Longer Term Investments

Emerging market infrastructure – update

Chief Investment Office GWM | **10 September 2019** 11:04 am BST
Carl Berrisford, Analyst

- Growing urbanization and the expansion of megacities in emerging markets are driving demand for infrastructure investment. Emerging markets are forecast to account for almost two-thirds of global infrastructure spending by 2025.
- Emerging markets are generally in better fiscal shape than developed ones for expanding their infrastructure despite ongoing pressures. There is evidence of growth in private and foreign direct investment in economies with a historically lower share of public infrastructure investment.
- We recommend gaining diversified exposure and focusing on the MSCI Emerging Markets Transportation Infrastructure Index. It is geographically diverse, has a low correlation to US dollar trends and has an excellent record of outperforming broader emerging market infrastructure indexes.

Our view

Growth in infrastructure investments will outpace broader GDP growth in emerging markets over the next decade, in our view. We also think emerging markets will become the engine of global infrastructure expansion, especially as the developed market (DM) share of global spending is forecast to fall from one-half to one-third over the next 10 years. Rising urban migration and the continued expansion of megacities in emerging markets are boosting demand for infrastructure investment.

In many countries, inadequate urban and nationwide infrastructure is holding back economic growth. Pressure to improve and upgrade infrastructure is also coming from another direction: emerging markets are increasingly competing with one another to attract foreign direct investment, forcing investments in trade and transport networks to raise their export competitiveness and productivity. In our view, this is a key reason why overall infrastructure investment continues to expand in emerging markets despite pressure on government finances from weaker currencies and volatile oil and commodity revenues.

Emerging countries are also increasingly being targeted to host major international events. Examples include the 2008 Olympic Games in China, the 2010 FIFA World Cup in South Africa and the 2016 Olympic Games in Brazil. More recently, Russia hosted the 2018 FIFA World Cup tournament and Qatar will host it in 2022. Such events can be important catalysts for infrastructure spending.

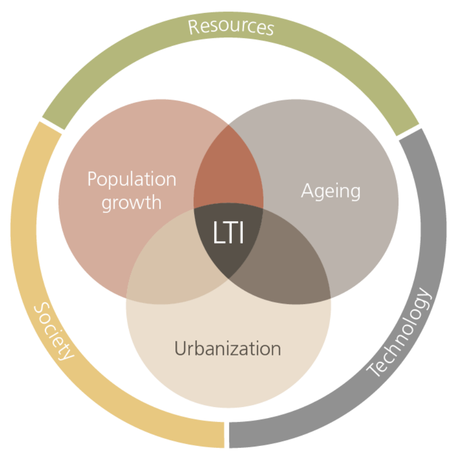
Introduction to the Longer Term Investments (LTI) series

– **The Longer Term Investments (LTI)** series contains thematic investment ideas based on long term structural developments.

– Secular trends such as population growth, ageing, and increased urbanization create a variety of longer term investment opportunities.

– These investment opportunities are influenced by the interplay of technological advancement, resource scarcity, and the societal changes.

– Investors willing to invest over multiple business cycles can benefit from potential mispricings created by the typically shorter term focus of stock markets.



This report merges the previously separate Long term investment theme Mass Transit Rail into Emerging markets infrastructure. A separate LTI theme for Mass Transit Rail will no longer exist.

Emerging markets will account for two-thirds of spending by 2025

We forecast emerging market (EM) infrastructure spending will rise from USD 3trn in 2015 to around USD 5.5trn by 2025, raising its share of total global spending on the sector to around two-thirds from one-half currently. Our forecast translates into a compound annual growth rate (CAGR) of 6.3%, which outpaces our 4.9% EM GDP growth forecast over the same period. A key trend we see is a shift in spending from west to east, with emerging Asia to contribute close to 50% of global infrastructure spending by 2025. According to the Asian Development Bank, the region needs to invest an annual USD 1.7trn in infrastructure from 2016 to 2030 to remain competitive.

Meanwhile, the World Economic Forum's competitiveness survey reveals the rivalry among emerging markets which ultimately drives infrastructure investment. The sharp decline in Thailand's competitive ranking over the last decade has driven the government to launch the Eastern Economic Corridor (EEC), a project aimed at developing port, aviation and railway infrastructure on its eastern sea board. Over the last decade, Indonesia, Poland and the Philippines have climbed the most in the rankings, while Egypt, Greece and South Africa have witnessed the biggest fall in competitiveness.

