

The public investment gap: the need for external finance to increase public investment

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Question

What is the evidence on the need for increased public investment in developing countries and specifically the need for increased external finance to fund this bilaterally and/or from the Multilateral Development Banks (MDBs)? (With a primarily focus on MICs (particularly LMICs) and LICs that are moving towards LMIC status.)

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1. Summary

Public investments are an important tool for economic growth and development. For sub-Saharan Africa, the issue of optimal level of public investment is under-researched. Public investment trends show that during the booming years of the 2000s public investment went up in all developing countries and emerging markets. Public investment in Low-Income Countries (LICs) and Lower Middle-Income Countries (LMICs) is higher as a percent of GDP than in other emerging markets and advanced economies and has followed a general upward trend since 2000, first surging before the global financial crisis and then picking up again until 2015. The up-going trend after the global financial crisis was mainly the result of high export commodity prices, advancing in particular countries that depend heavily on these exports for their public finance. However, with the recent fall in commodity and fuel prices, the literature shows that now only the more diversified and frontier economies particularly in LMICs are able to remain their public investment levels. The gap between public savings and public investment is growing rapidly in developing countries, contributing to higher government debt-to-GDP ratios. Budget deficits have gone up, interest rates have risen, and local currency depreciation has increased the burden of external debt.

Despite the recent struggles to raise public investment in LICs and LMICs, there is a call from the international community and national governments for additional public finance to invest in sustainable development. Additional finance is needed for job creation, the transition to a green economy, climate change mitigation, sustainable and inclusive food systems, access for all to education, energy and health care. Recent calculations on investment gaps relate to the Sustainable Development Goals (SDGs). The literature references an annual US\$1.4 trillion investment gap for LMICs and LICs (US\$2.5 trillion worldwide). A large part (40%) could be financed through increased private investment (e.g. foreign direct investments). The remaining public investment needs are particularly high and unmanageable for LICs, as it is 27% of GDP, while for LMICs it is 5.5% of GDP.

The literature further references in what sectors public investment is needed. For example, to help vulnerable countries deal with the consequences of climate change, between US\$140 billion and US\$300 billion per year will be needed to 2030, and US\$280 billion to US\$500 billion per year to 2050. Furthermore, public investment needs are the highest for education, energy infrastructure and transport infrastructure. Private investments are estimated for power installations and transport infrastructure, however, they are concentrated in LMICs and will ignore road infrastructure and access to energy in rural areas. In sectors with high private investment rates, like ICTs and telecommunications, public investment is still necessary to stimulate infrastructure in remote areas and for updating policy frameworks for the use of new technologies. Public investment in policies will give the private sector better opportunities to invest in innovation. The health sector is a good example of where investment needs are very well assessed and money mobilised to finance investment needs and improve efficiency.

Public investment needs can be financed in multiple ways. There are three main measures that governments can take. Firstly, governments can increase tax revenues (it is estimated that developing countries can gain 9% of GDP through reforming tax systems and tax collection). Secondly, improving public investment management is necessary to increase efficiency and impact (the average developing country loses about 30% of the value of its investment to inefficiencies in its public investment processes). Thirdly, Public Private Partnerships (PPPs), which can reduce risks for private investors, could - if well managed – improve quality and

quantity of public investment. However, the literature shows that PPPs are mainly used in emerging markets and less in LMICs and LICs. Furthermore, PPPs are concentrated in energy (power) and transport (airports and ports). Overall, if developing countries succeed in these three measures this would mean that most LMICs could provide in their own public investment needs. However, LICs still rely on additional external public finance flows.

Therefore, additional external finance, in particular in LICs and some LMICs, is still necessary. Multilateral aid (through multilateral development banks) is unlikely to increase significantly, however, they play an important role in aid assistance and capacity building on public investment management. Bilateral aid flows are not expected to increase significantly in the coming years, and more ODA money is used for loans instead for grants, particularly for LMICs (and other MICs). Also some LMICs (e.g. Senegal and Ethiopia) recently have accessed international financial bond markets, as a consequence increasing their debt levels significantly.

The literature shows that governments now have a wide range of new finance tools available, in the form of innovations for resource mobilisation and resource delivery. This results in more complexity and planning for public investment projects to find the right financial tools. Governments can act in three ways. “Additional” finance provides more money for development, generating a distinctly new flow of funds. “Efficient” financial mechanisms add value by reducing risks and improving financial characteristics of a program rather than raising new funds. “Effective” mechanisms are designed to increase purchasing power of available funds by incorporating incentive structures that enhance accountability and ownership. Many current initiatives combine these attributes.

The literature used in this report is a mix of academic research and grey literature (mainly from multilateral and international institutes). Data and information from these references are mainly gender-blind.

2. Trends and importance of public investment

The importance of public investment

The way public investment is defined and measured across countries varies. In general, it refers to investment by governments at all levels on physical infrastructure (e.g. roads, energy installations, government buildings, etc.) and soft infrastructure (e.g. education, health, innovation support, etc.) with a productive use that extends beyond a year (OECD, 2014). Most literature agree that under the right conditions, public investment can be a powerful tool to boost growth and provide infrastructure to leverage private investment (e.g. Fosu et al., 2016; Kalaitzidakis & Tzouvelekaz, 2011; Fedderke & Bogetic, 2009). Public investment shapes choices about where people live and work, influences the nature and location of private investment, and affects quality of life. Public investment is a shared responsibility across levels of government, which makes its governance particularly complex.

In the literature there is a long debate about the precise importance of public investment for long-term economic growth and welfare. A vast theoretical and empirical literature exists; however, the empirical evidence is mixed (Fosu et al., 2016). There is no doubt that public investment enhances long-term productivity growth through its external effect on the production function of private firms (e.g. through better infrastructure, better education and better health). However, its importance and effectiveness depends on how investment is financed (fiscal policy) and

managed (building capacities for institutions) (e.g. Grigoli & Mills, 2014; Kalaitzidakis & Tzouvelekas, 2011).

Fedderke and Bogetic (2009) presented five reasons for the contradictory empirical findings: the presence of nonlinearity; crowding-out effects; endogeneity; an indirect or complementary effect (rather than a direct productivity effect); and problems of aggregation. Even though an adequate and efficient supply of public capital promotes output and growth, the burden resulting from financing it may have an adverse effect as well, such as the crowding out of private capital. And should the private sector not receive a net advantage from the infrastructure development, there would be no increase in output. It is this phenomenon that mainly gives rise to the nonlinearity between public investment and growth.

For sub-Saharan Africa, the issue of optimal level of public investment is under-researched. This is mainly because the majority of the discussions have focused on attracting private investment to this region (Fosu et al., 2016, p.1958). By making use of nonlinear models, Fosu et al. (2016) show for sub-Saharan Africa that the growth-maximising level of public investment is approximately 10% of GDP. It further estimates that there has been significant public underinvestment in Africa. This is in line with other literature that argues that there are significant differences between sub-Saharan Africa and other LMICs in terms of paved roads, telephone mainlines, and power generation, with sub-Saharan Africa possessing less than one-fourth, one-seventh, and one-eighth the respective infrastructure units than their counterparts.

In contrast, there are others (mainly in older literature) that argue that most African countries already have public overinvestment, probably as a result of creating rent-seeking opportunities (Devarajan et al, 2003). This ambiguity is likely explained by the implied low “quality” of public investment due to inefficient public allocation. Grigoli and Mills (2014, p.150) show that indeed lower quality of governance in developing countries increases the volatility of public investment and that there is evidence of a positive relationship between institutional quality and the quality of infrastructure. El-Ashram (2017) comes to the same conclusion for the Caribbean region. Both, Grigoli and Mills (2014) and El-Ashram (2017) conclude that policymakers should take measures to strengthen institutional capacity to manage public investments. However, as Fosu et al. (2016) recognise, African governments in LMICs (except from most fragile states) have improved governance in the more recent period; hence, higher quality of public investment could be expected.

