider: embedding cities into national and international frameworks; creating new financial intermediaries to deliver access to capital markets; and tapping into new pools of capital that are ‘city-aligned’. Each of these proposals is discussed in more detail below.

### 3.2 Integrate cities into national and international frameworks

As Section 2 discussed, policy frameworks and the political context can constrain finance for cities. Greater integration of city, national and international policy frameworks may help by harmonising and focusing policy more effectively to address such challenges.

The first step would be for governments to integrate cities as part of their national plans (such as Nationally Determined Contributions and National Adaptation Programmes). They also need to provide policy support to cities to develop blueprints and build capacity to effectively access private finance, including from capital markets.

Parallel efforts to integrate cities into international policy frameworks are also key. Particularly important is drawing cities into international climate mitigation and adaptation efforts more effectively. A range of partners are needed to deliver this.

For IFIs and DFIs, as discussed earlier, they typically have a mandate to act only at a national level. Ideally, these mandates would be changed to allow them to engage and provide finance directly to cities. This may be unrealistic in the near term. However, this does not preclude them from increasing direct engagement with cities into their work, nor working more collaboratively with cities to deliver projects.

For example, IFIs and DFIs could place greater emphasis on cities in their national-level work, including in relation to country diagnosis and strategy work. To a certain extent, this is already happening today. For example, urban projects are being financed in the infrastructure sector, where there is a natural overlap given the importance of developing urban infrastructure for national economic development and climate adaptation and mitigation.

In relation to projects and financing, cities could be given greater specific consideration. Again, there are some good initiatives in this area. For example, the World Bank, EIB, the European

Bank for Reconstruction and Development (EBRD), ADB and UNDCF have established urban-dedicated functions with support throughout the project lifecycle, including providing capital for early-stage financing and mobilising private finance. The French development agency – AFD – also stands out for its strong commitment to cities, providing technical assistance and project preparation support and directly financing a number of cities without national government guarantees. In addition, the African Development Bank has also recently established the Urban and Municipal Development Bank (UMDF), a multi-donor trust fund that will support cities in Africa to formulate city action plans and then to develop bankable projects around a number of the investment priorities identified.

These initiatives are welcome, especially in overcoming barriers in project preparation, which is increasing the scale and speed of delivering bankable assets, and in building technical expertise and capacity.

Initiatives should also be extended to include a greater emphasis on issuing capital market instruments (such as bonds) and funds (using pooled assets) rather than project finance. In addition, IFIs should extend the scale of guarantees and other bond ‘wrappers’ provided to cities (including via sovereign guarantees) to support further bond issuances by them. They should also extend the range. For example, most city-level guarantees cover only credit risk. While this is helpful (given their difficulty in obtaining credit ratings, as discussed earlier), they could include other major risks that deter investors – for example political and foreign exchange<sup>9</sup> risk and service guarantees to protect investors against service failures, in areas such as power, customs and licensing. They could also cover domestic investors (including pension and insurance funds) to help support more local currency financing (Tyson, 2015; Haddaoui and Gulati, 2021).

Cities need to be integrated more actively into global climate initiatives. The various climate funds (such as the Global Climate Fund and funds relating to Nationally Determined Contributions) are providing finance for green urban development and can be important in blended finance approaches with private finance (Feyertag et al., forthcoming).

However, feedback from the city level has described these sources of finance as difficult to access, given their complexity and the slow and cumbersome processes involved, and – as for IFIs – because of their more restrictive focus at the national level. Again, dedicated city functions within the international and national bodies responsible for climate finance would be helpful.

Finally, it is important to note that cities are dependent on the broader level of national capital market development. For cities in most advanced economies, these are usually well developed. But for those in developing economies, general underdevelopment of capital markets is a barrier for cities.

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9 Providing foreign exchange hedging instruments is also helpful in this regard. TCX, a DFI seed-funded provider of FX hedging instruments is a good example of such an intervention (Tyson, 2015).

Policy should seek to build national capital markets – such as through establishing high-quality regulation, market practices and financial infrastructure and reforms to deepen the investor base – and there should be support for cities to access international capital markets<sup>10</sup> (Tyson, 2021a).