In terms of transportation infrastructure, for example, emerging markets still lag developed ones in railway and aviation infrastructure. Despite their large populations, emerging Asia and Latin America are fall far behind developed countries in rail lines per kilometer. Aviation infrastructure in EMs, measured by registered airline carrier departures, greatly lags developed markets (DMs), particularly in Latin America (see Fig. 2). Port infrastructure is the only segment where EMs have a superior capacity versus DMs, as measured by container traffic, although this is almost exclusively derived from Asian ports.

Urbanization and inefficiencies

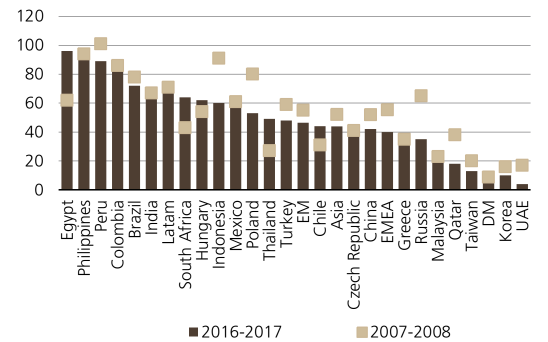
Urban migration is a key growth driver

According to the United Nations, less developed countries' share of population living in urban areas rose from 35% in 1990 to 50.6% in 2018, and will reach 66% by 2050. The UN also forecasts less developed country urban population growth of 25% in the decade 2015–2025, with Chinese and Indian cities alone set to receive 181m and 113m urban migrants, respectively. Similar trends are evident in Mexico, Turkey and South Africa. Rising urbanization is fueling the expansion of megacities (those with more than 10m inhabitants) with high population densities, especially in Asia. The UN forecasts that Asia and Africa will fuel the growth of megacities. Twenty two of the existing 33 global megacities are in Asia and Africa, and nine of the 10 new megacities forecast by 2030 will be in these regions, according to the UN.

EM infrastructure spending is being fueled by urban migration, which strains public transportation, water supplies and sanitation services, and creates demand for affordable housing and utilities.

Fig. 1: World Economic Forum competitiveness rankings

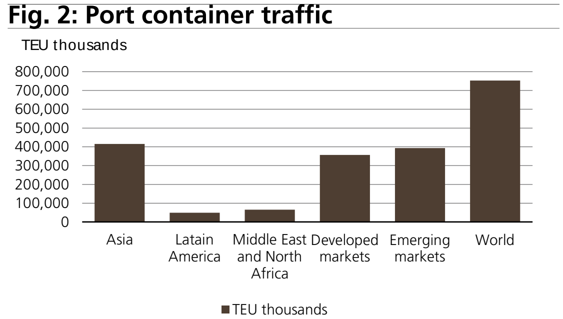
Lower score implies higher ranking



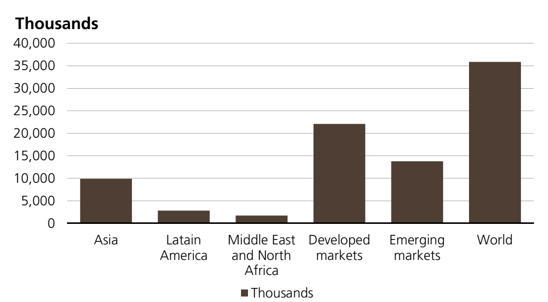
Note: EM = emerging markets, DM = developed markets

Source: The Global Competitiveness Report, 2017–18 World Economic Forum, UBS, as of August 2019

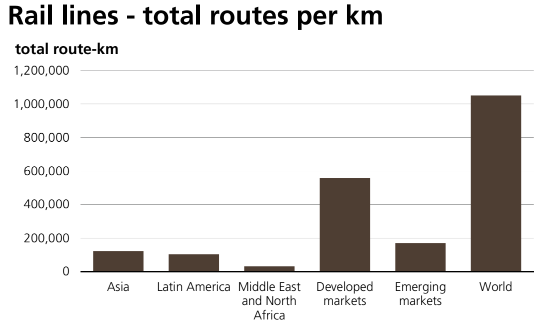
Fig. 2: Port container traffic



Registered airline carrier departures worldwide



Rail lines - total routes per km



Source: World Development Indicators (2016–2017), World Economic Forum, UBS, as of August 2019

As megacities become key to national economic growth, infrastructure bottlenecks can hamper the domestic economy if they are not addressed through adequate investment.

