CFRA

Industry Surveys

Infrastructure

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NEW THEMES

What's Changed: China's Belt and Road Initiative (BRI) faces more challenges as the European Union plans its own infrastructure strategy, the Global Gateway. Moreover, the BRI also sees a slowdown in investment. Details on page 11.

What's Changed: Infrastructure funds have become one of the most popular private equity fundraising classes in recent years. This trend continues as the first half of 2022 saw a surge in infrastructure fundraising – breakdown of year-to-date funds raised on page 15.

EXECUTIVE SUMMARY

CFRA has a neutral outlook on the infrastructure industry, balancing the negative impacts of a rising interest rate environment, high inflation, and potential for a near-term economic slowdown against Federal infrastructure spending, in CFRA's view. Below are some key themes informing our outlook.

China's BRI to Meet Competitions While BRI Investment Continues to Slow

The European Union (EU) plans to challenge Beijing's political influential Belt and Road Initiative (BRI), proposing their version of BRI, the Global Gateway, which aims to increase investments promoting democratic values and high standards, good governance and transparency, equal partnerships, green and clean, secure infrastructure and that catalyze private sector investment. Following the EU's Global Gateway, G7 pledged to raise $600 billion in private and public funds over five years to finance needed infrastructure in developing countries. Another competitor arises against China's BRI.

China Infrastructure Investments Expected to be More Restrained

China's overall fixed asset investment growth has been dragged by property investment, where the country suffered a domestic property sector liquidity crisis, which led to depressed house sales and land transfers. In the annual Central Economic Work Conference held in December 2021, the need for "being rational and forward-thinking with infrastructure investments" was stressed. Stagnant second quarter 2022 GDP growth, slowing manufacturing activities, deepening financial distress of indebted Chinese property developers and of BRI countries, and arising China's rural banking crisis – these problems will likely result in Chinese state lenders becoming more restrained and risk-averse when it comes to new infrastructure investments and financing moving forward, in our view.

Biden's Trillion-dollar Infrastructure Plan to Jumpstart the Economy

Touted as the largest federal investment program since the Interstate Highway System and the Space Race in the 1950s and the "single largest investment in clean energy transmission in American history," the Infrastructure Investment and Jobs Act received Senate approval on August 10, 2021, and House approval on November 5, 2021. The legislation allocates $550 billion for infrastructure investment over five years, on top of the previously approved $450 billion. In addition to kickstarting the economy and rejuvenating the country's infrastructure, the Act also attempts to tackle climate change issues. We believe that construction and heavy machinery companies will be beneficiaries of the new law.

Fundraising Surge in First Half of 2022

Infrastructure funds have become one of the most popular private equity fundraising classes in recent years. The total fundraising in 2021 ended on a high note following a subdued first half, with total fundraising of $136.5 billion, which surpassed 2019's level. In the first half of 2022, the amount of capital raised was $112.7 billion, a surge of about 75% of 2021's full-year total, driven by the close of four mega-funds. Renewables and renewable energy would likely continue to receive substantial proportion of the investment, CFRA thinks.

Digital Infrastructure Gets Pandemic Boost

The pandemic demonstrated that digital infrastructure has evolved from a mere convenience into a necessity for the proper functioning of our lives and economies. As a result, growth in digital product or service offerings worldwide leapfrogged by an average of seven years in a matter of months last year. This new reality means that the quality and robustness of communications and data infrastructure are more vital than ever to the smooth running of businesses and everyday life.

INFRASTRUCTURE

Outlook: Neutral

MARKET CAP BREAKDOWN*

RANK NO.	COMPANY NAME	MARKET CAP ($ billion)
1	NextEra Energy	167.1
2	Caterpillar	97.5
3	Enel	83.9
4	Enbridge	82.3
5	Duke Energy	81.9
	Others†	2,035.0

Source: CFRA, S&P Global Market Intelligence.
*Companies are included in the S&P Global 1200 Index; as of August 31, 2022.
†Refer to the Comparative Company Analysis section of this survey for other companies in the industry.

ETF FOCUS

PAVE Global X U.S. Infrastructure Development	AUM ($M) 3,915.8	Expense Ratio 0.47
IGF iShares Global Infrastructure	AUM ($M) 3,548.0	Expense Ratio 0.43
NFRA FlexShares STOXX Global Broad Infra.	AUM ($M) 2,652.9	Expense Ratio 0.47
GII SPDR S&P Global Infrastructure	AUM ($M) 560.9	Expense Ratio 0.40

BY THE NUMBERS

$5-7 trillion
Estimated cost to achieve UN's Sustainable Development Goals (SDG)

$12 trillion
Potential market opportunities upon reaching SDG

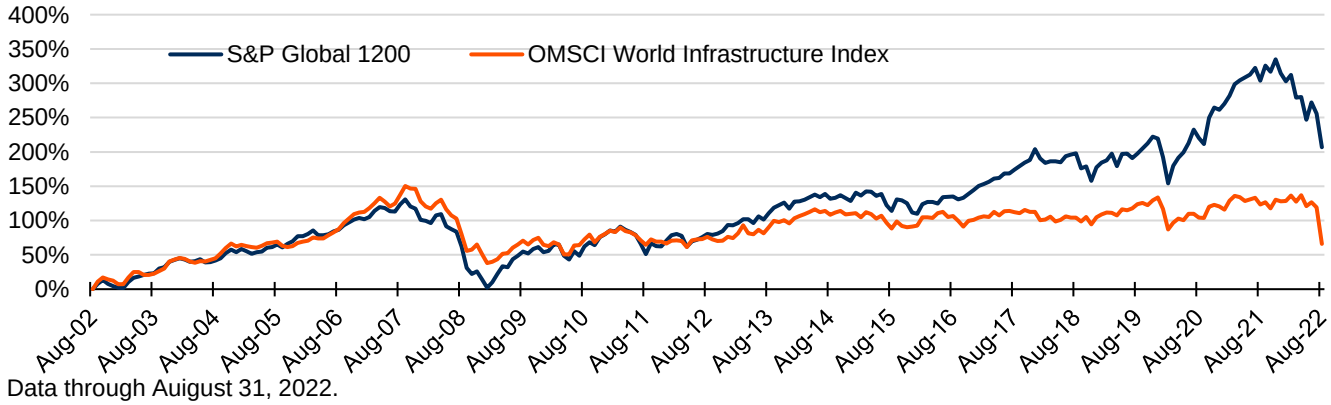
$550 billion
Planned U.S. federal infrastructure investment over the next five years

173,000
miles of road currently in dire state in the U.S.

$15 trillion
Market value of data from U.S. transit networks, water networks, and electricity grid in 2030

6 billion
Gallons of treated water lost each day from water main breaks in the U.S.