Trends in public investment

Public investment in the IMF's group of Low Income Development Countries (LIDCs), which includes LICs and LMICs, is higher as a percentage of GDP than in emerging and advanced economies and has followed a general upward trend since 2000, first surging before the global financial crisis and then picking up again until 2015 (Gurara et al., 2017, p.8).¹ By contrast, trends in emerging markets and advanced economies had been downward sloping in the 2010s. Median public investment in LIDCs rose significantly from 5.5% of GDP in 2000 to a peak of

¹ The IMF's World Economic Outlook database has information on public investment and public saving. The analysis in this section is based on 47 LIDCs for which the database contains the information on public investment. For the latest updates on the World Economic Outlook database see: <https://www.imf.org/external/pubs/ft/weo/2018/01/weodata/index.aspx>

7.1% of GDP in 2010. Following a temporary slowdown in 2011, public investment picked up again and stood at 6.7 % of GDP in 2015, before declining to 6.4% in 2016 (see figure 1).

Trends in public investment have differed between LIDCs, particularly after the global financial crisis (IMF, 2018). In the pre-crisis period the upward trend for public investment was common to most of these countries, which benefited from a favourable global economic environment, rising commodity prices, and debt relief, among other factors. In particular, commodity exporters expanded public investment more than other countries as they benefited from a large terms-of-trade improvement (Gurara et al, 2017, p.8). These trends diverged in recent years, with public investment falling in commodity exporters as a decline in commodity prices led to fiscal pressures (and in fragile states), while diversified exporters and frontier LIDC economies recorded an increase from the pre-crisis peak (see figure 2).

Figure 1. Public Investment: 2000-2016 (source: Gurara et al., 2017)

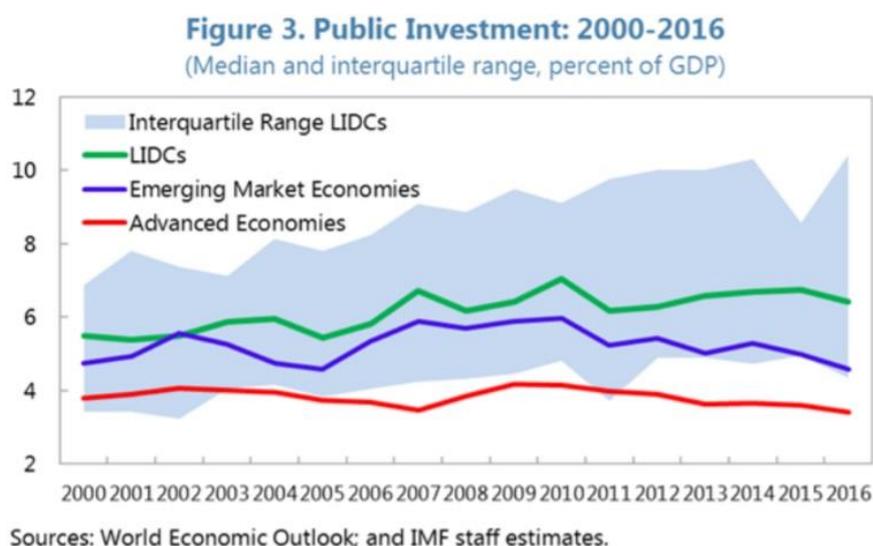
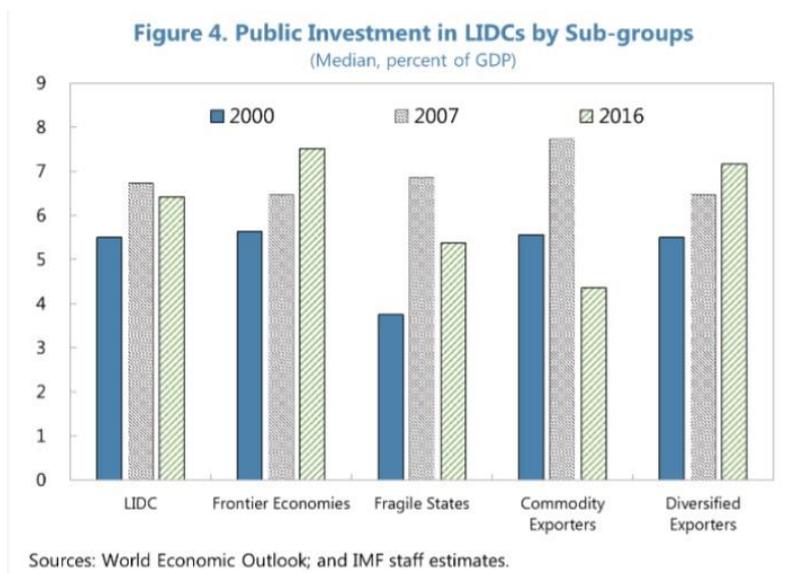


Figure 2. Public Investment in LIDCs by sub-groups (source: Gurara et al., 2017)

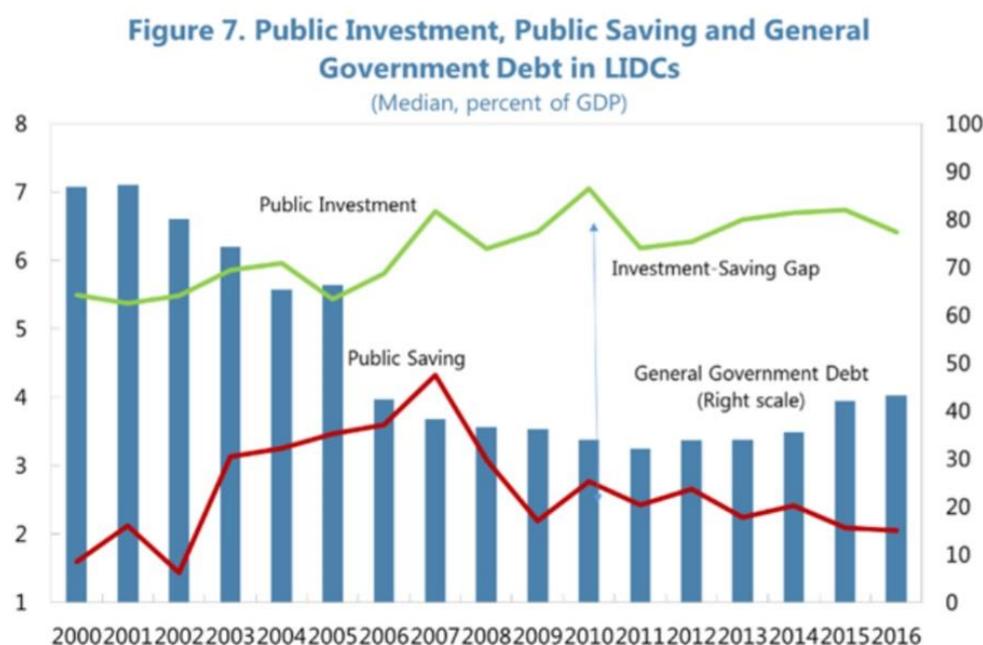


The IMF data further shows that some countries stand out with substantial scaling-up of public investment, with highest levels reached in Djibouti, Republic of Congo and Ethiopia, which have been pursuing national development agendas centred on improving infrastructure (Gurara et al., 2017). Public investment rose steadily in several commodity exporters, including Bolivia, Mongolia, Mozambique, Niger, and Tajikistan, until a drop in 2014-15 following a negative commodity price shock. However, in other countries, the ratio of public investment to GDP has declined significantly over time, reflecting, for example, intensified fragility in Eritrea and Yemen, and fiscal pressures in Nigeria and Uzbekistan (Gurara et al., 2017). A few countries have not experienced a pronounced scaling-up, but have maintained fairly high levels of public investment throughout the past 15 years. For example, Bhutan and Vietnam averaged 13 and 9% of GDP, respectively, since 2000. On the other hand, in several countries, public investment has been quite low over the whole period, for example never exceeding 5% of GDP in Nepal, primarily because of implementation capacity constraints and frequent government turnover (Gurara et al., 2017).