Income growth correlates to car ownership and aviation services

Income growth driven by urbanization raises demand for transportation infrastructure through the consumption of goods like cars (see Fig. 4) and services like travel and aviation. The sharp rise in EM car ownership has fueled road infrastructure build-out – a trend that should continue given that emerging markets substantially lag developed markets in terms of car ownership (despite recent dynamic growth).

The International Monetary Fund forecasts EM GDP growth of 4.9% over the next five years, more than double the rate of developed market growth. For emerging markets, a rise in per capita income translates into higher demand for cars than it does in developed markets and should reflect in EM car ownership growth. We also see a similar high correlation between income growth and air travel, which is boosting growth for EM aviation infrastructure worldwide.

Logistic efficiencies and competitiveness

Despite recent protectionist trends, a decade of globalization has successfully lowered trade barriers and driven the creation of EM free-trade partnerships, such as the Regional Comprehensive Economic Partnership (RCEP) and the ASEAN Economic Community (AEC). These agreements force emerging economies to be more competitive or risk losing their share of export trade to their peers. The World Bank's Logistic Performance Index gives a broad comparison of the quality of trade and transport, reflecting the respective markets' competitiveness. The emerging markets are ranked at an average of 55 versus developed markets' 14, indicating they have plenty of room to improve.

Inadequate infrastructure leads to high logistic costs and cries out for investment. Russia, Brazil and Mexico display low efficiency relative to income, especially when compared to their Asian peers. That said, there is plenty of room for all emerging economies to improve relative to the US, Japan and the UK. Emerging markets still face several hurdles in terms of trade openness, as most of them have higher export and import costs than developed markets (see Fig. 6). There is still scope to improve in countries like India, Brazil, and even China, notwithstanding its historical infrastructure investment.

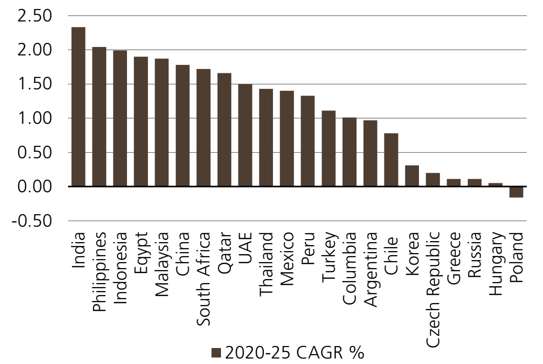
Infrastructure spending

EMs' public finances often in better shape than DMs'

Infrastructure spending in emerging markets has largely been government-driven, although private participation has grown since bottoming in 2016. Despite suffering fiscal deficits, most emerging economies are often better positioned than developed economies to finance infrastructure spending due to superior growth prospects, with the IMF forecasting average five-year GDP growth of 4.9% for EM economies and 1.75% for DM economies (see Fig. 8).

Fig. 3: Urbanization

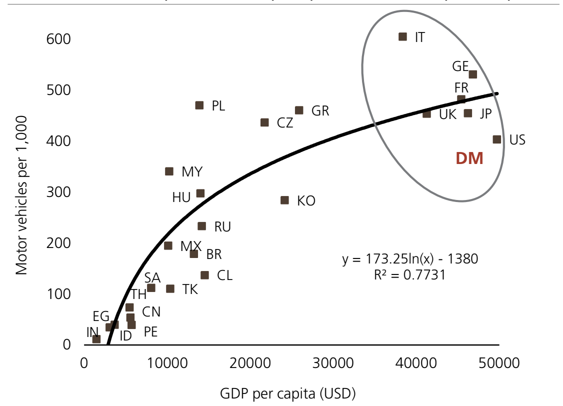
Forecast annual urban population growth 2020–25



Source: United Nations World Urbanization Prospects (2018 revision), UBS, as of August 2019