HISTORICAL INDEX PERFORMANCE

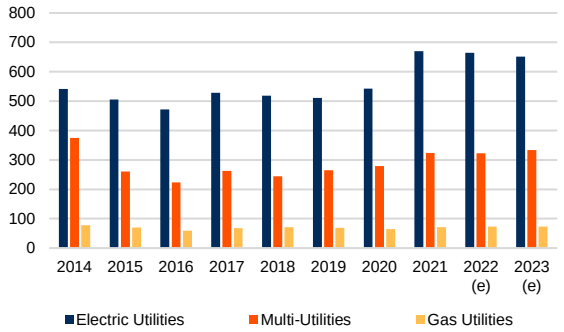


Data through Auigust 31, 2022.
Source: CFRA, S&P Global Market Intelligence.

FINANCIAL METRICS

Electric, Gas, and Multi-Utilities Total Revenue

(industry aggregate, in $, billions)

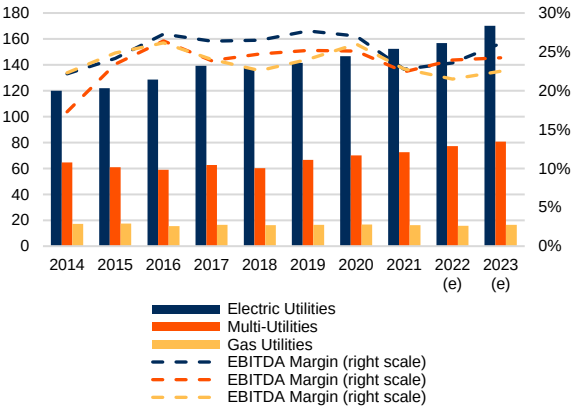


Source: CFRA, S&P Global Market Intelligence.

- We forecast 2022 revenue growth of -0.7% for electric utilities, -0.3% for multi-utilities, and 2.8% for gas utilities.
- The main driver for utilities demand growth in 2021 was the major rollout of Covid-19 vaccinations. We expect the utilities industry growth to trail 2021 in 2022 and 2023 as demand normalizes.

Electric, Gas, and Multi-Utilities EBITDA

(industry aggregate, in $, billions)

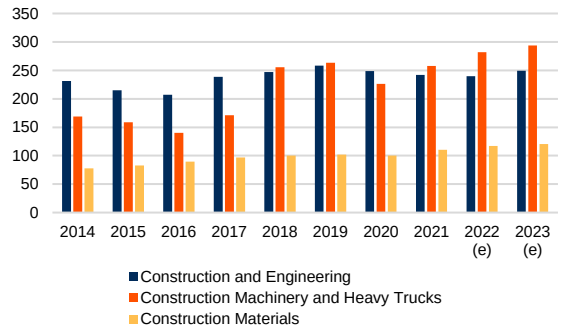


Source: CFRA, S&P Global Market Intelligence.

- We forecast 2022 EBITDA margin growth of 77 basis points (bps) for electric utilities and 151 bps for multi-utilities, driven by improved profitability due to economies of scale and companies' efforts to reduce other operating costs. Gas utilities, however, is expected to see EBITDA margin contraction of 130 bps as a result of raising expenses from elevated gas prices.
- S&P expects the margins from all three sub-industries to improve in 2023. However, CFRA sees some downside risks from rising interest rates, as well as labor and input costs.

Construction Total Revenue

(industry aggregate, in $, billions)

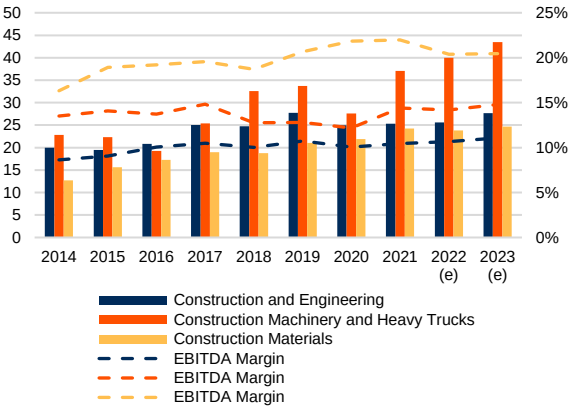


Source: CFRA, S&P Global Market Intelligence.

- We forecast 2022 revenue growth of 9.4% for construction machinery and heavy trucks companies, and 6.0% for construction materials companies, on the back of strong trucking demand and elevated material prices. The revenue growth of construction and engineering (C&E) companies is expected to decline slightly due to headwinds such as material/labor shortages and rising interest rates.
- In 2023, revenue is expected to grow 4.2% for C&E, 4.2% for construction machinery and heavy trucks, and 3.2% for construction materials, guided by green transition and environmental projects worldwide, in our view.

Construction EBITDA

(industry aggregate, in $, billions)

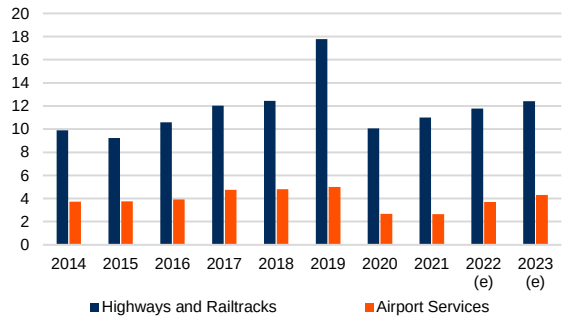


Source: CFRA, S&P Global Market Intelligence.

- In 2022, we forecast EBITDA margin growth of +23 bps for C&E, -20 bps for construction machinery and heavy truck companies, and -161 bps for construction materials. The decline in margin in construction machinery and heavy trucks and construction materials can be attributable to supply chain and inflationary headwinds, in CFRA's view.
- We expect the margin for all three sub-industries to improve in 2023, should the supply chain and inflationary pressures improve in 2023.

Transportation Infrastructure Total Revenue

(industry aggregate, in $, billions)

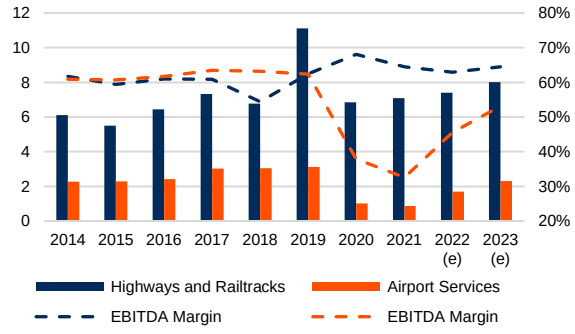


Source: CFRA, S&P Global Market Intelligence.

- We forecast highways and rail tracks revenue to increase 6.9% in 2022 and 5.6% in 2023 (2020: -23.3%, 2021: -21.2%), driven by a recovery in global toll road traffic and increased movement of commodity goods.
- We forecast a 40.4% revenue rebound for airport services in 2022 and 16.4% in 2023 as flight demand recovers, following a decline in 2021 and a 46.4% plunge in 2020.