### **3.3 Create capital market-dedicated financial intermediaries for cities**

As Section 2 discussed, there are several financial intermediaries for cities that offer important advantages. However, they have not mobilised sufficient private finance, and the finance they have mobilised is mainly project financing, not capital market finance – limiting its scale and maturity.

Creating new intermediaries that are focused specifically on capital market instruments for municipals could deliver a greater scale of finance by facilitating access to the huge pools of capital that are available through capital markets.

New financial intermediaries have already been set up at the city level to pool assets from across the city and providing a single financing vehicle for investors to invest across this diversified pool of projects (rather than at an individual project financing level). These new city-level intermediaries are proving effective in delivering the needed expertise to make these initiatives successful. However, they have not been used to support capital market securities. This should be done as the pooling of assets that they are already conducting can provide the basis for such securities, including funds and securitisations.

Capital market-dedicated financial intermediaries could also be scaled to act for multiple municipal authorities. This would leverage their in-house financial expertise across multiple authorities, making them more efficient and effective, and facilitate easier access to international, as well as domestic, capital markets with the additional scale and range of investors that such markets offer. More importantly, this would allow for the pooling of assets across municipal authorities to provide the capital market instruments that are attractive to investors. This could be done at a national, regional or international level.

It would be particularly effective at a regional or international level because this would allow for the pooling of assets from municipal authorities with very different credit ratings – and hence different combinations of risk and return. This would enable the creation of funds with enhanced returns relative to risk and with diversification benefits – both of which are attractive for institutional investors.

Such regional or international intermediaries would also be important for mobilising finance for smaller or less capable cities – such as those in developing economies or ‘secondary’ cities in developed economies. This is because it would enable them to overcome the higher barriers they have in building stand-alone capabilities and delivering the scale needed to access capital markets.

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<sup>10</sup> See Tyson (2021a) for more detailed discussion on these issues.

Such intermediaries could be publicly or privately owned or have shared ownership between the two. The ownership and capitalisation of such financial intermediaries have many options. One would be to replicate the public ownership and capitalisation of existing financial intermediaries (as discussed in Section 2). Another alternative would be for them to be joint ventures between public and private actors.

The advantage of public ownership is that it enables control for public policy goals and interacts with public finance easily (see Section 2). The advantage of private ownership is that it brings a depth of professional experience, including innovation in financial structuring, market expertise and sales networks. Encouragingly such privately owned financial intermediaries have proved successful in non-municipal development financing in capital markets.

For example, the Foreign, Commonwealth & Development Office (FCDO)-sponsored Mobilising Institutional Capital Through Listed Product Structures (MOBILIST) Platform created a specialist fund to access UK-based capital market financing for green infrastructure in low-income countries. It held a competition for private financiers to design and manage the funds, which are listed on the London Stock Exchange, which will increase their attractiveness to institutional investors. They received public anchor capital, which has achieved a \$1:\$4 leverage ratio to date – which compares very favourably to the \$1:\$0.60 achieved by IFIs in 2020 (Attridge and Goult, 2021). In December 2021, the first fund was launched and raised £115 million, with a further \$750 million of assets in the pipeline for 2022 (Mobilist, n.d).

Similarly, there are private funds that are not themselves listed, but that support primary issues in listed capital market instruments. For example, the Africa Local Currency Bond Fund is a private fund that invests in new issues of listed local currency corporate bonds on African stock exchanges. It supports first-time issuers to come to market by providing technical assistance, financial structuring expertise and anchor capital funded by donors. It has been successful in supporting and accelerating corporate bonds in the region and is contributing to domestic capital market development, including in local currencies.

Again, there have been some recent positive innovations in establishing such intermediaries. Box 9 highlights the example of the Meridiam Fund, a large-scale international fund which, to date, has raised more than €700 million for urban development projects in low- and middle-income countries. Box 10 highlights two innovative examples from the UK. It presents City Leap, a relatively small-scale intermediary for a single city, Bristol, to pool and finance its green assets (although, to date, it is interacting directly with investors rather than via capital markets). It also presents the UK Cities Climate Investment Commission (UK CCIC), which is exploring how the UK's major cities can pool assets, using an aggregator approach, to attract investors to finance net zero transition projects. Such innovative intermediaries need to be scaled and replicated and given a specific mandate to finance through capital markets.