The gap between public investment and public saving

IMF estimations (2018) show that public saving has generally not been scaled up commensurately with the increase in public investment. Widening fiscal deficits (in over two-thirds of LIDCs) are fully accounted for by higher public investment levels in about 30% of cases, and by falling public savings in almost half of cases (IMF, 2018, p.8). The gap between public investment and saving, which narrowed before the global financial crisis, started widening in subsequent years, indicating increasing recourse to debt financing (see figure 3). Median public saving has dropped 2.4% of GDP since its 2007 peak, returning to the early 2000s' levels. In 2015, public investment exceeded public saving in 42 out of 46 LIDCs and the gap between median public investment and median public saving reached 4.8%; the widest it has been since 2000 (Gurara et al., 2017).

Figure 3. Public Investment, Public Saving and General Government Debt in LIDCs (source: Gurara et al., 2017).

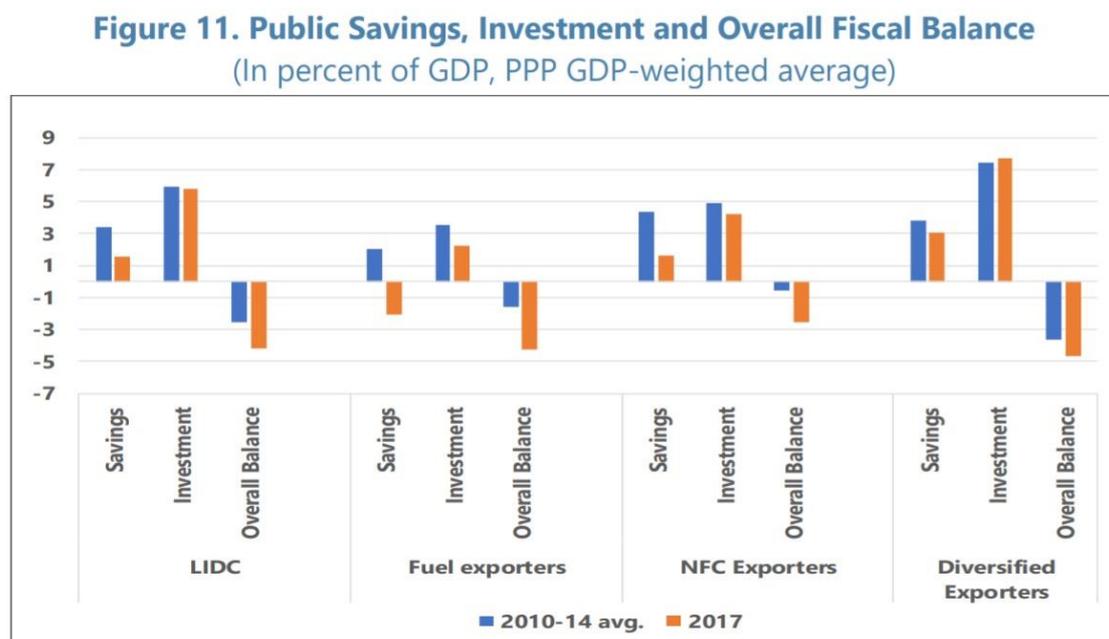


Sources: World Economic Outlook; and IMF staff estimates.

This negative public saving-investment balances have contributed to higher government debt-to-GDP ratios, following a notable drop in debt ratios in most LIDCs over the course of the 2000s, mostly driven by multilateral and bilateral debt relief initiatives (IMF, 2018). Fiscal vulnerabilities have increased recently, particularly among commodity exporters (fuel exporters as non-fuel commodity exporters) (figure 4). Budget deficits have gone up, interest rates have risen, and local currency depreciation has increased the burden of external debt. As a result, the median general government debt ratio went up from 34% in 2013 to 43% in 2016 (Gurara et al, 2017).

Diversified economies have done better (IMF, 2018). They managed to raise public investments, while reducing less their public savings.² As figure 4 shows, the gap between savings and investments has not risen much in recent years; however, this gap remains high as it was already high some years ago in comparison with the fuel and commodity exporters (IMF, 2018). In some frontier markets, rising debts are also the result of access to international capital markets: since 2010 LIDCs issued more than US\$22 billion in sovereign bonds, in many cases with the aim of using part of the proceeds to finance new infrastructures (Presbitero et al., 2016). For instance, in 2014 Ethiopia issued a US\$1 billion Eurobond to finance export-oriented projects such as investment in the power transmission infrastructure, sugar factories, and the development of industrial parks (IMF, 2015). More recently, in May 2017 Senegal issued its third Eurobond (US\$1.1 billion) with the intent to finance a series of infrastructure and power production projects.

Figure 4. Public savings, investment and overall fiscal balance (source: IMF, 2018).



Sources: WEO and IMF staff estimates.

² The 10 countries where rising deficits were fully accounted for by higher public investment include two NFC exporters (Guinea-Bissau, Mali) and eight diversified exporters (Bangladesh, Cameroon, Cote D'Ivoire, Kenya, Madagascar, Moldova, Nepal, Nicaragua). The eight countries where rising deficits reflected a mix of rising investment and falling public savings include five NFC exporters (Burkina Faso, Niger, Sierra Leone, Zambia, Zimbabwe), and three diversified exporters (Benin, Comoros, Tajikistan).

3. Public investment needs

The need for more public investment to achieve SDGs

In September 2015, governments adopted the Sustainable Development Goals (SDGs) to be achieved by 2030 in order to guide international cooperation in pursuit of ambitious quantitative goals. Quantifying financing needs for the SDGs is complex and necessarily imprecise since estimates always rely on a host of assumptions, including the macroeconomic and policy environment, the shape of national and international trade policies, advances in technology (as well as access to and capacity to use that technology), the predicted impacts of shocks, stresses and climate change, and also the extent to which investments in one area have spill-overs (co-benefits or damages) in others (UNDP, 2018, p.10). To achieve the SDGs by 2030, countries will need to develop long-term strategies that take the goals seriously as time-bound, quantitative objectives. On current trends the world will miss the goals by a wide margin unless policies are improved, international cooperation is enhanced, and more public and private resources are brought to bear on financing the investments needed to achieve the SDGs. The literature shows that focusing on the marginal expansion of government services will not be sufficient to reach the SDGs (SDSN, 2015, p.7).

Globally an incremental 1.5-2.5% of world GDP needs to be invested each year by the public and private sectors to achieve the SDGs in every country (SDSN, 2015, p.1). Estimates from UNDP (2018, p.11) based on data from UNCTAD as to the annual cost of eradicating extreme poverty in all countries are about US\$66 billion annually. Estimates of annual investment requirements in infrastructure in all countries (water, agriculture, telecommunications, energy, transport, buildings, industrial and forestry sectors) amount to between US\$5-7 trillion. Almost US\$4 trillion of this corresponds to developing countries (including MICs), and only US\$1.4 trillion is currently being met - leaving an annual financing gap of US\$2.5 trillion according to UNCTAD data.³ This is without Global Public Goods (GPGs) provision (e.g. climate change mitigation, biodiversity conservation, communicable disease control, investments in research and science etc.), which are estimated at several trillion more per year. Between US\$140 billion and US\$300 billion per year will be needed through to 2030, and US\$280 billion to US\$500 billion per year through to 2050, to help vulnerable countries deal with the consequences of climate change (UNEP, 2016).

One study (SDSN, 2015) measures the total global investment gap at US\$2.4 trillion, which is a total SDG investment need of 2.5% of world GDP. The study further shows that incremental spending needs in LICs and LMICs may amount to at least US\$1.4 trillion per year (US\$343-360 billion for LICs and US\$900-944 billion for LMICs). This includes an estimated US\$130 billion annual for incremental climate mitigation and adaptation investment needs (approximately 10% of the total). LICs and LMICs will need to increase annual investments in the SDGs by some 4–11.5% of GDP (17-43% in LICs and 3-9% in LMICs). Between 39-45% of the investment needs are likely to be financed through private resources, which means that an additional approximately US\$820 billion has to be invested annually in LICs and LMICs through the public sector. For LICs this means a total incremental annual investment need of US\$220 billion, which is a public investment need of approximately 27% of GDP. For LMICs a total incremental annual public

³ The US\$2.5 trillion investment gap was first mentioned in the UNCTAD World Investment Report 2014, titled: Investing in the SDGs: an action plan. http://unctad.org/en/PublicationsLibrary/wir2014_en.pdf

investment need of US\$600 billion is required to achieve the SDGs, which corresponds with a public investment need of 5.5% of GDP for these countries.