Transportation Infrastructure EBITDA

(industry aggregate, in $, billions)



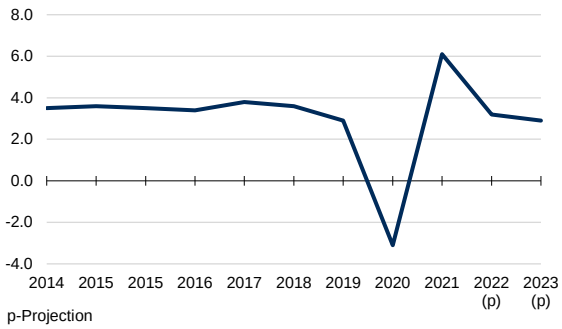
Source: CFRA, S&P Global Market Intelligence.

- We see EBITDA margins for highways and rail tracks to maintain above 60% for 2022 and 2023 amid healthy ground transportation demand.
- EBITDA margin is expected to rebound 1,302 bps in 2022 and 758 bps in 2023 for airport services after plunging more than 2,600 bps in 2020 and 2021. We attribute the surge to cost-containment measures and improvement in passenger traffic. However, CFRA does not see EBITDA recovering to pre-pandemic levels until at least 2024.

KEY INDUSTRY DRIVERS

Global GDP Growth

(percent)



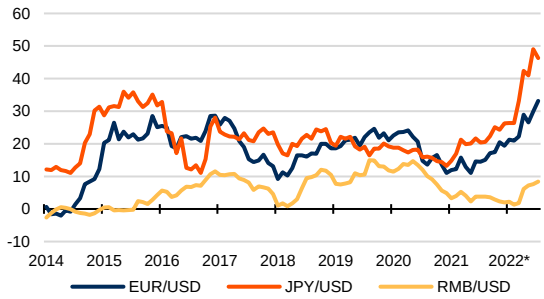
p-Projection

Source: International Monetary Fund

- The need for future investment in infrastructure is linked to the growth rate of an economy. When incomes and populations rise, businesses demand more power and water to sustain their production processes and need transportation infrastructure to transfer people and goods.
- We think the large infrastructure packages introduced by the major world economies like the U.S. will provide much-needed support for the industry over the next few years.

Exchange Rates

(percent)



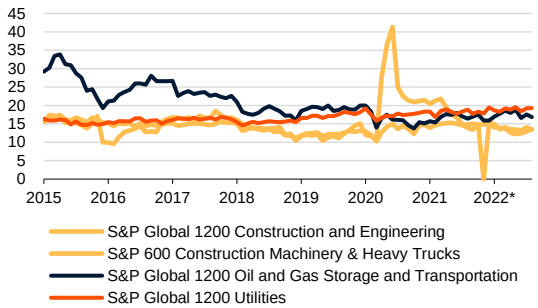
*Data through August 31.

Source: CFRA, S&P Global Market Intelligence

- Financiers are increasingly sourcing the best developers, architects, engineers, and contractors globally to construct infrastructure projects (especially megaprojects). Therefore, large fluctuations in the exchange rates will affect the margins and profitability of the actors.
- In addition, as most commodities are priced in U.S. dollars, the cost of key commodities used in construction for countries outside the U.S. will be more expensive when the dollar strengthens relative to their currencies, which could dampen incentives for infrastructure investment.

P/E Ratios

(multiple)

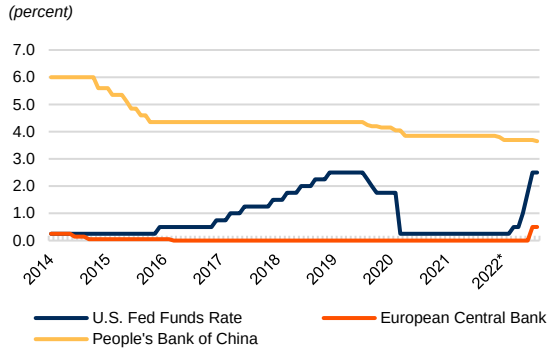


*Data through August 31.

Source: CFRA, S&P Global Market Intelligence

- As of August 31, 2022, the forward P/E multiple was 13.5x for construction and engineering, 13.5x for construction machinery & heavy trucks, 16.8x for O&G gas storage & transportation, and 19.3x for utilities.
- Against their 5-year forward P/E averages, construction and engineering were trading at a 28.5% discount, construction machinery & heavy trucks at a 1.0% discount, O&G gas storage & transportation at a 6.4% discount, and utilities at a 11.2% premium.

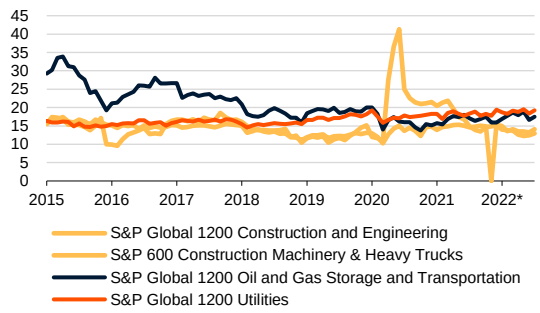
Interest Rates



*Data through August.
Source: Board of Governors of the Federal Reserve System, European Central Bank, People's Bank of China.

- Infrastructure markets have relied on low interest rates over the past decade to grow substantially. A typical infrastructure project uses 60%-75% debt financing, so higher interest rates mean that a project will have lower equity returns (since debt becomes more costly).
- In July 2022, the Fed raised the interest rate by 75 bps to 2.5%, following a 150 bps between March and June, as the Fed tries to tame the worst inflation in 40 years. Fed Chairman Powell's speech at the Jackson Hole annual policy meeting in August 2022 suggested that the central bank will likely keep interest rates rising and elevated for some time, ending expectations for a near-term policy pivot.
- In July 2022, the European Central Bank (ECB) raised interest rate for the first time in more than 11 years by 0.5% to combat soaring consumer prices.
- In August 2022, China's central bank cut the one-year loan prime rate by 5 bps to 3.65% amid economic slowdown and worsened property sector crisis.

Consumer Confidence



*Data through July 31.
Source: CFRA, S&P Global Market Intelligence

- Continuing infrastructure developments signal a vibrant economy, which gives confidence to consumers to spend.
- However, when times are bad and consumer confidence is low, governments usually focus on fiscal stimulus to support consumer confidence and the economy. This results in less funds being available for infrastructure investment.
- U.S. consumer confidence declined 23.5% Y/Y in July 2022 amid diminishing household purchasing power. In China, consumer confidence fell 28.7% Y/Y in May 2022, driven by concerns over stagnant economy growth and depressed property sector. The index in Europe has been heavily affected by elevated energy prices over Russia's invasion of Ukraine, with consumer confidence falling 27.3% Y/Y in July 2022.

INDUSTRY TRENDS

This survey focuses on infrastructure, defined as "the basic physical and organizational structures and facilities (*e.g.*, buildings, roads, power supplies) needed for the operation of a society or enterprise." This consists of transportation, communication, sewage, water, and electric systems. Such systems tend to be high-cost investments and are essential to economic development and stability. CFRA covers communications network infrastructure in its *Communications Equipment* industry survey.