### **Box 9 The International Municipal Investment Fund managed by the Meridiam Fund**

The IMIF is managed by Meridiam and was seed-funded by several development agencies, including UNDCF. It is focused on developing capital market access to finance resilient and sustainable infrastructure for cities.

The fund provides diversified investments by bundling projects from both Organisation for Economic Co-operation and Development (OECD) and non-OECD countries with a 25-year horizon into its funds. It also manages green and Sustainable Development Goal (SDG) impact investments through providing assurance on both financial targets and impact measurement. To date, it has raised €700 million for 17 projects. This is because its offering has appealed to institutional investors.

Nevertheless, the perception of risk in non-OECD countries remains a challenge, and guarantees and blended finance approaches have been needed to overcome both risk aversion and capital requirements for investors.

Source: Meridiam, n.d.; Interview material

### **Box 10 Single city and multi-city examples from the UK**

#### **Bristol's City Leap Programme**

City Leap is a public-private venture led by Bristol City Council. It will invest £1 billion of low-carbon and smart energy infrastructure investment (including low-carbon heat networks and renewable energy from wind and solar, as well as energy efficiency, electric vehicles (EVs) and smart energy systems) in Bristol's energy system over the next 10 years as part of the city's strategic goal to be the UK's first carbon-neutral city by 2030.

A key aspect of the programme is a range of strategic partnerships with private actors with established expertise in developing and investing in the green energy sector. These include institutional and private investors seeking long-term, stable returns from energy-related infrastructure as well as non-financial experts in energy such as developers and operators of green energy systems, digital actors in energy and operators of EV, including charging infrastructure. At the time of writing, short-listed partners included major firms such as, in energy, Ameresco, Engie and Eon, and, in engineering, Marubeni, Sumitomo and Vattenfall Heat UK.

Key to its success will be its ability to attract private finance, including large-scale finance from institutional investors, and to be able to finance the development of projects into mature ‘bankable’ assets.

### **UK Cities Climate Investment Commission**

The UK CCIC was launched in July 2021. It brings together London councils with the UK’s 11 core cities (Belfast, Birmingham, Bristol, Cardiff, Glasgow, Leeds, Liverpool, Manchester, Newcastle, Nottingham and Sheffield). It aims to leverage the combined scale of cities to mobilise private finance and drive investment into low- and net zero-carbon projects.

The Commission’s research has identified investment needs in the range of £200 billion required to achieve cities’ net zero pledges, a sum seen as well beyond the current capacity of public finances. It is pushing for a change of mindset from a reliance on public sector grant financing towards returns-based investment using new financial structures to achieve green investment at scale. The Commission sees the ability to aggregate projects across cities as key, particularly given the small, fragmented nature of many net zero projects in individual local authorities that would not be able to attract private finance.

The UK government is currently funding the Commission to produce a detailed national business case. The Commission is also focusing on developing, with local authorities, a pipeline of projects that can be classified and aggregated for investors. Discussions with investors have already identified a great deal of interest in this approach and it is expected to generate a greater scale of investment in key priority sectors, including renewable energy, retrofitting of the housing stock and decarbonised transport systems.

Source: City Leap, 2018; Beechener et al., 2021; Interview material

Further, as current funds have come up against limits to investor appetite in relation to the types of projects and levels of creditworthiness of cities (Interview material), they need to be supported by continued blended finance and guarantees.

Lastly, it is notable that there is evidence that financial intermediaries contribute to broader market development in municipal securities (Tyson, 2021a) – a welcome ‘secondary impact’ for overall municipal bond market development. This is also most likely to be important for cities where municipal bond market development is weaker than national capital market development because it indicates that there is a ‘low hanging fruit’ opportunity for municipal and national bond markets to converge. For example, this is the case in a several countries in Europe (see Table 4 in the Appendix for specific examples).

## 3.4 New sources of ‘city-aligned’ capital

### 3.4.1 Green bonds

Globally, there has been huge growth in the green bond market in the past decade, with the market now reaching \$2 trillion annually. This has been driven by demand from ‘green’ investors, who have emerged as a new and rapidly expanding investor class (Tyson, 2021b). Given that cities are responsible for more than 70% of global energy-related carbon emissions, this provides an opportunity for them to tap into this new pool of capital to finance the transition and development of green urban infrastructure.