Public investment needs per sector

Firm-level data compiled by the World Bank as part of the Enterprise Surveys confirm the presence of large investment gaps in access to electricity, water and transportation infrastructure, and indicate that such gaps are an actual constraint on real economic activity in LICs and LMICs.⁴ The percentage of firms in LICs and LMICs that identify access to electricity and transportation as a major constraint to their business activity is, respectively, 43 and 24%. By contrast, this is 32 and 18%, respectively, in emerging markets (Gurara et al., 2017).

Focusing on access to electricity, the study of Gurara et al (2017) shows 74% of firms in LICs and LMICs experience power outages, compared to 53% in emerging markets. Data on physical infrastructure show that there has been a sharp improvement in most LICs and LMICs over the past fifteen years. This change has been broad-based across country groups, although frontier economies have shown faster accelerations and, on the contrary, changes in fragile states have been less perceptible. A few countries, particularly Vietnam, stand out with impressive performance across a range of indicators (Gurara et al., 2017, p.6).

The World Bank report (2017) on African infrastructure shows that closing the infrastructure quantity and quality gap relative to the best performers in the world could increase growth of GDP per capita by 2.6% per year. The largest potential growth benefits would come from closing the gap in electricity-generating capacity. However, public and private investment are too low to close the infrastructure gap. According to granular budget data collected by the BOOST initiative for 24 countries in sub-Saharan Africa, annual public investment on infrastructure was 2% of GDP in 2009–15 (World Bank, 2017). Roads accounted for two-thirds of overall infrastructure investments in the region. Capital spending on electricity and water supply and sanitation each accounted for 15% of total capital expenditures. Analysing public spending in infrastructure, the World Bank report (2017) also found that countries spend significantly less money than they actually allocate to projects. This reduces the execution of projects earmarked for investment each year, a clear sign of the inefficiencies pervasive in the sector. PPPs in sub-Saharan Africa remain a very small market, with projects concentrated in only a few countries, namely, South Africa, Nigeria, Kenya, and Uganda.

Low-carbon infrastructure

The New Climate Economy report (2014) of the Global Commission on Economy and Climate estimates suggest that the world will need to invest US\$90 trillion in new and replacement infrastructure by 2030. Overall, this will require US\$6 trillion a year, about double current levels of investment. About 70% of such investment will be needed in developing countries; of this, roughly 30% in the energy sector (NCE, 2017). By combining renewable energy with reduced fossil fuel investment, more compact cities, and more efficiently managed energy demand, low-carbon infrastructure will increase investment requirements by only an estimated US\$270 billion a year, making it a total of US\$6.27 trillion a year.

⁴ For more information on the special website of the World Bank's Enterprise Surveys see: <http://www.enterprisesurveys.org/>

Health

The leading financing institutions in health, including the Global Fund to Fight AIDS, Tuberculosis and Malaria, Gavi, the Vaccine Alliance, and the Global Finance Facility have all used needs assessments to make a strong case for investments in health and to mobilise vast increases in domestic and international resources for the sector. However, LICs and LMICs are on average far from meeting key health financing goals such as the Abuja Declaration target of allocating 15% of the government budget to health (WHO, 2018). Health spending worldwide remains very unequal: more than 80% of the world's population live in low and middle income countries but only account for about 20% of global health expenditure. The global average health expenditure per capita is US\$1,011, but half of the world's countries spent less than US\$366 per capita. In 2015, nearly 50 countries with population of 2.7 billion spent less than US\$100 per capita on health (WHO, 2018, p.5).

Related to the SDGs the study of SDSN (2015) estimates that annually between US\$69-89 billion incremental investments are needed in the health sector (approximately US\$27 billion for LICs and US\$52 for LMICs). Private sector investments in this sector are expected to be none. The WHO (2018) shows further that development assistance for health amounted in 2015 to just over US\$19 billion, or less than 0.3% of global health expenditure. However, the average share of external resources in health spending in the 31 LICs was over 30% in 2015. External resources as a percentage of health expenditure increased over the past 15 years, while the health component for government spending decreased in the LICs. For MICs government domestic funding as a share of current health expenditure increased from 48% to 51% and it fell from 30% to 22% in LICs. This means that LICs (and LMICs) are increasingly dependent on external resources to fund public investment needs in the health sector, which can be related to the successful fund mobilisation of international initiatives (WHO, 2018).

Education

The pace of progress in access to education has accelerated thanks to increased investment in education goals over the past decades following the reaffirmation of the Education for All goal and the Millennium Development Goals.⁵ However, progress has been uneven, and the remaining challenges disproportionately affect the most marginalised populations. Most of the education budget in developing countries goes to better-off already educated children. Children in rural areas have been twice as likely as those in urban areas to never go to school; the poorest children are five times less likely to complete primary school than the richest; 36% of out-of-school children are in conflict affected zones; and 16 of the 20 countries furthest from reaching the Education for All goals are in sub-Saharan Africa (Steer & Smith, 2015).

Steer and Smith (2015) show that in 2020, a total annual investment of US\$30 billion will be required in LICs, US\$181 billion in LMICs and US\$326 billion in MICs (excluding China) to be on track to meet the basic education goals (including pre-primary, primary and lower secondary) by

⁵ Between 1999 and 2012, the number of out-of-school children decreased from 106 million to 58 million; two-thirds more children were enrolled in primary school; gender parity improved, with the number of countries with fewer than 90 girls enrolled in primary school for every 100 boys falling from 33 to 16; transition and retention rates improved, and the lower secondary gross enrollment ratio increased from 71 to 85% (Centre for Universal Education at Brookings – 2015).

2030.⁶ Domestic public spending is by far the most important source of finance for basic education. Aid plays an important gap-filling role in LICs.⁷ With a larger tax base, most countries have allocated a greater share of their GDP to education (on average, 4.6% of GDP for total education and 1.7% of GDP for primary education in 2012). Comparing current spending with recent costing estimates to achieve the SDGs, Steer and Smith find that fewer than 15% of LICs and 40% of LMICs spend more than the required 5.5% of GDP needed to meet the basic education SDGs by 2030.

Steer and Smith (2015) estimate that an annual total investment gap for basic education of at least US\$27 billion across all country groups by 2020. The largest gaps between annual costs and projected domestic public spending, as a share of annual cost, are in fragile states and LICs. SDSN (2015) estimates that for all levels of education the annually incremental investment needs of the education sector are approximately US\$194 billion to achieve the SDGs by 2030. That is US\$37 billion for LICs and US\$157 billion for LMICs. Like in the health sector all investments are expected to come from public sources.

Agrifood

Food systems play a key role to achieve development and sustainability goals.⁸ The World Bank (2018) shows that current levels of investment in agricultural value chains are insufficient to achieve key development goals including ending poverty and hunger, boosting shared prosperity through more and better jobs, and better stewarding the world's natural resources by 2030. Different from investment in health and education, sources of finance for private sector investments in agricultural value chains are expanding. Sources include own-savings, local and international banks, value chains actors, impact investors, development financing institutions, private sector foundations, and agricultural investment funds. ODA for agriculture declined sharply from the 1980s to mid-2000s from 18% to less than 4% of total ODA and more than halved in real absolute terms. However, since the mid-2000s, with increasing concern about the neglect of agriculture and the subsequent world food price spikes, ODA for agriculture almost doubled from 2005 in both its share and absolute amount to about US\$13 billion in annual commitments (World Bank, 2018).

While actions are still needed to increase private investment and ODA for the agrifood sector, there is a critical need for public resources to finance essential public goods and services such as human capital, agricultural research, transition to climate smart agriculture, and

⁶ Like with Health, there are several global initiatives and programmes that have succeeded to mobilise money for investments in education. Examples are, World Bank's Program for Results (P4R), the Norway–World Bank Results in Education for All Children (REACH) program, the DFID Girls' Education Challenge Program, and the Global Partnership for Education's (GPE's), which are all based on new resource allocation model (which includes a variable tranche related to results).

⁷ For LICs, official development assistance (ODA) accounted for more than 20% (or US\$2.3 billion) of domestic public spending on basic education; for LMICs, ODA accounted for 2% (or US\$2.6 billion); and for MICs, it accounted for less than 0.3% (or US\$0.7 billion) – calculations with 2012 data by Steer and Smith (2015).