Well-functioning, modern infrastructure is essential to global economic development and quality of life. From the roads and railways needed to transport people and goods, to power stations and communications networks that underpin economic and household activities, to the basic human need for clean water and sanitation, infrastructure is necessary for people and businesses everywhere. Roads and railways are covered in detail in our *Roads and Rails* industry survey.

The quality of a country's infrastructure is closely related to its overall competitiveness globally, with six of the 10 countries with the highest infrastructure quality also in the top 10 countries with the highest competitiveness, according to the World Economic Forum's *2019 Global Competitiveness Report* (latest report with infrastructure quality ranking data).

QUALITY OF OVERALL INFRASTRUCTURE BY COUNTRY 2019

	COUNTRY	
RANK	INFRASTRUCTURE QUALITY	GLOBAL COMPETITIVENESS INDEX
1	Singapore	Singapore
2	Netherlands	United States
3	Hong Kong	Hong Kong
4	Switzerland	Netherlands
5	Japan	Switzerland
6	Korea	Japan
7	Spain	Germany
8	Germany	Sweden
9	France	United Kingdom
10	Austria	Denmark

Source: World Economic Forum

The Construction & Engineering (C&E) industry is key in supporting the development of infrastructure. We, therefore, begin with a Porter's Five Forces analysis on the competitive dynamics of the C&E industry.

Porter's Five Forces Analysis of the Construction & Engineering Industry	
Degree of Rivalry (High)	Companies face intense competition to win contracts for project work. Companies compete for contracts based on price, operational reputation, safety record, geographic presence, and more. Projects can be lost or canceled even after a contract is signed.
Bargaining Power of Customers (High)	Customers have a significant level of bargaining power when selecting a company for projects. Customers can solicit bids from multiple providers and select based on many factors that are both in and out of the company's control.
Bargaining Power of Suppliers (Medium)	Supplier bargaining power is based on scarcity of the product or material supplied, competition for the product or material, supplier size, and switching costs. Suppliers to the C&E industry face competition from a global network of other suppliers.
Threat of Substitutes (High/Medium)	The level of threat depends heavily on the type of project. For more niche project work, the threat of substitutes is lower than for projects in end markets in which multiple companies compete or specialize.
Threat of New Entrants (Low)	It is challenging for a new entrant to establish itself as a viable competitor. Hurdles include absolute cost advantages, access to suppliers, brand loyalty, and more. However, new entrants can pressure established firms through lower pricing bids.

Operating Environment

China's BRI to Meet Competitions While BRI Investment Continues to Slow

The EU plans to challenge Beijing's political influential Belt and Road Initiative (BRI), proposing their version of BRI, the Global Gateway, which aims to increase investments promoting democratic values and high standards, good governance and transparency, equal partnerships, green and clean, secure infrastructures and that catalyze private sector investment. The proposal aims to spend up to EUR300 billion in infrastructure investments by 2027 in partner counties.

In June 2022, Group of Seven leaders (G7) – consisting of Canada, France, Germany, Italy, Japan, the U.K., and the U.S. – pledged to raise $600 billion in private and public funds over five years to finance needed infrastructure in developing countries. Another competitor arises against China's BRI.

China, on the other hand, appears to be slowing down its global infrastructure investments. Chinese lending to the 138 countries targeted by the BRI for roads, rail, energy, and other schemes continued to fall in 2021 to $59.5 billion following a 54% decline in 2020, the smallest disbursement since the BRI was launched in 2013, according to the Green Finance & Development Center, a Shanghai-based research organization. BRI investment slid in the first half of 2022 to $28.4 billion compared to $29.6 billion in the first half of 2021. Countries that have been in financial distress, such as Sri Lanka and Egypt, were reportedly not seen any BRI investments in the first half of 2022.

China Infrastructure Investments Expected to be More Restrained

China's fixed asset investment growth in the first half of 2022 slowed to 6.1%, compared to 12.6% in the prior year period. China's infrastructure investments growth continues to slow as well, to 7.1% over the same period (supported by solid growth from manufacturing-related investments) vs. 7.8% in the first half of 2021. The overall fixed asset investment growth has been affected by the downturn in property investment (as well as Covid-19 lockdowns), where the country suffered a domestic property sector

liquidity crisis, which led to depressed house sales and land transfers. Real estate investment declined 5.4% in the first half of 2022, compared to a 15.0% growth over the same period in 2021. China's new housing construction area dropped 34.4% in the first half of 2022, while the residential area sold in the same period dropped 26.6% as the fear of widespread liquidity crisis among property developers grows.

In the annual Central Economic Work Conference held in December 2021, it was pointed out that China's economic development is facing a triple pressure of demand contraction, supply turbulence, and weakening expectations. The need for "being rational and forward-thinking with infrastructure investments" was stressed. Stagnant second quarter 2022 GDP growth, slowing manufacturing activities, deepening financial distress of indebted Chinese property developers and of BRI countries, and arising China's rural banking-crisis – these problems will likely result in Chinese state lenders becoming more restrained and risk averse when it comes to new infrastructure investments and financing moving forward, in our view.

Inflation Fear Growing Among Infrastructure Investors; Interest Rate Expected to Rise

U.S. inflation has continued to run hot, hitting 8.5% for the 12 months ending July 2022, with Russia's invasion of Ukraine adding upward pressure on commodity price inflation. The 8.5% rate reported in July was an improvement over inflation of 9.1% seen in June but is still far off from the Federal Reserve's 2% target rate. The Federal Reserve has become increasingly hawkish as inflation proves persistent, running near a 40-year high. In June 2022, the Federal Reserve approved an interest rate hike of 75 basis points, the largest increase since 1994. We think the Fed will likely continue its more aggressive path of rate hikes if inflation doesn't show meaningful signs of tempering. According to the *Infrastructure Investor*'s LP Perspectives 2022 Study, inflation is seen as a major concern for 40% of private market investors today, compared to only 6% a year ago. Under such inflationary pressure, infrastructure investments that exhibit uncorrelated, non-cyclical, and inflation-hedged returns characteristics will likely gain popularity, in our view.