Some cities have already seized this opportunity. For example, Toronto has established a green bond programme and, since 2018, has issued multiple bonds to finance its capital projects (Box 11). Key enablers of this programme that other cities could replicate include its in-house expertise in green bond standards and certification for its projects and bonds – an essential requirement for attracting green investors. Other major cities should consider similar programmes.

#### Box 11 Toronto’s Green Debenture Program (Canada)

In 2018, Toronto was one of the first municipalities to establish a Green Debenture Program. It finances capital projects that contribute to environmental sustainability. Between 2018 and 2021, it issued four bonds with total proceeds of CAD780 million.

Its cost of borrowing is low because it relies on the city’s good credit ratings (for example it is currently rated as AA by Moody’s), reflecting its resilience of revenue sources and sound fiscal management.

The programme has defined green bond standards and certification with independent advice and assessment from Sustainalytics, a leading green bond second-party opinion provider. This includes publicly available reports on the city’s environmental credentials and the framework’s alignment with the Green Bond Principles.

Source: City of Toronto, n.d.; Moody’s, 2020

However, for smaller cities and those in low- and middle-income countries, tapping into the green bond market is more challenging and policy support is needed. For smaller cities, access through financial intermediaries – as discussed in the prior section – is a good alternative to seeking to issue green bonds themselves.

For low- and middle-income countries, some cities that would have had challenges issuing vanilla bonds because of their lower credit ratings have been able to issue green bonds. Lagos and Cape Town have been able to issue green bonds because green bond investors have been willing to accept lower credit ratings where they are combined with green certification (Tyson, 2021b). Lagos in Nigeria has successfully issued international green bonds whereas its vanilla bonds have been confined to the domestic market (Box 12).

### Box 12 Lagos State Green Bond Programme (Nigeria)

The Lagos State Government has initiated a green bond programme with technical support from the Nigerian Green Bond Market Development Programme, a joint collaboration with FMDQ, an online exchange, and Financial Sector Deepening Africa, a UK-financed programme to meet listing and green bond certification requirements.

In December 2021, it issued a \$330 million (N137.3 billion) 13% 10-year bond to finance key infrastructure projects. It is the first of a programme of bond issues planned through to 2031 to finance key infrastructure projects including roads and healthcare.

On 10 September 2021, the programme was rated B (AA for national rating) by Fitch Ratings, making it below investment grade. According to Fitch, this reflected the state issuer's weaker PFM and debt sustainability relative to international standards, including its tax collection track record and outstanding non-green bond issuances. It also reflects the sovereign rating cap imposed by international credit ratings.

Source: NICP, 2021

However, such developing country bond issues have typically required either a ring-fenced sovereign issue or a sovereign guarantee. Most have also received technical assistance from donors and national green bond programmes in order to meet certification and listing requirements (Tyson, 2021b; Interview material).

More can be done to accelerate and build on these nascent green bond issues for emerging market cities. Donors need to continue to build and increase support through technical assistance and anchor capital in combination (including through capital market-dedicated financial intermediaries as discussed in the previous section). National central banks and regulators need to continue to strengthen national green bond programmes and make regulatory changes (where prudent and useful). For example, reform of capital and liquidity regulations to make them 'climate-weighted' can encourage green bond investments by giving concessions against capital requirements for these assets (Tyson, 2021b).

### 3.4.2 City or local pension funds

City or municipal pension funds are made up of the pensions of all workers who work directly for or with that municipality, with a primary objective of a return on investment for pensioners. Recently, some authorities have been tapping into these pension funds to invest in local real estate and ‘impact’ projects, usually through funds and bonds (such as green or ‘impact’ bonds). Such investments require caution to ensure that fiduciary and regulatory standards for pension investments continue to be met. This is especially so because there have been cases where this has not been done and losses have accrued to pension funds (Tyson, 2015).

Subject to these safeguards, further use of city and municipal pension funds to invest in city infrastructure via capital market instruments could deliver a ‘win-win’ of new investments suitable for pension funds and finance for local infrastructure development. Boxes 13 and 14 highlight such successes in Manchester, UK, and in Quebec, Canada.