⁸ 80% of the world's poor live in rural areas and 64% work in agriculture. By 2050 there will be almost 90% more people to feed in LICs than in 2015 and 30% more people globally. With current food systems, 815 million people are still not getting the minimum dietary energy needs. This number has increased in recent years due to conflict, droughts, and floods (World Bank Group, 2018). More than 2 billion people are deficient in key vitamins and minerals that are necessary for growth, development, and disease prevention. At the same time 2 billion people are overweight and obese (World Bank Group, 2018).

complementary public infrastructure. The food and agriculture-related UN agencies (FAO/IFAD/WFP, 2015) estimate that ending poverty and hunger requires additional financing in agriculture and rural development of US\$140 billion per year. Of this US\$140 billion, US\$50 billion per year is needed from the private sector, primarily in on-farm and agro-processing investments and US\$90 billion per year is needed from the public sector for public goods such as agricultural research and rural infrastructure of a public nature that is economically justified. This is more or less the same amount as the estimation of SDSN (2015). That study shows that the annually incremental investment needs of the agrifood sector are approximately US\$148 billion to achieve the SDGs. That is US\$67 billion for LICs and US\$80 billion for LMICs. The private sector is expected to take 51% of the investment needs, resulting in a public investment gap of annually US\$72 billion (US\$33 billion for LICs and US\$39 billion for LMICs).

Energy

The energy sector accounts for 19% of the total public investment in LICs and LMICs (Gurara et al., 2017). The literature identifies this as a relatively low share and somewhat troubling, since access to electricity is frequently identified as a key constraint to development in LICs and LMICs (Di Bella & Grigoli, 2016). Sustainable Energy for All estimates that annual global investments in energy will need to scale up from roughly US\$400 billion at present to US\$1-1.25 trillion. Of that, US\$40-100 billion annually is needed to achieve universal access to electricity. The International Energy Agency (IEA) estimates (2017) that electricity for all by 2030 would require annual investment of US\$52 billion per year, more than twice the level mobilised under current and planned policies. Of the additional investment, 95% needs to be directed to sub-Saharan Africa. Most of the additional investment in power plants goes to renewables. Detailed geospatial modelling suggests that decentralised systems, led by solar photovoltaic in off-grid systems (23% of total investment for 2030) and mini-grids (48% of total investment for 2030), are the least-cost solution for three-quarters of the additional connections needed in sub-Saharan Africa. For 2013 the IEA calculated that of the total global investment to increase access to energy 97% went to electricity and 3% to cooking fuels. Also 37% of the investment came from developing countries budgets, 33% from multilateral aid channels, 18% from private sector and 12% from bilateral aid.⁹

Investments in the transition to and scaling-up of renewable energy is key for future development, but current investment are not reaching the rural poor in particular. Many investments for access to electricity for the poor (e.g. pico solar systems) and using clean energy for cooking in developing countries come from non-governmental organisations (NGOs) and increasingly from social entrepreneurs using new business models. However, scaling remains a challenge.¹⁰ Developing countries have a challenging future when it comes to the transformation to renewable because they face financing problems, which usually leads developing countries to maintain old and unfitting financial methods and tools for the renewable energy projects (Donastorg et al., 2017). Furthermore, due to the specific situation of developing countries, it is

⁹ See the IEA website on financing access to energy: <https://www.iea.org/energyaccess/financingenergyaccess/>

¹⁰ For more information on upscaling off-grid pico electricity solutions, see K4D Helpdesk report: Quak, E. (2018). *Lighting and Electricity Services for Off-Grid Populations in sub-Saharan Africa*. K4D Helpdesk Report 317. Brighton, UK: Institute of Development Studies. <https://opendocs.ids.ac.uk/opendocs/handle/123456789/13649>

hard, if not impossible, for the governments alone to accurately evaluate and determine which renewable energy technologies and financing tool are the most appropriate.

SDSN (2015) estimated that the annually incremental investment needs of the energy sector are approximately US\$321-347 billion to achieve the SDGs. That is US\$88-97 billion for LICs and US\$233-250 billion for LMICs. Most of the investment needs are for power infrastructure, in particular in LMICs (estimated at US\$193 billion). The private sector is expected to take on average 50% of the investment needs. However, the private sector will invest mainly in power infrastructure (60% of total needs), while public investments will concentrate more on the needs for access to electricity and clean cooking fuels. The estimated public investment gap in the energy sector is estimated for annually US\$163-172 billion, mainly for LMICs, which account for US\$116-121 billion of the incremental investment needs.

Water and sanitation

Gurara et al. (2017) estimates that the water and sanitation sector counts for 22% of the total public investment in LICs and LMICs. The UN Water GLAAS report (2017) shows that a radical increase in water and sanitation investments is required to finance the SDGs. The current level of WASH (water, sanitation and hygiene) financing is not sufficient to meet SDG targets to achieve universal access to safe and affordable drinking-water, adequate sanitation and hygiene. New sources of finance, and better use of existing sources, are a critical element of the enabling environment. The report also shows that 80% of countries report insufficient financing to meet national WASH targets. That over 50% of countries recognise that household tariffs are insufficient to recover operation and maintenance costs, leading to an increase in disrepair and service failure. While international aid spending on WASH increased from US\$6.3 billion to US\$7.4 billion between 2012 and 2015, future commitments declined from US\$10.4 billion to US\$8.2 billion in the same period. 70% of countries have specific plans to reach low-income communities with WASH. However, only 25% of WASH aid was spent on basic systems, which is a proxy for aid targeted to the unserved, particularly in rural areas.

SDSN (2015) estimated that the annually incremental investment needs of the water and sanitation sector (basic water supply and adequate sanitation) are approximately US\$42-45 billion to achieve the SDGs. That is US\$11 billion for LICs and US\$31-33 billion for LMICs. The private sector is expected to take on between 0-20% of the investment needs. The estimated public investment gap in the water and sanitation sector is estimated for annually US\$36-42 billion, mainly for LMICs, which account for US\$27-31 billion of the incremental investment needs.

Transport infrastructure

The transportation sector accounts for about half of total public investment in economic infrastructure (e.g. Gurara et al., 2017; UNCTAD, 2014). According to McKinsey (2016) global transport infrastructural needs to keep up with projected growth to 2030 requires US\$1.25 trillion a year. However, the world will fall short by roughly 11%, or US\$350 billion a year with the current investment trends. The size of the gap triples if the additional investment required to meet the new SDGs is included. The G20 estimates that roads account for more than half of the US\$15 trillion investment gap in infrastructure through 2040. The private sector is one of the main contributors in advanced economies. Yet, in the developing world, private investors have been less active in roads than in other areas. There have been three times more PPPs in the power sector than in transport. Even when private money does go to transport projects, ports and airports typically claim most of investment. Private investment in roads, on the other hand, has

been declining to a 10-year low, and continues to be highly concentrated in middle-income countries. In fact, LICs concentrate less than 1% of all road projects with private participation.¹¹

SDSN (2015) estimated that the annually incremental investment needs of transport infrastructure are approximately US\$396 billion to achieve the SDGs. That is US\$99 billion for LICs and US\$298 billion for LMICs. The private sector is expected to take between 52-57% of the investment needs. The estimated public investment gap in the energy sector is estimated for annually US\$169-192 billion, mainly for LMICs, which account for US\$127-144 billion of the incremental investment needs.

ICTs and telecommunication infrastructure

Public investment in ICTs count for just 6% of the total for LICs and LMICs (IMF, 2017b). Despite the increasing importance of ICTs for development, international public investors, like Multilateral Development Banks (MDBs) are investing just 1% of their total commitments in ICT projects and between 2012-2016, contribution levels to ICT projects in LMICs were between 1% and 1.4% of total commitments (World Wide Web Foundation, 2018).¹² This is because ICT sector growth is generally seen as an industry driven by the private sector alone. However, as the study of the World Wide Web Foundation (2018) shows, this private sector-led model is showing its limits, as telecoms companies are increasingly less willing to take on the considerable capital requirements required to expand connectivity in the rural and poor areas that need it most.