Fig. 4: Car ownership and GDP per capita

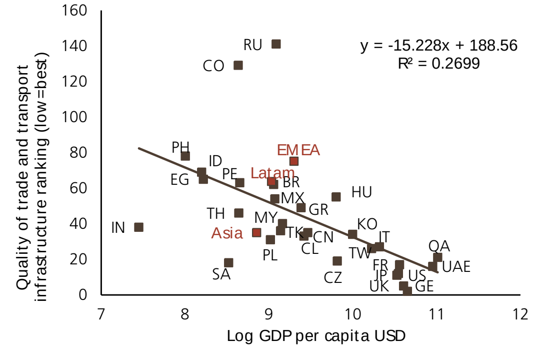
Motor vehicles per 1,000 people and GDP per capita



Source: World Bank World Development Indicators, UBS, as of August 2019

Fig. 5: Logistics performance index and GDP

Log of GDP per capita (USD) and quality of trade transport infrastructure ranking



Source: Logistics Performance Index World Bank (World Economic Outlook IMF, 2019, UBS

For countries with weak fiscal balances like Brazil, we anticipate a rising share of private infrastructure investment.

Private infrastructure investment shows recovery from 2016 low

According to the World Bank's Private Participation in Infrastructure database, private investment commitments in energy, transport information and communication technologies (ICT), and water infrastructure in low and middle income countries totaled USD 90bn across 41 countries in 2018. Although this is a 3% decline from 2017 levels, it shows a 27% recovery from the decade-low of USD 71bn in 2016.

EM share of foreign direct investment (FDI) inflows up sharply

According to UNCTAD, despite a 23% slump in global FDI inflows in 2017, FDI into developing economies remained at similar levels to 2016 although in some regions such as Latin America it experienced single-digit growth. As a result, developing economies' share of global FDI rose to 47%, close to half the global total, compared to just 36% in 2016. This trend is likely to continue, in our view, for a number of reasons: 1) a shift in global supply chains towards other developing economies and away from China, as a result of the US-China trade dispute triggering a new round of FDI into low cost skilled labor markets; 2) current infrastructure investments have attractive long-term returns relative to history due to current low inflation and low interest rates which have fallen to zero in many parts of the world; and 3) rivalry between China and Japan to secure energy and natural resources continues to drive their ODI (overseas direct investment) into infrastructure in Southeast Asia, Africa and Latin America. In 2013, China launched an infrastructure investment initiative – Belt and Road Initiative – focused on establishing connectivity with countries on its western borders.

Asia

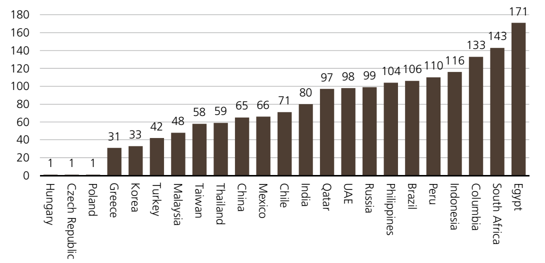
China: Infrastructure spending to grow 4% per year between 2021-25

China's fixed asset investment in infrastructure has grown at a double-digit CAGR in the last decade although it has significantly slowed in recent years as the government attempts to deleverage. We forecast fixed asset infrastructure to grow by an annual 4% (2021–2025). About two-thirds of China's population will live in cities in 10 years' time, compared to around 50% currently, making urbanization the major driver of fixed asset investment.

One striking aspect of China's urbanization is car ownership, which is doubling every two to three years in first-tier cities. One consequence of this is the government's heavy investment in carbon-emission reduction and water-pollution controls. This makes "environmental infrastructure" the fastest growth segment of fixed asset investment which we forecast will grow 21% annually over the same five-year period. Publicly listed exposure to this segment is currently largely limited to electric vehicles and clean energy.