As for green bonds, this could be achieved through capital market-dedicated financial intermediaries especially, as they can pool pensions across authorities. This means that these funds can benefit from diversification benefits that can help deliver their requirements for relatively lower-risk investments.

#### Box 13 Greater Manchester Pension Fund (UK)

The Greater Manchester Pension Fund is one of the largest local government pension schemes in the UK, with more than 350,000 members and £17.3 billion in assets under management.

The City of Manchester entered into an agreement with the Greater Manchester Property Venture Fund to invest £450 million to construct family homes and apartments, with the Council providing land and the Venture Fund putting up the money to build these family homes for rent and sale in the Greater Manchester area.

To manage risk appropriately, local investment is limited to 5% of the main fund value, and pooling of assets with other local authorities has been completed.

Source: Clayton et al., 2017

### Box 14 Quebec Pension Fund investments (Canada)

Established in 1965, the Caisse de dépôt et placement du Québec (CDPQ) manages investments on behalf of Québec's public and para-public pension and insurance funds, representing the pensions of over 6 million Québécois.

It has over CAD400 billion of assets under management and made an annualised return of 9.6% over the 10 years to 2021. It invests in a wide range of assets with the 'triple bottom line' of sustainability, economic growth and financial returns combined with a well-diversified portfolio.

Investments are concentrated in infrastructure, mid-tier private companies (with a focus on high-tech and green energy innovators) and real estate. Its portfolio also includes the Climate Innovation Fund, launched in 2020, which plans to invest CAD500 million in energy transition and sustainable agri-food.

Between 2017 and 2021, it had cut the carbon intensity of its portfolio by 49% and nearly doubled its holding of low-carbon assets to CAD39 billion. However, the latter represents only 10% of its portfolio and only 26% of its assets are in Canada.

The fund represents an interesting model for cities as it provides professional management that balances the need for moderate risk and long-term outlooks for pensions and insurance funds combined with finance to further the sustainable economic growth of the city from which those funds derive.

Source: CDPQ, 2021

### 3.4.3 Specialist bonds for cities

Bonds can basically be structured using any sources of upfront capital that can generate future revenue streams to pay interest and principal. Seeking new and innovative ways to provide these basics may provide specialist sources of financing for cities.

There have been some successful projects using revenues from carbon credits or climate funds. These have resulted from the Kyoto Protocol, which allows countries to meet their emission targets through the creation and trading of carbon credits.<sup>11</sup> The Clean Development Mechanism

<sup>11</sup> There are three mechanisms: emissions trading, the Clean Development Mechanism (CDM) and Joint Implementation.

(CDM), in particular, is potentially useful for cities because it allows for project-based carbon credits that can be traded on carbon markets, and hence provides cash flows for private borrowing or otherwise financing green projects, including bonds (Feyertag et al., forthcoming).

Some exploratory projects have already begun in carbon trading for cities. Box 15 discusses an example from South Africa relating to the upgrading of low-income housing. Other examples include Diani in Kenya, which has used carbon credits to restore mangrove swamps to protect coastal urban areas, and tree planting in Freetown, Sierra Leone, which is currently financed by donations but is exploring how to switch to financing through carbon credits (Tyson et al, 2020; Interview material).

However, these projects are currently small in scale and face difficulties in accessing carbon credits because of the complexity of the certification processes. National or international facilitation could help overcome these issues by providing assistance to meet carbon credit certification and trading requirements, as well as to extend these into the basis for green bonds (Feyertag et al., forthcoming).

### **Box 15 Low-income housing development in Cape Town (South Africa)**

Cape Town financed a project to improve the thermal performance of existing and future housing units and improve lighting and water heating efficiency through carbon credits from the CDM for a seven-year project in Khayelitsha, a large informal settlement in the city. It achieved the retrofitting of more than 2,300 low-cost homes with solar water heaters, insulated ceilings and energy-efficient lighting.

This was South Africa's first internationally registered CDM project and was supported by the Sustainable Settlements Facility (SSF), a project partnership between SouthSouthNorth and the Development Bank of Southern Africa, with funding from the German Development Bank (KfW) and the Federal Republic of Germany.