Another limitation is that in current ICT investments, policy and regulation is very much underrepresented, although it is a critical underpinning of ICT sector growth. Just 4% of the limited MDG investment in ICT projects goes towards policy development, and this proportion of ICT projects dedicated to regulation and policy has been in decline since 2013 (World Wide Web Foundation, 2018). This underinvestment is particularly critical to tackle rapid technological improvements in many LMICs, while these countries are seeing their regulatory frameworks become increasingly out of date, with significant implications for their ability to attract additional investment in the ICT sector (World Wide Web Foundation, 2018).

To achieve universal access, LICs and LMICs would need to bring online over 2 billion new users over the next 10 years to hit a 95% penetration rate (up from around 40% in 2017). Assuming stable private sector investment levels, this translates into an investment gap of around US\$10 billion a year globally. Around 60% of this gap would be tied to the need for expanded infrastructure deployment, with the balance going to interventions designed to foster adoption and usage, around skills building, awareness, and local content. The investment gap is the highest in South East Asia and sub-Saharan Africa. Together these two regions account for

¹¹ The source of this information on private investment in roads is from the World Bank Transport for Development blog, blog post "Maximizing Finance for Safe and Resilient Roads" (27 March 2018) by World Bank Senior Infrastructure specialist Daniel Pulido. <https://blogs.worldbank.org/transport/maximizing-finance-safe-and-resilient-roads>

¹² The IFC is the largest individual contributor to MDB investment in the ICT sector in terms of capital investment volumes; it is also the institution that spends the most in the ICT sector as a proportion of its overall commitments – around 4% of its annual commitment. South East Asia and Sub-Saharan Africa have attracted the majority of MDB commitments to the ICT sector in low- to middle-income countries; these two regions account for around 70% of all cumulative commitments over the 2013-2017 period, and around two times what MDBs spend in all other regions combined (World Wide Web Foundation, 2018).

around 90% of the investment gap that needs to be filled to achieve universal access (World Wide Web Foundation, 2018).

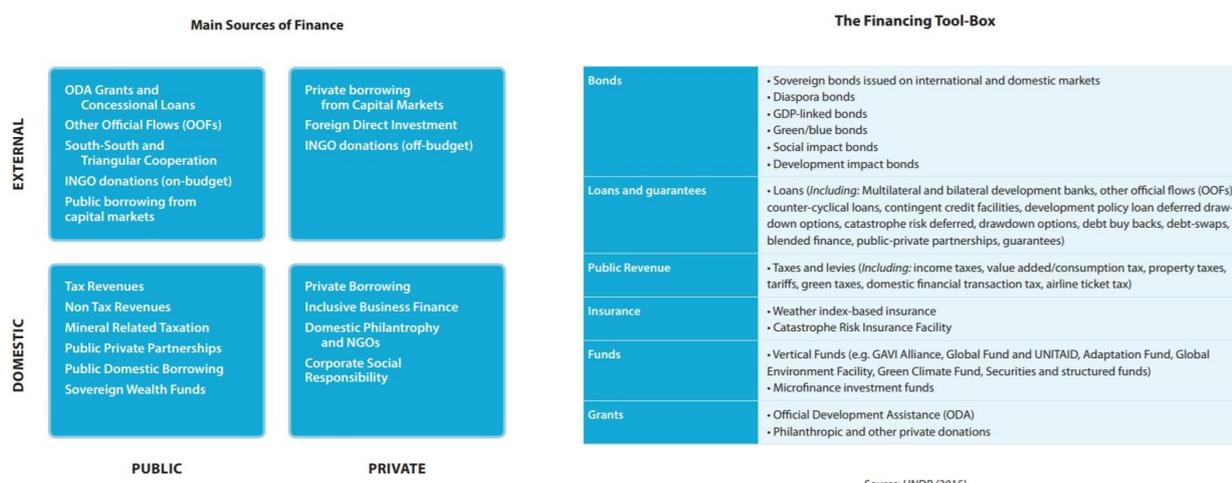
SDSN (2015) estimated that the annually incremental investment needs of telecommunication infrastructure are approximately US\$189 billion to achieve the SDGs. That is US\$47 billion for LICs and US\$142 billion for LMICs. The private sector is expected to invest the largest part of this between 54-86% of the investment needs. The estimated public investment gap in the energy sector is estimated for annually US\$26-87 billion, mainly for LMICs, which account for US\$20-65 billion of the incremental investment needs.

4. The role of governments: fiscal policy, investment management and PPPs

Governments can act in three ways (World Bank/IMF, 2015). Firstly, “additional” finance provides more money for development, generating a distinctly new flow of funds. Domestic resource mobilisation can increase significantly leaving an estimated external financing gap of approximately US\$152-163 billion per year that must be met through international public finance, including ODA (SDSN, 2015, p.1). Most of this annual investment gap after maximising domestic resource mobilisation will go to LICs, as LMICs have the potential to self-finance the achievement of the SDGs, perhaps requiring some international public co-financing during the early years of SDG implementation (SDSN, 2015).

Secondly, governments in developing countries can make use of “efficient” financial mechanisms, adding value by reducing risks and improving financial characteristics of a programme rather than raising new funds. Thirdly, “effective” mechanisms are designed to increase purchasing power of available funds by incorporating incentive structures that enhance accountability and ownership. This report will below focus on three channels to increase and improve public investment: increasing revenues through fiscal policy, efficient public investment management, and improving and stimulating PPPs (see for more options figure 6).

Figure 6. Multiple financial tools for finance (source: UNDP, 2018)



Fiscal policy

There is a long history and a large amount of literature focusing on the international aspects of taxation, looking at corporate profit shifting and the role of tax havens, and often suggesting that international issues are the most important factor holding back domestic resource mobilisation.¹³ However, recently there is an increase in the estimates of the potential gains from domestic measures such as property tax, personal income tax, VAT, and tobacco taxes (World Bank/IMF, 2015).

Forstater (2018) finds that while action on cross-border taxation could yield additional tax take in the region of 1% of GDP, in many countries measures targeting the domestic tax base might deliver something in the region of 9% of GDP. The main enabler is political commitment. The Platform for the Collaboration of Tax mentioned during its conference on “Tax and the SDGs” at the UN Headquarters (February 2018) that raising tax revenue of at least 15% of developing countries’ GDP is necessary to be able to provide basic services, such as better road infrastructure and health care. Presently, in almost 30 of the 75 poorest countries, tax revenues are below the 15% threshold.¹⁴ At the same time, more advanced economies need to pay greater attention to spill-overs from their tax policies and step up their support for stronger tax systems in developing countries (IMF, 2015).

Improving accountability from governments to citizens is pivotal to succeed as new, more effective ways to increase tax collection and reforms of the tax system go hand in hand (Forstater, 2018, p.11). The literature mentions several ways to increase domestic tax base: VAT, property tax, tax on tobacco and alcohol, personal income tax on the rich (Moore & Prichard, 2017). But also important is more effective use of tax credits, exemptions, and rate reductions in particular for large investors and high income consumers (IMF, 2015). Moore and Prichard (2017) also highlight the importance of cooperation between government agencies in their roles as direct tax payers, tax collection intermediaries and as clients and procurers.

Investment management

Making public investments more effective is another way of handling the investment gap by making better decisions and managing investment projects better. The IMF (2018) found that public investment remains a top priority for governments to support growth. However, the average developing country loses about 30% of the value of its investment to inefficiencies in its public investment processes (IMF, 2018). Improvements in infrastructure governance can help countries close up to two-thirds of that “efficiency gap.” The growth dividend from doing so can be large: the most efficient investors get twice the growth “bang” for their investment “buck” than the least efficient investors.