Fig. 6: EM openness to trade

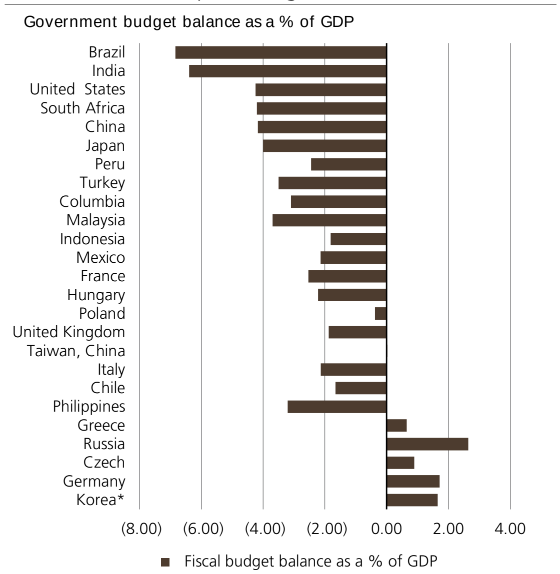
Ranking for trading across borders (lower is better)



Source: World Bank Doing Business Indicators, UBS, 2019

Fig. 7: Fiscal EM balances in line with DM ones

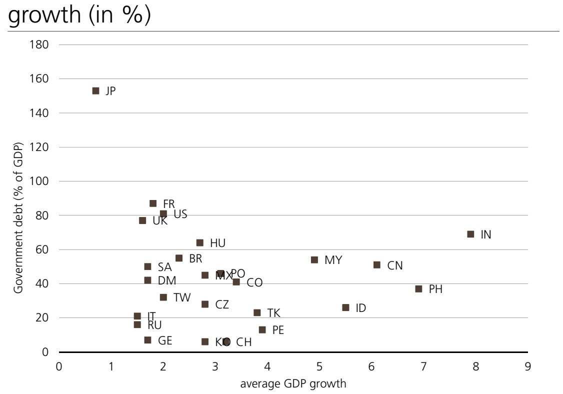
Fiscal balance as a percentage of GDP



Source: Haver, CEIC, National Statistics, as of August 2019

Fig. 8: Most EMs expected to lower debt and raise expected GDP growth in next five years

Government debt (% of GDP) and average GDP growth (in %)

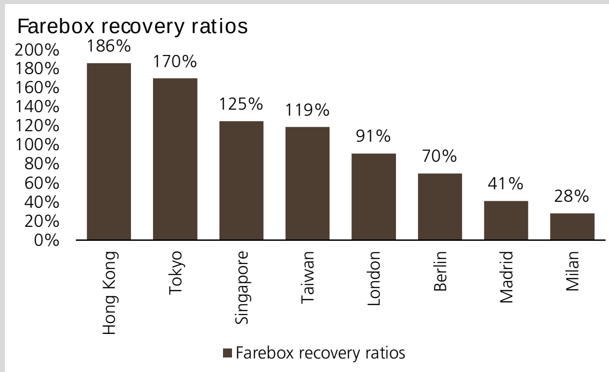


Source: World Economic Outlook, IMF , UBS, as of August 2019

Mass Transit Rail

Mass transit rail (MTR) systems have emerged as a preferred solution to resolve grid locked traffic and air pollution arising from rising car ownership and infrastructure underinvestment in Asia's megacities. Asian MTR fare-box recovery ratios (the share of operating expenses met by passenger fares) are the highest in the world, making them highly cost-effective largely because they operate in high population density cities. Economies of scale are reflected in their high annual ridership. Six of the ten leading mass transit systems globally measured by ridership, are in Asian cities (see Fig. 9). Rapid capital appreciation of land in Asian capital cities also boosts profitability with Asia home to seven of the world's 20 most expensive cities. Asian mass transit companies have capitalized on rapid land price appreciation to recover project capital costs through "value capture" the sale of land whose value appreciates as a result of MTR connectivity. This business model has been especially successful for Hong Kong's MTR Corporation and Singapore's SMRT, and is being emulated in greenfield MTR systems in other Asian cities. Asian investment in MTR systems will run into hundreds of billions over the next two decades.

Due to the trends mentioned earlier, world development banks are forecast to spend USD 175bn on sustainable transport systems in emerging markets alone over the next 10 years, according to consultants Roland Berger. Aside from China, India, Thailand, Malaysia, Indonesia, and the Philippines, several frontier markets such as Vietnam and Pakistan are also building MTRs for their capital cities. Due to high capital costs, Asian governments have tended to bear MTR investment costs, often with subsidized funding. Private companies have benefited at the level of project delivery, engineering, and construction. MTR operating companies have frequently been spun off and privatized; several key ones in Asia are publicly listed.