Finance of R7 million (\$1 million) was sourced from carbon credits from the CDM. This required an application using the CDM's simplified baseline and monitoring methodology for small-scale CDM projects, which, although simplified, remained complex. For example, measuring and monitoring carbon dioxide emission reductions required a methodology to be designed for the project including test projects and energy engineering assessments in order to meet the requirements of the CDM application. This was achieved through the support of the SSF.

Source: CDM, 2005

Another example is diaspora bonds – where finance is sought from residents who have emigrated – at a state and city level. Diasporas have an openness to a ‘patriotic’ discount and less risk aversion relative to other investors. These have proved successful in raising sovereign bonds in, for example, India and Israel, and are most successful where a receiving middle- to high-income country has a sizable first-generation diaspora (Ketkar and Ratha, 2009). Box 16 presents an example from Kerala, a southern Indian state whose government is active in developing green infrastructure and which has financed infrastructure through diaspora bonds.

### Box 16 Kerala’s diaspora bonds (India)

Since 1991, the Indian government has funded various national bonds from its large and wealthy diaspora community. Kerala’s State Government built on the back of this established market with an issue of diaspora bonds via a special purpose vehicle (SPV) that markets and manages the investment programme. The proceeds from the diaspora bonds are earmarked for specific development projects (to date, mainly in transport) and the SPV creates a transparent and accountable system for governance. Further funds are being sought for suburban railway and metros, water supply management and highway projects.

Source: Overseas Keralites Investment & Holding Ltd, n.d.; Ketkar and Ratha, 2009

Another alternative is to raise local finance for specific projects that urban residents want, if they are willing to finance the capital costs upfront through a local bond issuance and to bear service costs throughout the life of the asset to repay these costs. There have been several successful examples of this. For example, African cities have issued bonds for the capital cost of installing cooling in domestic and public buildings with ongoing pay-as-you-use subscriptions (Haddaoui and Gulati, 2021).

## 3.5 Conclusion

There are three main initiatives to consider to increase cities’ access to capital markets: (1) embed cities into national and international frameworks; (2) create capital market-dedicated financial intermediaries; and (3) tap into new specialist pools of ‘city-aligned’ capital. All build on current policy initiatives but extend them to have a greater focus on capital markets – not project finance – and to look for innovative instruments and new pools of capital and revenues to provide the finance for bonds.

In the next section, the paper draws these themes together to conclude, including by identifying policy priorities and underlining the need for urgency in addressing cities’ financing needs in response to climate change.

## 4 Conclusion

As discussed throughout this paper, there is a need to mobilise greater finance for cities if economic development and climate adaptation and mitigation are to be achieved.

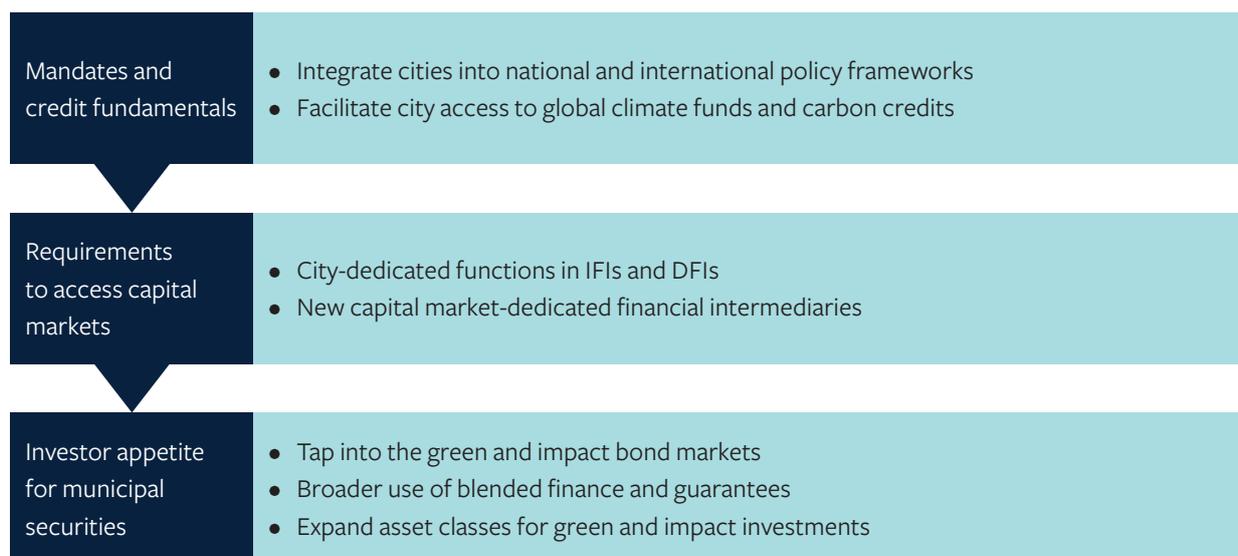
Capital markets offer cities a potential source of such finance with respect to the scale, timeframe and cost needed to tackle these challenges. However, to date, there has been insufficient finance from this source. Policy interventions have raised modest project finance but have not opened access to capital markets in a widespread manner.