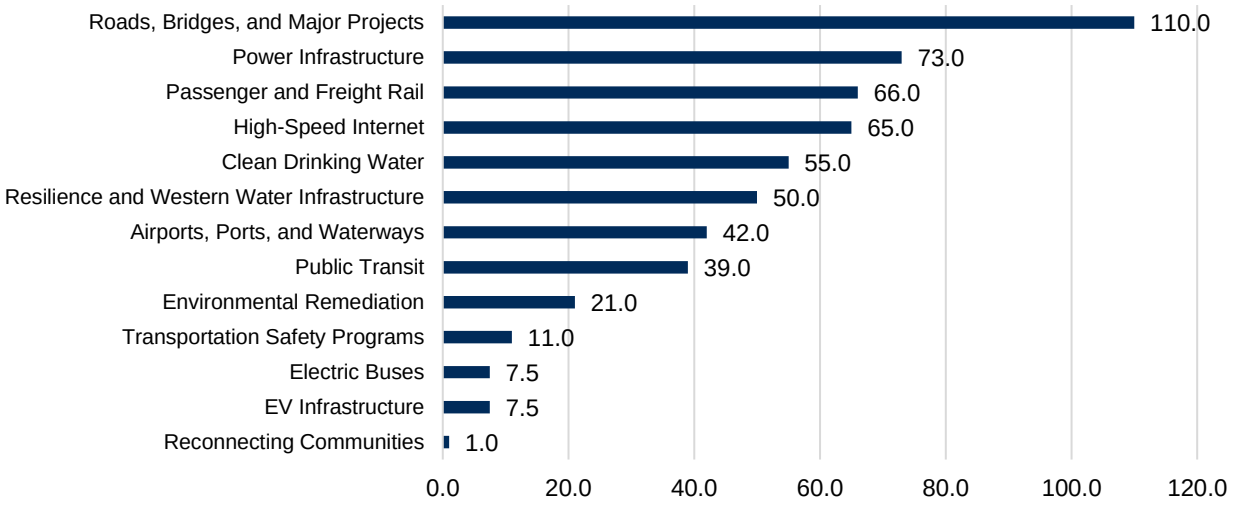
Biden Wins Approval on Infrastructure Plan

On March 31, 2021, President Joe Biden unveiled a $2.25 trillion U.S. infrastructure plan – known as the American Jobs Plan – which intends to spur job creation, address climate change, and rebuild the country's infrastructure to better compete with China. The proposal, however, did not gain much traction in the Senate. After months of renegotiation, a bipartisan compromise was reached for a $1.2 trillion infrastructure bill. The bill received Senate approval on August 10 and House approval on November 5. On November 15, with President Biden's signature, the Infrastructure Investment and Jobs Act (Infrastructure Act) was made law in what would be the largest federal investment in infrastructure in more than a decade.

The legislation includes $550 billion in new federal investment over five years in addition to the $450 billion in previously approved funds. Apart from its attempt to jumpstart the American economy and tackle the climate crisis, some of the Act's other provisions include supporting existing power facilities, rejuvenating nationwide transport systems, and enhancing network connectivity.

Investments in roads, bridges, and major projects made up the largest portion of the Infrastructure Act, at $110 billion. This would help pay to rebuild and repair the 173,000 miles of road and 45,000 bridges currently in dire conditions across the country. Touted as the "single largest investment in clean energy transmission in American history," the $73 billion investment in power infrastructure would be used to enhance grid infrastructure and facilitate interregional power transmission – something experts think would be pivotal to the increased adoption of renewable energy sources. The breakdown of spending can be found in the chart below, which also includes provisions to invest in safeguarding against cyberattacks, the development of regional clean hydrogen hubs, and funding for electric vehicle infrastructure.

SPENDING BREAKDOWN OF NEW INVESTMENTS FOR THE INFRASTRUCTURE BILL



Source: White House Fact Sheet.

The issue of funding has been an ongoing one, as Senators have had difficulties coming to an agreement on ways to pay for the package. The plan will likely be paid for with a variety of federal revenue streams, potentially including repurposed funds originally meant for pandemic relief, unused unemployment insurance supplemental funds, additional tax enforcement on cryptocurrencies, and economic growth resulting from the infrastructure spending. Alternatively, the administration could impose a tax overhaul. This includes increasing the tax rate on corporations and wealthy individuals – more specifically, billionaires.

We see construction and heavy machinery companies benefitting from the trillion-dollar infrastructure plan, as typically 5-7% of infrastructure spending dollars go toward construction equipment. However, as the plan places a significant focus on battling climate change, the positive impact on construction equipment companies may be mixed.

Digital Infrastructure as One of the Cores

Digital transformation is one of the most crucial trends shaping society, the economy, and markets today. If there's anything Covid-19 has shown us, it would be that digital infrastructure is as close to being a necessity for the functioning of our lives and economies as the roads connecting the country. Business meetings became video conferences, movies in the theater transformed into virtual watch parties, and visits to brick-and-mortar stores were replaced by online shopping. As a result of Covid-19, growth in digital offerings worldwide leapfrogged by an average of seven years, according to the McKinsey Global Survey of executives published in October 2020. This new reality means that the quality and robustness of communications and data infrastructure (cell towers, servers, or fiberoptic cables) are more crucial now than ever for the proper functioning of modern civilization.

Half of all global website traffic comes from content delivered to and from mobile-enabled devices. In the fourth quarter of 2021, mobile devices accounted for 54.4% of global website traffic, according to Statista, and this figure has been hovering around 50% since the first quarter of 2017. In a post-pandemic estimate, mobile data usage in 2027 (288 exabytes) will likely be 5.6x higher than 2020 levels (51 exabytes), driven by improved device capabilities, an explosion in data-intensive content, and more data throughput from new generations of network technology, according to Statista.

More data centers would need to be built to accommodate the forthcoming explosion in data volume. The past few years saw a number of large-scale facilities being constructed to support the growth of

hyperscale companies, which include the world's largest cloud service providers. Hyperscale data centers are characterized by their large floor space requirements and their need for computers and storage systems in the thousands, as well as cutting-edge networking capacities. Given how central these capabilities are to their businesses, many hyperscale companies invest in their own data center infrastructure. The number of large data centers operated by hyperscale providers increased to 700 at the end of the third quarter of 2021, almost tripled from 259 providers in 2015, and is projected to pass the 1,000 mark by 2025, according to Synergy Research. Among the hyperscale operators, Amazon, Microsoft, and Google collectively account for over half of all major data centers in 2020. Driving these investments is the ongoing robust growth in digital services, particularly cloud computing, software as a service (SaaS), e-commerce, gaming, and video services.

Paradigm Shift in Energy Infrastructure

Investments in renewable energy infrastructures prior to 2020 were relatively unpopular compared to their oil and gas counterparts. However, Covid-19 offered a rare glimpse into the perils of conventional energy and pushed renewable energy into the spotlight. According to satellite data collected by NASA, the U.S. Geological Survey, and the European Space Agency, the pandemic, though deadly, had unintentionally benefitted our environment in many ways. Deforestation rates slowed in Colombia and Peru, air pollution diminished, water quality improved, and snow became more reflective in several areas. Such phenomena created a powerful tailwind for the clean energy transition.

The inherent limitation of renewable energy production is the unpredictability of its inputs – naturally occurring factors such as solar, wind, waves, etc. On top of that, the increasing frequency and intensity of natural disasters led power providers to seek new ways to mitigate volatility in renewable energy production. One promising solution is energy storage; renewable assets will likely become more cost- and performance-competitive with conventional energy sources as storage technologies become more widely available and cost-effective, thereby boosting the adoption of renewable energy.

According to a 2020 report by Wood Mackenzie, energy storage installations worldwide expanded at a 66% CAGR from 2013 to 2020 and are estimated to grow at a CAGR of 31% through 2030, owing to continuous technological advancements, lower costs, and increasing demand for cleaner power generation. The falling cost of renewable infrastructure has been a major demand factor. The cost of physical infrastructure and development for wind and solar assets has dropped significantly, allowing "grid parity" to become a reality in many regions. Grid parity is achieved when an alternative energy source can produce power at the same or lower cost than the electricity grid.