The World Bank and IMF play a critical role in improving capacity on investment management through their Diagnostic Framework and Public Investment Management Assessments (PIMAs) for infrastructure governance respectively, which look over the full investment cycle and support

¹³ For more information on international tax issues, see also K4D Helpdesk report: Quak, E. (2018). *The Impact of International Tax Competition on Low and Middle-Income Countries*. K4D Helpdesk Report. Brighton, UK: Institute of Development Studies. <https://opendocs.ids.ac.uk/opendocs/handle/123456789/13784>

¹⁴ See for more information: <https://www.un.org/development/desa/en/news/financing/tax4dev.html>

economic institution building in this area.¹⁵ The Overseas Development Institute (ODI) report (2017) shows that there is a shift of focus towards seeing PIM as a subset of budgetary institutions. This risks diverting focus away from critical downstream processes that can affect the value for money achieved by investment spending. Secondly, there has been a move towards developing standardised indicators to be used as part of a diagnostic framework. These are likely to have an impact on incentives for reforms.

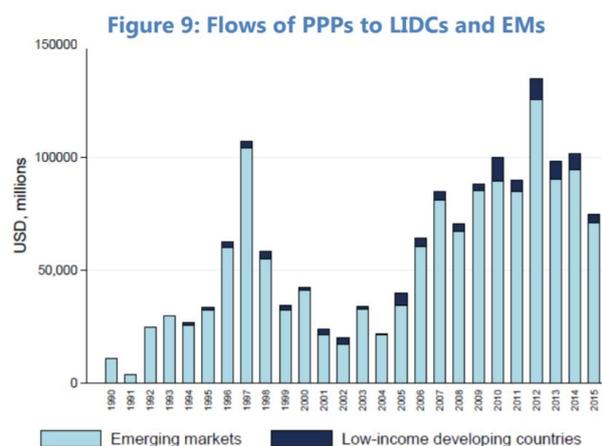
The IMF (2018) PIMA review and update shows that countries scored the highest in terms of budget unity, budget comprehensiveness, and national planning—all of which belong to the planning and allocation stages. The weakest design of PIM institutions was found in the allocation and implementation stages (notably: project appraisal, selection, and management, as well as asset monitoring). For example, in Togo, the government has committed to end the problematic practice of pre-financing pointed out by the PIMA. In the Kyrgyz Republic, the government has issued a decree to formalise gate keeping roles of the Ministry of Economy on evaluation, including economic assessment and project efficiency, and the Ministry of Finance on financing. In Côte d'Ivoire, the government is developing the PPP database to include the main PPP projects to better manage fiscal risks. The 2018 review and update also mentions that PIMA assessments helped to prioritise follow-up capacity development activities. For example, Mauritius, Burkina Faso, Côte d'Ivoire, Ghana, Liberia, Mali, Mongolia, and Ukraine, among other countries, requested follow-up capacity development to address specific weaknesses identified in their respective PIMAs.

Public Private Partnerships

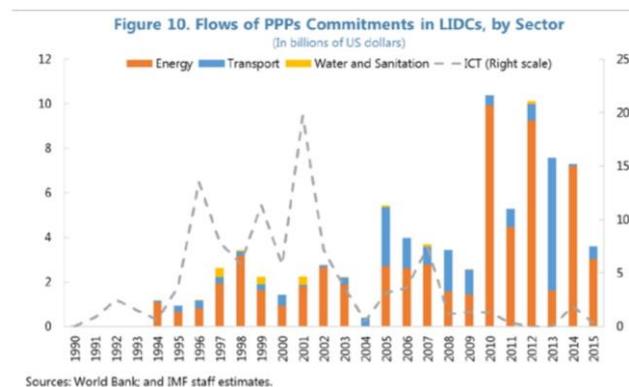
The final way governments can tackle the investment gap is through PPPs, in which public investment and private investment go hand in hand, mostly by governments giving guarantees to reduce risks for the private investor, while the government in turn would not have to pay the full sum for a certain public investment project (if the project is well managed). Private participation in infrastructure investment is quite limited in LIDCs, and focuses mainly on emerging markets (Gurara et al., 2017, p.12). Since 2000, LIDCs accounted for 6.5% of the value and 10.5% of the number of PPP projects in all emerging market and developing economies (see figure 6). In the last five years PPP volume amounted on average to about 0.4% of LIDC GDP, a ratio similar to emerging markets.

¹⁵ The World Bank diagnostic framework for public investment was initially structured around the life cycle of an asset. It explored what it might take for any country's PIM system to function effectively: that is to say, first, to select good projects for public funding and, second, once they are selected, to implement and operate investments effectively. The IMF PIMA framework was first introduced in the 2015 Board Paper on *"Making Public Investment More Efficient,"* as part of the IMF's Infrastructure Policy Support Initiative (IPSI). PIMAs offer rigorous assessment of infrastructure governance, that is, the key public investment management (PIM) institutions and processes of a country. PIMAs are an integral part of the IMF's Infrastructure Policy Support Initiative (IPSI). IPSI aims to consolidate ongoing efforts to increase the efficiency of public investment, including by pulling together tools used in the assessment of options for scaling up such spending. IMF surveillance and Capacity Development provision are particularly closely integrated and several IPSI tools have been used (source: ODI, 2017).

Figure 6. Flows of PPPs (source: Gurara et al., 2017).



Source: World Bank's PPI database



Sources: World Bank; and IMF staff estimates.

The World Bank's PPI database records total investment in infrastructure projects with private participation (but not purely private investment). Investment commitments include expenditures on facility expansion, divestiture revenues, and license or concession fees. After a sharp acceleration in the early 2010s, PPP flows have declined in the most recent years. Of the US\$43 billion in LIDC PPP projects since 2010, more than half has been invested in Asia and one third in sub-Saharan Africa. Vietnam and Bangladesh have the largest number of projects, while Lao PDR is leader in terms of volume (Gurara et al., 2017). PPPs have also been used to finance regional projects. Across Africa there are several examples of regional infrastructure projects, especially in the energy and transport sectors (UNCTAD, 2016). For instance, the Central Corridor is an integrated transport program across five countries (Burundi, DR Congo, Rwanda, Tanzania, and Uganda) with an investment of about US\$18 billion involving local and international actors from the public and private sectors (WEF, 2015).

Private participation in ICTs/telecom was initially high in the 1990s and start of the 2000s, but has ultimately moved toward mostly purely private provision (particularly for mobile services), with the government's role limited to regulation and licensing. There is very little purely private provision of infrastructure services outside the telecom sector and private sector involvement is channelled predominantly via PPPs. Currently, the energy sector attracts the bulk of PPPs, with transportation a distant second, and a small share allocated to water and sanitation.

Multilateral development banks (MDBs) are involved in a significant share of PPPs to provide operational assistance, financial support and risk mitigation (World Bank, 2016). More than a quarter of the projects in LIDCs involve MDB support in the form of direct loans, syndication, equity investment, partial credit guarantees, and political risk coverage. The presence of MDBs is associated with a lower probability that a project comes under distress or is cancelled, even after controlling for a set of project-specific variables and for year and country fixed effects. This likely reflects a combination of careful project selection by MDBs and the impact that MDB involvement—through a thorough preparation and a strengthened oversight—has on the quality of the project (Jandhyala, 2016).

Finally, the IMF (2018) review and update of PIMAs concludes that Management of PPPs within PIMs is equally important as for fully public investments. To ensure that PPPs are well-managed and do not expose the government to excessive risks, 72% of PIMAs recommended to integrate

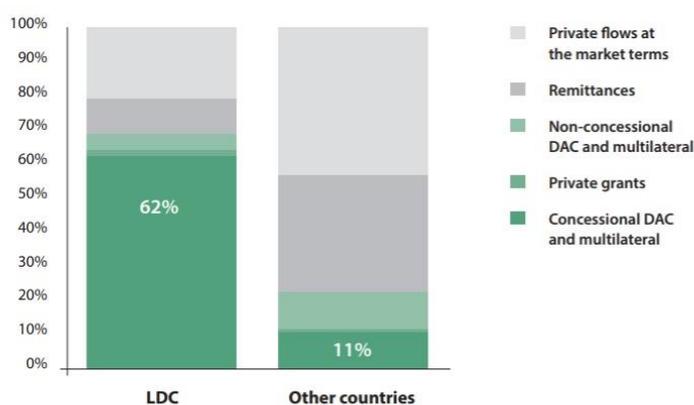
PPPs into the overall PIM framework, and improve the budgeting, accounting and reporting of PPP operations, including long-term commitments and contingent liabilities.