To address this, the fundamentals of strong leadership, strategic planning and credible PFM for cities is essential. To help establish this, PFM technical assistance and capacity-building need to continue.

As part of this, there is an urgent need for cities to plan for climate change. Cities have made progress. The ‘best in class’ have put in place net zero plans and are seeking effective approaches to access private finance and climate finance funds. Nevertheless, by 2021, only 36% of countries had such plans in place or in progress at the subnational level (IPCC, 2022). This is because of gaps in high-level planning, strategies and preliminary studies (such as greenhouse gas inventories and climate impact studies) to prioritise climate investments (Smoke, 2019).

For these reasons, the paper suggests that there are several policy areas that should be prioritised (Figure 3).

**Figure 3** Policy priorities to help cities access capital markets



Source: Author

The first policy priority is for city authorities and national governments to partner to integrate cities into national and international policy frameworks (including Nationally Determined Contributions and climate funds) to ‘up the game’ on climate action for cities.

This should include enabling cities to directly access global climate funds and carbon credits. This will need further partnership with the international bodies responsible for these funds. In this regard, a specific action that would be useful would be to have a highly simplified process (that is, more simple than the existing simplified CDM) for small-scale projects at the individual city level so that cities can access these funds more effectively.

A second policy priority is to establish bodies dedicated to raising capital market finance for cities. These should include IFIs and DFIs extending existing urban-focused departments within them and more varied and larger-scale use of public capital for guarantees and blended finance.

New financial intermediaries should also be established with a mandate to work with cities to develop and provide early-stage finance for their projects and then to bundle and refinance these projects through capital market instruments, including bonds and funds. These will require cooperation between cities, national government and international organisations. However, successful forms and ownership structures are diverse; these need to be tailored to the context of each specific intermediary.

Such IFI and DFI departments and new financial intermediaries should also focus on raising finance from new pools of ‘city-aligned’ capital as a key part of their mandate. However, risks need to be managed. In recent years, some countries have tried to engage too quickly in developing municipal bonds, which has led to wasted efforts and little finance. Financial intermediaries have been mismanaged or poorly designed (Smoke, 2019). As such, care needs to be taken in designing intermediaries to ensure a balance and transparency between the needs of cities, private incentives within intermediaries and the requirements of institutional investors in relation to regulations, returns, liquidity and time horizons.

Third, a key aspect of policy should be green finance. Focusing exclusively on green bonds would be particularly valuable because the market requires specialist knowledge to, for example, understand and execute high certification requirements and impact assessment for green finance. A similar approach could be taken to impact investing.

For both, mandates could seek to broaden the asset categories for investors. This is because green and impact investors’ current preferences are for assets such as housing, energy and transport, leaving the equally developmentally important sectors of water, sewage, waste and air unfinanced. Mandates could seek to shift investor appetite towards these sectors by presenting clear arguments relating to their social impact and providing ‘easily’ investable assets in them (such as bonds).

Similarly, such investors may be interested in specialist bonds that finance community-led climate change initiatives if they become more aware of their high impact. Advocacy efforts would help in this regard.

Lastly, the barriers for cities to access capital markets remain high. This is especially the case for ‘second-tier’ cities, for cities in many developing economies and for less ‘investable’ sectors and assets. As such, there is likely to be a significant ongoing need for a spectrum of financing sources for cities, including taxation, national transfers and international development financing.