Energy storage costs are also forecast to continue falling, with the International Renewable Energy Agency predicting total installation cost reductions of 50% to 60% by 2030. Technology will improve the economics of both renewable projects and storage by enhancing battery performance and reducing costs, which will increasingly attract investor interest. We are also seeing a gradual yet steady rise in the number of renewable energy projects that include storage.

Extreme weather has been the major cause of prolonged power outages in the United States for the past two decades, according to Roshi Nateghi, a Purdue University researcher who studies infrastructure reliability and resilience. In addition, weather-related power outages as of September 2020 have increased by 67% since 2000, according to data from the Department of Energy. The situation will only worsen as climate change is expected to fuel hotter heatwaves, more severe winter storms, and more devastating hurricanes. As a result, grid balancing, energy storage, and continued renewable infrastructure growth represent one of the most lucrative and impactful investment opportunities available today. Investors' interest in storage financing was also supported and recognized by the U.S. Congress, as evidenced by the introduction of the Energy Storage Tax Incentive and Deployment Act of 2021, which would broaden the investment tax credit program to include standalone energy storage projects.

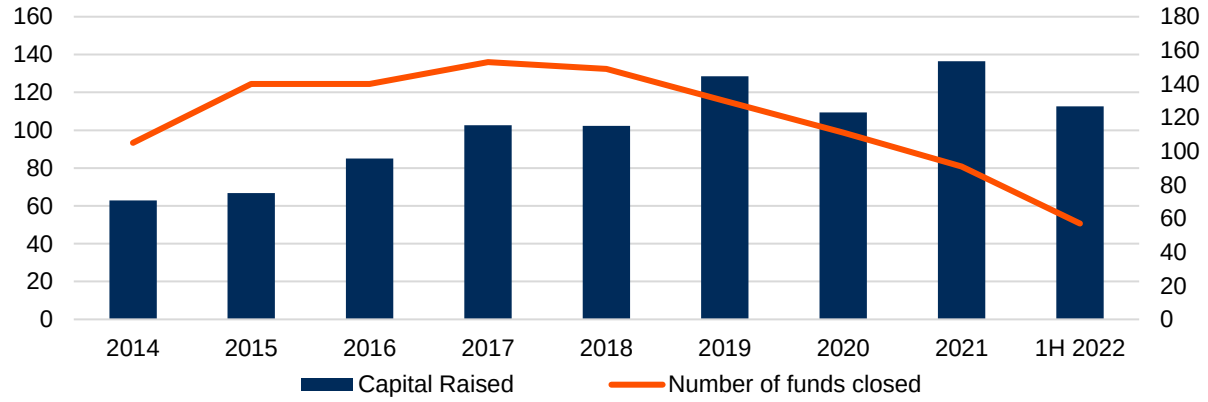
Fundraising Surge in First Half of 2022

Infrastructure funds have become one of the most popular private equity fundraising classes in recent years. Preqin, a provider of financial data for alternative assets, forecasts that unlisted infrastructure assets under management (AUM) will grow at a 5-year CAGR of 4.5%, from $639 billion in 2020 to $795 billion in 2025.

The total fundraising in 2021 ended on a high note following a subdued first half, with total fundraising of $136.5 billion, which surpassed 2019's $128.6 billion. The EQT Infrastructure Fund V had the largest close in 2021 at $18.6 billion, followed by DigitalBridge Partners II and Copenhagen Infrastructure Partners IV at $8.3 billion each. In the first half of 2022, the amount of capital raised was $112.7 billion, about 75% of 2021's full-year total. The surge is driven by the close of four mega-funds, which raised a combined $61 billion, marking a departure from previous years, when one mega-fund close at most was customary in any given year, according to *Infrastructure Investor*.

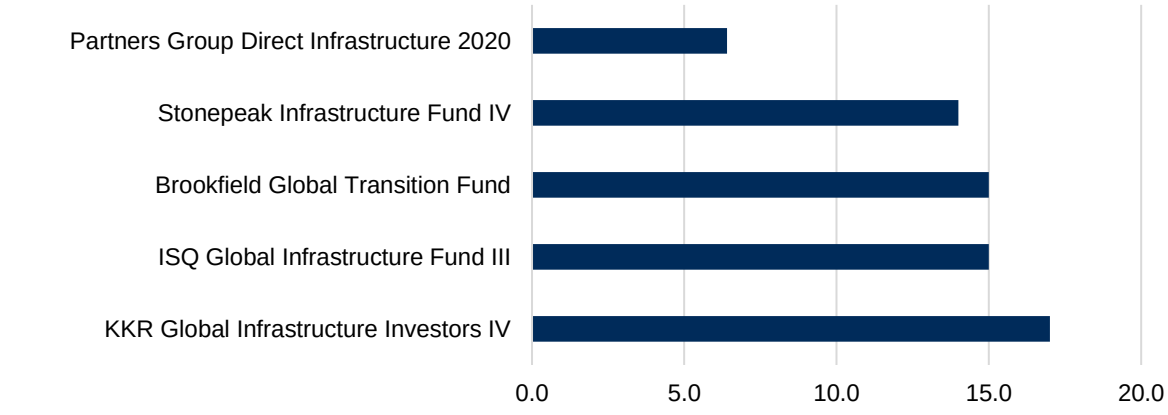
UNLISTED INFRASTRUCTURE FUNDRAISING

(capital raised, in $, billions) *(no. of funds closed)*



Source: Infrastructure Investor.

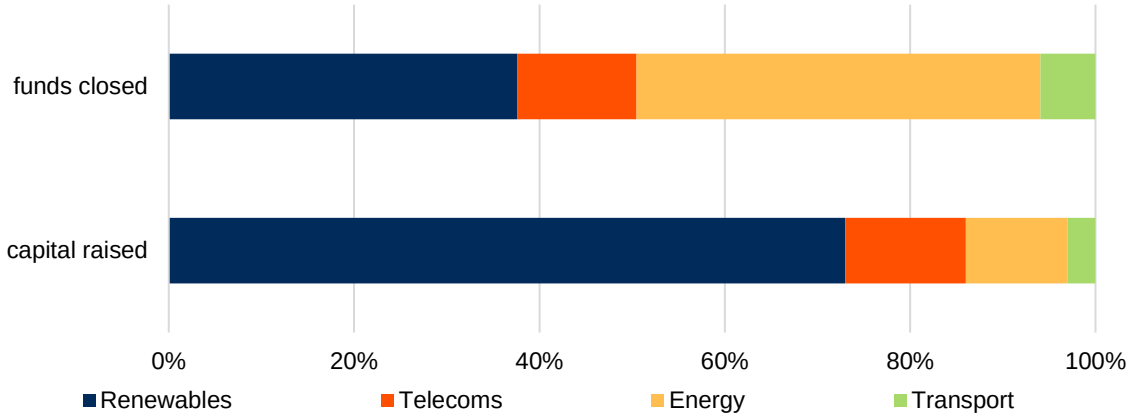
LARGEST FUND CLOSES IN 1H 2022



Source: Infrastructure Investor.