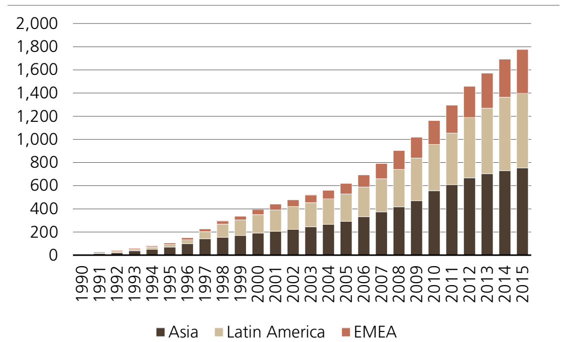
Source: Company reports, UBS, as of August 2019

Belt and Road Initiative

The "Belt and Road Initiative (BRI)" is a Chinese government overseas-investment program seeking to develop the historic Silk Road trade route that ran from western China through Central Asia to Eastern Europe. The strategy involves investing in and financing infrastructure in over 60 developing economies in exchange for market access for Chinese goods and services. The well-publicized strategy has transformed China into a major catalyst for EM infrastructure investment.

UBS estimates that outward Chinese investment linked to the BRI could reach an aggregate USD 200bn in the next five years, representing annual growth of 28%. BRI-related investments have so far included high-speed trains in Indonesia and energy and port investment in Pakistan. The cancellation of the Trans-Pacific Partnership (TPP) and a more isolationist stance by the US under the Trump administration are creating more investment opportunities for China in Asia and EMs in general. As a result, a Regional Comprehensive Economic Partnership (RCEP) is emerging as a strong contender to replace the TPP. We believe this framework could also become an effective platform for BRI infrastructure investment in member states.

Fig. 9: Total investment projects
in USD bn



Source: World Bank Private Participation in Infrastructure (latest available 2015), UBS, as of 2019

Latin America

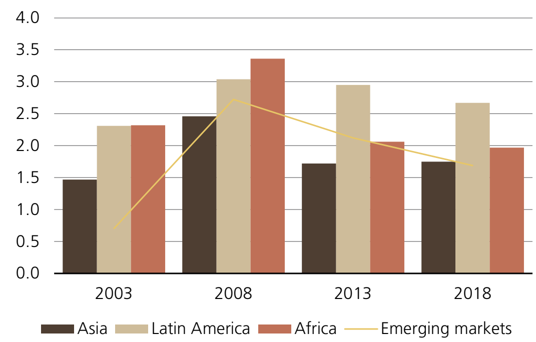
Brazil: Bolsonaro continues infrastructure investment initiatives

Brazil's President Jair Bolsonaro has continued similar infrastructure initiatives to the previous administration's "Projeto Crescer" (Project

Growth), based on public-private partnerships, although the privatizations are now running faster. Year-to-date, the government has privatized around USD 15bn worth of corporations, especially from Petrobas, with an annual privatization target of USD 20bn. Concessions dedicated to logistics, particularly roads, railroads, ports and airports, are also running faster.

Mexico: Airport operators benefit from tourism
Mexico is one of the world's leading tourist destinations. According to Mexico's Ministry of Tourism, the country received 41.4m visitors in 2018, a 5.5% increase over 2017. Inbound tourism has been recovering since the 2008–2009 global financial crisis and the swine-flu outbreak. We are particularly positive on the outlook for Mexican aviation and transportation sectors. Some 60% of Mexico's international passenger traffic is from the US.

Fig. 10: FDI as a percentage of GDP



Source: UNCTAD (2014), UBS, as of 2019

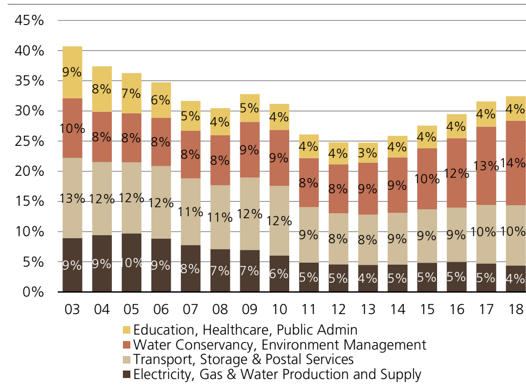
Impact investing and the UN Sustainable Development Goals

Many of the UN's Sustainable Development Goals (SDGs) can't be achieved, in our view, without a significant increase in infrastructure investment in emerging and developing countries. Over 1.3bn people – nearly 20% of the world's population – lack access to electricity; 768m do not have access to clean drinking water, and over 2.5bn lack basic sanitation. This inadequacy of critical infrastructure comes at enormous economic and social costs.