Nevertheless, within this landscape, capital markets offer the opportunity for cities to greatly expand the scale and speed of finance to progress their economic development and address increasingly urgent climate adaptation and mitigation.

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# Appendix

**Table 2** Capital market access for selected cities in Europe

City (country)	Level of muni market development (1)	Detail (2)
Amsterdam (Netherlands)	Medium	Yes in green bond markets – Municipality of Amsterdam €1 billion in municipal bonds
Barcelona (Spain)	Medium	Yes in Spanish public vanilla muni bond markets – total issues reached \$51.4 billion by 2021 (or 27 issues)
Bristol (UK)	Low	No (although municipal green bonds are planned through SPV and Community Municipal Investments)
Helsinki (Finland)	Medium	Yes via publicly owned credit institution (Municipality Finance Plc of MuniFin) but no direct issuances by cities
Lisbon (Portugal)	Low	None
Mannheim (Germany)	High	Yes – mature market with direct issuances by cities
Milan (Italy)	Medium	Yes in muni bond markets – total issues reached \$9.6 billion by 2021 (or 27 issues)
Paris (France)	Medium	Yes – green bonds for City of Paris plus \$25.6 billion in French muni bonds
Zurich (Switzerland)	High	Yes – mature market with direct issuances by cities with sovereign guarantees; plus \$47.6 billion in muni bonds by 2021

Note: European cities covered here have been selected from the membership of the Africa-Europe Mayors' Dialogue  
Source: (1) Author; (2) data for December 2021 from CBond

**Table 3** Capital market access for selected cities in Africa

City (country)	Level of muni market development (1)	Detail (2)
Cape Town (South Africa)	Low	Yes – JSE-listed R6.2 billion (£400 million) in green bonds plus MTNs
Johannesburg (South Africa)	Low	Yes – Bond Exchange of South Africa listed \$6.6 billion (£420 million) in municipal bonds, JSE-listed R1.46 billion (£70 million) in green bonds plus MTNs
Lagos (Nigeria)	Low	Yes – N500 billion MTN note programme with 3 issues to 2021 of N377 billion but N10.7 billion (\$30 million) in green bonds issued for muni infrastructure (energy and transport in Lagos) as sovereign issue
Nairobi (Kenya)	Low	No – but KHS 4.3 billion (\$40 million) in green bonds issued for muni infrastructure (energy and transport in Nairobi) as sovereign issue

Note: This small selection reflects the underdevelopment of the municipal bonds market in Africa. As yet, none of the African cities that are members of the Africa-Europe Mayors' Dialogue have issued municipal bonds, though the city of Dakar has previously, though ultimately unsuccessfully, explored a bond issuance (Gorelick, 2018).

Source: (1) Author; (2) data for December 2021 from CBond

**Table 4** Capital market development for selected cities

City (country)	National capital market development (1)	Level of muni market development (2)	Convergence opportunity (3)
Amsterdam (Netherlands)	High (0.75)	Medium	<b>Yes</b>
Barcelona (Spain)	High (0.80)	Medium	<b>Yes</b>
Bristol (UK)	High (0.87)	Low	<b>Yes</b> – but muni market below peers
Helsinki (Finland)	High (0.82)	Medium	<b>Yes</b>
Lisbon (Portugal)	Medium (0.58)	Low	No – national capital market development too low
Mannheim (Germany)	High (0.71)	High	No – muni market already mature
Milan (Italy)	High (0.77)	Medium	<b>Yes</b>
Paris (France)	High (0.70)	Medium	<b>Yes</b>
Zurich (Switzerland)	High (0.87)	High	No – muni market already mature
Cape Town and Johannesburg (South Africa)	Medium (0.55)	Low	No – national capital market development too low
Lagos (Nigeria)	Low (0.21)	Low	No – national capital market development too low
Nairobi (Kenya)	Low (0.04)	Low	No – national capital market development too low

Note: European cities covered here have been selected from the membership of the Africa-Europe Mayors' Dialogue. African cities are selected from those who have issued green municipal bonds; these cities are not part of the Mayors' Dialogue platform.

Source: (1) International Monetary Fund Financial Markets Index score (2019) where high is above 0.70 and low below 0.40 and medium is scores between these two points; (2) Taken from Tables 2 and 3; (3) Author.