In the first half of 2022, renewables reigned supreme, accounting for more than 70% of all capital raised by sector-specific funds.

FUNDRAISING BY SECTOR IN 1H 2022



Source: Infrastructure Investor.

Digitization of Infrastructure a No-Brainer Investment

Building information modeling (BIM), big data, cloud computing, and analytics are changing how infrastructure is planned, designed, built, and managed. Advisory firm CG/LA Infrastructure estimates that by 2030, the market value of data from U.S. transit networks, water networks, and electricity grid could be as much as 10 times the annual investment requirements, to exceed $15 trillion per year. This indicates that the digitization of U.S. infrastructure is not only a no-brainer priority, but the $10 created for every dollar invested will leave funds for education, health care, and other areas of desperately needed, long ignored investment.

The Covid-19 pandemic helped accelerate the pace of digitization, as more people are abandoning urban centers in favor of more open-space living in the suburbs and exurbs as the work-from-home phenomenon becomes more widespread. To that end, highways, bridges, and tunnels to transport people to urban centers become less necessary, while creating a stronger digital infrastructure that allows ongoing remote working becomes more important.

The digital transformation of infrastructure would also facilitate the development of smart cities. Smart cities integrate infrastructure and technology to boost quality of life and enhance interactions with the urban environment. The city of Barcelona is one such example. The installation of a network of fiber optic cables has enabled the support of smart technologies across the city while providing free high-speed Wi-Fi that further enhances IoT capabilities. By integrating intelligent water, lighting, and parking management, Barcelona saved EUR75 million and created 47,000 new jobs in the smart technology business.

Master planning for a city requires advanced analytics for the adaptation of next-generation mobility as well as revenue-generating fiber infrastructure. In addition, the future of almost all water infrastructure will be highly technology-enabled, leveraging predictive analytics and smart metering technology. CFRA thinks construction and engineering companies that can adapt and hone expertise in providing innovative technology requirements will gain a competitive advantage over their peers.

ESG Goes Mainstream

Once perceived as a pet project of environmentalists, the UN Sustainable Development Goals (SDGs) are now widely recognized not only by the development community but also by the private sector and wider civil society for the values they embody. Governments are beginning to review their strategies for implementing the SDGs, corporations increasingly see sustainability as a priority at the board level, and investors are beginning to channel their money into Environmental and Social & Governance (ESG)

companies and funds. We also see an increase in active decarbonization projects, greenhouse gas reduction initiatives, and government/business proposals on effective water management.

Achieving the SDGs comes at a hefty price tag. According to the United Nations Conference on Trade and Development (UNCTAD), achieving the SDGs would take about $5-$7 trillion per year, with an investment deficit of about $2.5 trillion per year in developing countries. The World Bank estimated that 50% to 80% of financing requirements would come from domestic resources. Private funding and capital also hold great growth potential. Achieving the SDGs could open $12 trillion of market opportunities in food and agriculture, cities, energy and material, and health and well-being alone, as well as create 380 million new jobs by 2030, according to a report by the Business & Sustainable Development Commission.

Regulatory Updates

Infrastructure companies are subject to a variety of environmental, health, and safety laws and regulations governing, among other things: air and water discharges; the handling, storage, and disposal of hazardous or waste materials; and the remediation of contamination associated with the release of hazardous substances and human health and safety. These laws and regulations, as well as the risk of accompanying litigation, can cause significant delays to projects and significantly add to costs.

Two Different NEPAs Under Two Different Presidents
The National Environmental Policy Act (NEPA) is a law enacted in 1970 that promotes conservation of the environment. The Act established the President's Council on Environmental Quality (CEQ), which coordinates federal environmental efforts and works closely with agencies and other White House offices to develop environmental and energy policies and initiatives. NEPA requires federal agencies to evaluate the impact of all proposed actions on the environment prior to making any major policy decisions.

During his presidency, Donald Trump unilaterally weakened NEPA by limiting public review of federal infrastructure projects to speed up the infrastructure permitting process. In doing so, the Trump administration claimed it would save hundreds of millions of dollars over a decade by dramatically reducing the time required to complete evaluations of major projects. Critics said the NEPA overhaul could sideline poor and minority communities and discount a project's impact on the environment. Despite countless pleas for an extension of the overhaul timeline, the Trump-era regulation went through in just seven months.

In contrast, President Joe Biden made it clear on his first day in office that he would fix and strengthen NEPA implementation by signing an executive order directing the CEQ to review Trump's NEPA regulations. In October 2021, the CEQ said it plans to restore NEPA in two phases. The first reinstates key aspects of the Act previously dismantled by the Trump administration. The second, broader phase would allow community feedback and greater public involvement in the environmental review process. This is intended to help reduce conflict and provide an avenue to clear up any uncertainties that the Trump administration's rule had caused. Phase 1 was completed in April 2022, largely restoring provisions that were in place prior to changes made by the Trump administration.

HOW THE INDUSTRY OPERATES

Infrastructure is the term for basic facilities and systems that serve a country, a city, or another region, including services and facilities that are essential for economic and social development around the world. At the most basic human level, people need access to clean, healthy drinking and cooking water, and electricity for the lighting and heating of their homes. Roads and railways make it possible for people to get to work and provide for their families. This transport infrastructure, as well as seaports and airports, allow firms to reach the markets they need to trade goods and services, including across international boundaries. Throughout these and many other respects, infrastructure is essential to quality of life and economic development.

Since infrastructure very often requires the development of either public goods or natural monopolies that lend themselves to production, it is common to see public financing, ownership, oversight, or regulation of infrastructure. This typically takes the form of direct production by the government or through a monopoly that is tightly regulated, legally sanctioned, and often subsidized. At smaller scales, infrastructure can also often take on the characteristics of club goods or goods that are most readily produced by localized monopolies and can be delivered within the context of a private company that produces infrastructure for use within the business or that is provided by formal or informal collective action arrangements.

We consider the value chain for any construction or infrastructure project as three distinct stages: design, production and conversion of raw materials into manufactured products, and on-site construction. Each stage comprises internal phases, processes, and stakeholders that interact to bring a project to fruition. The major sectors in this industry – aluminum, bricks/clay, cement, glass, plastics, and steel – are supported by the ancillary activities of companies working with construction financing, legal firms, etc. The distinctness of these processes, as well as the fixed-term, project-based nature of relationships along the supply chain, result in a highly fragmented industry structure.

Types of Infrastructure: Economic Versus Social Infrastructure

Economic Infrastructure
Economic infrastructure facilitates business activities, such as communications and transport (for passengers and freight), as well as utility networks and systems, and plants such as water, waste, and energy supply systems. The operation that uses the infrastructure is usually priced, or related service is charged to the user or to an economic operator that uses the infrastructure to provide the service to the end-user/consumer.