Improving access to infrastructure in developing and emerging markets would go a long way toward alleviating poverty (SDG 1), improving health through access to clean water and sanitation (SDGs 3 and 6), and stimulating economic growth (SDG 9). Specifically:

- Infrastructure investments can generate demand for labor, providing the stimulus that developing economies desperately need. According to a study by the London School of Economics, a USD 1m investment in infrastructure can generate up to 50,000 jobs (annualized) when including indirect employment opportunities.
- Improving access to infrastructure increases the efficiency of manufacturing, agriculture and logistics. This, in turn, can boost productivity and competitiveness, fostering domestic growth.
- Of the forecast increase in emissions from developing countries, 70% is expected to come from infrastructure yet to be built. As costs for critical green technologies – from solar power to clean transport – fall, investing in green infrastructure helps ensure long-term sustainable growth. Fig. 12 provides an overview of green infrastructure investment needs by infrastructure type.
- Improved access to water and sanitation would inhibit the spread of water-borne diseases like diarrhea, a leading cause of childhood mortality in developing countries.

Fig. 11: China's fixed asset investment has grown at a CAGR of 21% (2003–2017)
Infrastructure fixed asset investment breakdown (%)



Source: CEIC, UBS, as of August 2019

Infrastructure investment all too often focuses narrowly on meeting immediate social and/or economic needs, while ignoring the need to make what is built sustainable. This can have enormous long-term consequences. Power plants can operate for half a century or more and investments in coal or other fossil-fuel-burning facilities can result in millions of tons of emissions being locked in for decades. Even in the short term, infrastructure investment may harm local wildlife and communities. The construction of large hydropower plants can displace local populations, while improving access to remote areas might result in unsustainable resource exploitation. To have a positive impact, investors in this sector must be aware of – and carefully manage – these risks.

In our view, the critical role that EM infrastructure can play in achieving the SDGs, combined with high growth potential, makes this an attractive investment theme for *impact investors* who seek to achieve a measurable social impact alongside a competitive economic return. Public-private partnerships and other innovative financing models have reduced many of the risks that have traditionally held back investment in this theme. Consequently, an increasing number of fixed income funds have emerged that focus on improving access to infrastructure in developing and emerging countries.

Direct investments in transportation infrastructure (including railroads, highways, airports and port facilities), renewable energy, electric grids, telecommunications, and water and sewage utilities are also possible and could help achieve impact at scale. Direct investors, however, may face challenges when it comes to finding investable opportunities. As with any theme, impact investors seeking to access this theme via non-impact-specific vehicles must assess on their own whether their investments would meet impact criteria, including intent, measurability, verification and additionality.

Link to sustainable investing

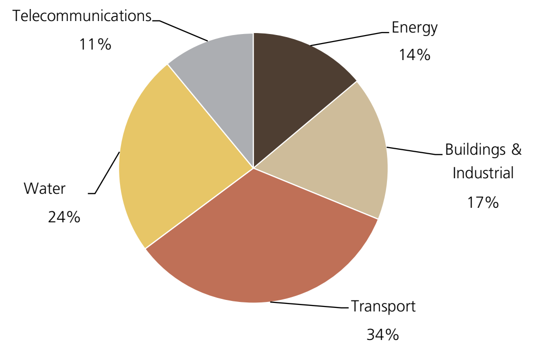
We believe the infrastructure theme is strongly aligned to Sustainable Development Goal (SDG) 9 "Industry, Innovation and Infrastructure," which aims at developing sustainable and resilient infrastructure to support economic development and human well-being, upgrading infrastructure to make it more resource-use efficient with the help of clean technologies, and facilitating it in developing countries. For this reason, it is important to scrutinize whether companies active in these areas manage their potential negative social and environmental impact appropriately during construction and use phase.