5. The need for external finance and assistance

SDSN (2015) estimates that approximately additional US\$820 billion has to be invested annually to achieve development and sustainability goals in LICs and LMICs through the public sector: US\$220 billion for LICs (27% of GDP) and US\$600 for LMICs (5.5% of GDP). Regarding the smaller percentage of GDP for LMICs and through domestic revenue mobilisation efforts it is possible that LMICs can finance the investment needs themselves. However, LICs cannot meet the investment needs on their own and may require some US\$152-163 billion in international public co-financing. This corresponds to 0.1-0.16% of estimated average world GDP over the period to 2030 or 0.22-0.26% of high-income countries' estimated GDP averaged over the period. It is plausible, though, that this financing gap can be met through concessional international public finance, including promised volumes of ODA (SDSN, 2015).

Figure 7. Composition of External Finance in the Least Developed Countries (LDCs) versus other developing countries (source: UNDP, 2018)

Composition of External Finance in the LDC versus other Developing Countries



Source: OECD (2016)

Additional expected private foreign investment and capital flows already have been deducted within these calculations. The literature shows that pushing for much more foreign private investment has also constraints and difficulties, for example related to Foreign Direct Investment (FDI). FDI's sustainable development benefits are not uniform. Investments are increasingly being made in real estate versus manufacturing or research and development, and FDI may not be environmentally responsible (UNDP, 2018). Depending too much on the use of bond and commercial bank debt also carries risks. Governments can often find it difficult to extend maturities beyond a few years, leaving them vulnerable to refinancing risk (especially in economic downturns) (UNDP, 2018). Sustainable finance initiatives meanwhile remain far from mainstream. Directing more private financial flows to sustainable development therefore remains a considerable challenge (UNEP, 2016).

Therefore, developing countries still depend on additional external finance and assistance. ODA has increased in volume terms over recent years, however, very few donors meet the

longstanding commitment to allocate at least 0.7% of their GNI to ODA (just 5 countries in 2016), and prospects for large increases in aid are not optimistic due to fiscal pressures in some high-income donor countries and a weak political commitment to ODA (UN, 2015). Moreover, aid remains heavily concentrated in just a few countries. This is combined with pressure to allocate larger shares of ODA to climate/environment related interventions, humanitarian interventions and on hosting refugees in donor countries in line with rising need in these areas. Some OECD DAC donors are also providing larger shares of their ODA as loans, especially for middle-income countries prompted by renewed or improved creditworthiness in many countries. While increases in finance from South South providers is welcome, transparency in their activities is emerging as an increasingly important issue (UNDP, 2018).

Multilateral Development Banks

MDBs have made a significant contribution to infrastructure development around the world, through their own direct investments, a coalescing of government and private sector capabilities to implement large-scale projects, and by supporting governments to develop policies that attract and enable private sector investment (UNCTAD, 2018). Between 2012 and 2016, MDBs have committed a cumulative US\$525 billion to funding development projects in low- to middle-income countries worldwide. MDB commitments to development projects now average around US\$100–US\$120 billion annually, to help finance 1100 to 1400 projects every year (World Wide Web Foundation, 2018).

A limiting factor, however, has been MDBs' conservative loan approach and narrow capital base, which constrain their ability to scale up lending significantly (UNCTAD, 2018). Since the prospect of significant capital expansion is not on the agenda of developed country governments in the near future, development banks have been exploring alternative ways to enhance their lending capacity. Overall, financing from the MDBs has not been sufficient to meet the needs of developing countries. In particular, MDBs shifted significantly away from financing infrastructure over the past few decades (e.g. Griffith-Jones et al., 2016, p.7–8; Humphrey 2015, p.3–4; Chin, 2014, p.367–370).

The UNCTAD report (2018) shows that MDBs can play a critical role not only in providing financing for infrastructure directly, but also as market makers, by creating and providing financing instruments that better share risks between creditors and borrowers, and over time. They can also help mitigate informational deficiencies facing the private sector by providing screening, evaluating and monitoring functions and, where needed, their own capital resources, thus partnering with private investors in co-financing. MDBs, in addition, can help address the need for low-income countries to have access to loans for financing infrastructure projects at subsidised rates.

Bhattacharya et al (2018) emphasise that MDBs should in particular look to fragile and conflict/violence affected states (FCVs) as they have the experience to support institutional development in these countries. Areas such as public administration reform, public utility management, and oversight of the security sector are ripe for new, innovative approaches by the MDBs and their partners. Other countries that should be prioritised by MDBs according to Bhattacharya et al (2018) are high-debt countries. MDBs are in the right position to strengthen debt management capacity in borrowing countries. They should also review how the quality of public investment, the track records of policy reforms, and availability and use of policy space affect debt sustainability assessments. They should develop principles and procedures for debt restructuring that reflect the increasingly complex nature of the creditor community. Furthermore,

MDBs should not side-line upper middle-income countries, in particular at sub-national level and regarding public good for these countries. Although LICs and some LMICs need additional external finance, MDBs (but also National Development Banks and bilateral aid) should provide emerging markets with financial support and assistance for projects for which the government might be reluctant to borrow (UNCTAD, 2018).

New players

In recent years, several countries have taken steps to launch two new multilateral development banks. First, Brazil, Russia, India, China, and South Africa (the BRICS countries) signed an agreement in July 2014 to establish the New Development Bank (NDB). The agreement outlines the bylaws of the bank and a commitment to a capital base of US\$100 billion. Headquartered in Shanghai, the NDB was formally launched in July 2015. The BRICS leaders have emphasized that the bank's mission is to mobilise resources for infrastructure and sustainable development projects in BRICS and other emerging and developing economies.

Second, China has led the creation of the Asian Infrastructure Investment Bank (AIIB). Launched in October 2014, the AIIB focuses on the development of infrastructure and other sectors in Asia, including energy and power, transportation and telecommunications, rural infrastructure and agriculture development, water supply and sanitation, environmental protection, urban development, and logistics. The AIIB currently has 66 members, and 21 prospective members. Members include several advanced European and Asian economies, such as France, Germany, Italy, the United Kingdom, Australia, New Zealand, and South Korea. The AIIB's initial total capital is expected to be US\$100 billion.

Nelson (2018) shows that proponents of the new MDBs argue that the infrastructure and financing needs of developing countries are beyond what can be met by existing MDBs and private capital markets, and that new institutions to meet the financing needs of developing institutions should be welcomed. Other analysts and policymakers have been more concerned about what the new MDBs could mean for the existing institutions and whether they will diminish the influence of existing institutions. They point to an already crowded landscape of MDBs, and express concerns that new MDBs could exacerbate existing concerns about mission creep and lack of clear division of labour among the MDBs (UNCTAD, 2018).

Multiple financial tools

The ways in which resources are both mobilised and spent have become increasingly 'innovative' and diversified. This has been supported in turn by innovations in technology that have led to the financialisation of 'real' markets, increased interdependence/integration of financial markets, the introduction of new crypto-currencies, and facilitated access to financial markets by previously excluded people (e.g. via mobile and smartphone technology) (UNDP, 2018). Collaborations between public and private actors to deliver sustainable development outcomes have also become commonplace. Innovations in financing involve innovations in the way resources are both mobilised as well as delivered. UNDP (2018) uses the term "financing tool-box" to describe this increased diversity. Some examples of innovations in resource mobilisation include: green bonds, Islamic Zakat, diaspora funding, crowdfunding, impact bonds. Examples of innovations in resource delivery include: countercyclical loans, GDP indexed loans, guarantees for development, insurance schemes against weather damage, vertical funds.

While this diversity has many positive aspects, a (perhaps unintended) consequence is a dramatic increase in complexity; countries are tasked with the challenge of identifying which

funds are appropriate for them and are currently capitalised, which they are eligible for, how to access resources, how to blend them to support transformative change and how to develop cost effective methods to apply for, monitor and evaluate results (UNCTAD, 2018; UNDP, 2018). This is a particular problem in relation to climate finance and has meant that many of the countries most vulnerable to climate change (e.g. small islands and least developed countries) have found it difficult to access this financing (due to limited capacities). Many rely on the support provided by development partners such as UNDP and others to help them in this effort. External assistance and capacity building remain more important to make efficient use of external funding.

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