To do so, we look at policies and programs for minimizing and managing impact on local communities and ecosystems, restoring habitats or offsetting hazardous activities; health and safety management systems; and effective anti-corruption policies and programs.

Sustainable investment opportunities in liquid stocks exposed to EM infrastructure are available in several industries such as transportation, environmental and facilities services, utilities, telecommunication services and electrical equipment, as well as "soft infrastructure" such as education services and healthcare facilities. Several of these oppor-

Fig. 12: Green investment needs by infrastructure type

Total dollar investment needs by infrastructure type, 2010–2030



Sources: OECD, IEA, FAO, UNEP; data presented in USD 2010 rates

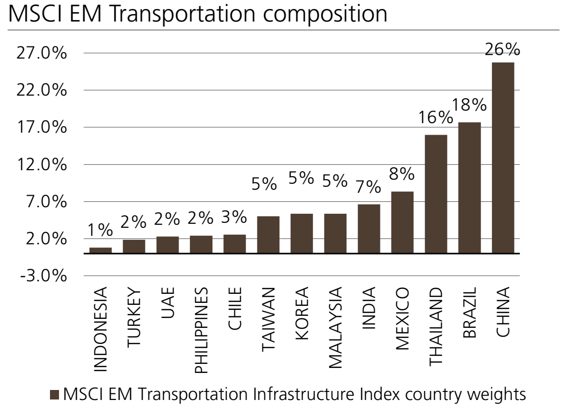
Andrew Lee
Head Impact Investing and Private Markets

Rachel Whittaker
Analyst, Sustainable Investing

Melissa Spinoso
Analyst, Sustainable Investing

Fig. 13: Asia accounts for 67.3% of MSCI EM Transportation Index, LatAm 28.5%, EMEA 4.2%

MSCI EM Transportation composition



Source: Bloomberg, UBS, as of August 2019 tunities feature in other CIO Longer Term Investments such as mass transit rail and emerging market healthcare (emerging market focus), and clean air and carbon-reduction, waste management and recycling, and education services (global focus).

How to implement this theme

Investors need to be selective when investing in EM infrastructure because of the impact that oil and mineral prices can have on investment in energy and extraction industry infrastructure. The impact of China's Belt and Road Initiative investment program in various domestic infrastructure projects in many emerging markets has also become an important investment and risk consideration, particularly for smaller EMs. Within EM infrastructure, we prefer the transportation infrastructure subsector because its growth drivers are structural and investment is less volatile. Although transportation infrastructure stocks are a small part of the MSCI EM Infrastructure index, their earnings growth has consistently outpaced the broader EM infrastructure benchmark since 2013. This is also reflected in the relative share-price outperformance of EM transport infrastructure stocks evident over the last three years.

MSCI EM Transportation Infrastructure Index

We recommend a diversified approach to investing in EM infrastructure due to the specific country and sector risks highlighted below. In this respect, we favor the MSCI EM Transportation Infrastructure Index for investment exposure. The index comprises aviation stocks (44%), marine ports and service stocks (28%), and highway and rail stocks (28%). It provides access to liquid stocks and exposure to several regional markets: Asia 67.3%, Latin America (Brazil, Mexico and Chile) 28.5%, and EMEA (Turkey and UAE) 4.2% (see Fig. 13)

Risks

The main risk to our theme is weaker GDP growth in developing economies due to slower global economic growth or lower commodity prices. Lower economic growth, combined with a rise in public deficits and weak currencies, could distract EM governments from focusing on infrastructure reform. But this is not our base case; evidence suggests that EM governments prioritize public infrastructure spending when economic growth is weak, as China did in 2009 and is doing this year against the backdrop of an escalating trade war with the US.

In some developing countries, investigations into corruption in public project tenders may increase the risk of delays. This is also the case for those domestic transport projects that are part of China's BRI investment program. In Malaysia, a change of government in 2018 caused all BRI transport infrastructure projects to be shelved and, in many cases, contract terms were renegotiated with China. A recovery of energy and commodity prices and rising GDP growth per capita should spur infrastructure spending; but our base case is that urbanization is the key long-term structural driver in emerging markets, and it will produce stable demand growth for infrastructure investment across the economic cycle.

Appendix

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