In many countries, communications infrastructure is deregulated, and private companies are the sole legal owners of the network. In an open and competitive market, they make use of the network to provide communication services. Telecommunications networks, however, can be considered public infrastructure in those countries where the services are publicly owned and the operation is reserved for the public sector, or when the public sector wants to improve a telecommunications network in specific areas (for example, rural areas) through government investment.

Social Infrastructure
Social infrastructure is infrastructure (mostly facilities in the form of buildings) that accommodates social services. For example, hospitals, schools and universities, prisons, social housing, law courts, and so on. All of these structures serve as the backbone for communities and societies.

Social infrastructure does not usually generate user payments. Instead, when present, they are typically marginal and collateral (*i.e.,* ancillary revenues, whereas economic infrastructure may or may not generate user revenues). This is because (1) the infrastructure may be provided free of charge to users;

(2) a fee may be levied for use and collected and maintained by the infrastructure developer; or (3) a fee may be charged for use but collected and retained by another public or private entity.

INFRASTRUCTURE INVESTMENT CHARACTERISTICS BY RISK PROFILE

RISK PROFILE	TYPICAL SUBSECTORS	TYPICAL REVENUE DRIVERS	MANAGER NET IRR TARGETS	YIELD EXPECTATION	IMPLIED CAPITAL GAIN EXPECTATION	HOLDING PERIOD (YEARS)
Core	• Gas, electric, water/waste and multi-utilities • Concentrated and renewable power generation • PPP assets • Mature, top-tier airports, seaports or toll roads in major market	• Rate regulation • Long-term contracts with government or creditworthy counterparties (such as quasi governmental entities) • Availability concessions with government agencies markets	6%-9%	5%-7%	1%-2%	7+
Core Plus	• Contracted thermal power generation • Contracted renewable power generation with some development risk • Contracted oil & gas midstream assets • Toll roads, airports, seaports with greater GDP sensitivity	• Long-term contracts • Concession arrangements subject to some volumetric/ GDP-linked risk	9%-12%	4%-6%	5%-6%	6+
Value-Add	• Greenfield assets under construction (de-risked to core plus once commissioned) • Early stage oil and gas midstream • Data centers and fiber optic networks • Assets undergoing meaningful expansion • Assets undergoing meaningful repositioning	• Long-term contracts on greenfield assets • Short-term contracts • Contracts with less creditworthy counterparties • Revenues reliant on meaningful ramp-up through GDP or demographic growth	12%-15%	2%-3%	10%-12%	5-7
Opportunistic	• Infrastructure assets in developing markets • Special situations, such as assets undergoing transition or financial distress • Merchant power generation • Merchant oil and gas midstream processing assets	• Traditional revenue profile but with meaningful exposure to both volume and pricing risk • Likelihood of revenue volatility	15%+	0%	15%+	3-5

*The Net IRR targets are consistent with return expectations set out by active infrastructure investment managers and will therefore vary from Mercer's long-term capital markets assumptions. Actual returns will differ from expected returns, and the above are not meant to represent a guarantee of performance.

Source: Mercer

Infrastructure in Developed Versus Developing Countries

The lack of infrastructure in many developing countries is one of the most significant limitations to economic growth and the achievement of the Millennium Development Goals (MDGs), according to research by the Overseas Development Institute (ODI). Investments in infrastructure and maintenance can be expensive, especially in landlocked, rural, and sparsely populated African countries. Investments in infrastructure contributed to more than half of Africa's improved growth performance between 1990 and 2005, and increased investment is needed to maintain growth and address poverty, according to the ODI. The returns on investment are significant, with 30-40% returns for telecommunications/ICT investments, more than 40% for electricity generation, and 80% for roads, according to the ODI.

Construction Processes

Construction of infrastructure projects, especially complex and ambitious ones, require multi-disciplinary expertise and manpower. The project owner may commission one or more specialist firms to carry out detailed planning, design, construction, and handover. Typically, the owner will appoint one company to oversee the project (this could be a contractor, a construction manager, or another advisor); such experts are often hired for their project delivery expertise and will assist the owner in defining the project brief, agreeing on a budget and schedule, liaising with relevant public authorities, and procuring the services of other specialists (the supply chain, which comprises subcontractors). Involved parties enter into contracts for the delivery of services, as well as other comprehensive arrangements aimed at ensuring lawful, timely, on-budget, and secure completion of the required works.

Planning
A proposed construction project must, where appropriate, adhere to municipal land-use planning regulations, such as zoning and building code standards. A project's possible impacts on neighboring properties and existing facilities will usually be determined by the "authority having jurisdiction," or AHJ, which is typically the municipality where the project will be located. Site analysis, site surveys, and geotechnical investigations are performed to collect information.

Construction cannot usually begin before planning approval has been given, and it may be necessary to first complete preparatory work to ensure that relevant infrastructure has been upgraded. Surveys on existing utility lines may also be conducted as part of the preparatory work to prevent destruction that could result in outages or other dangerous circumstances.

Finance
Mortgage bankers, accountants, and cost engineers can all be involved in developing an overall plan for the financial management of a construction project, depending on the type of project. Accountants calculate the projected cash flow over the project's life and keep track of the payouts along the way. Cost engineers, estimators, and quantity surveyors translate the amount of labor and materials involved into a proper valuation.

Procurement

Design-Bid-Build (D-B-B)
In Design/Bid/Build (D-B-B), also known as the general contracting project delivery method, the process is linear, where one phase is completed before the next begins with no overlap. This is the traditional method of project delivery and has been the most widely used construction delivery method since ancient times. It is also the one with which most project owners are familiar.

Under D-B-B, the architect is selected under a separate contract that is based on a negotiated professional fee. It, therefore, commences with an owner selecting an architect to prepare construction documents. Most often, the architect will release these construction documents publicly, or to a select group of invited prequalified general contractors, who will be asked to bid on the project, which reflects what they believe the total cost of construction will be. This bid is inclusive of various other bids from subcontractor for each specific trade. The general contractor's fee is generally built into the bid cost. Most government contracts are required to bid competitively using this method. Contractors bid the project exactly as it is designed with the lowest responsible, responsive bidder awarded the work. The design consultant team is selected separately and reports directly to the owner.

This type of contract is most suited for less complicated projects that are budget sensitive but not necessarily schedule sensitive and not subject to change. The project owner can define and control the design through the architectural consultant.

Design-build
Design-build (D-B) is a project delivery method in which the design and construction services are contracted by a single entity known as the design-builder or design-build contractor. In contrast to D-B-B, D-B relies on a single point of responsibility contract and is used to minimize risks for the project owner and to reduce the delivery schedule by overlapping the project's design and construction phases. Since the design-builder is responsible for all work on the project, the owner can seek legal remedies for any fault from a party.

Construction Management
In this arrangement, the client enters into separate contracts with the designer (architect or engineer), construction manager, and individual trade contractors. The project owner takes on the contractual role, while the construction or project manager is in charge of overseeing the various trade contracts and ensuring that all work is completed smoothly and effectively together.

This method is often used to speed up procurement procedures, give the client more design flexibility within the contract, allow for the appointment of individual work contractors, separate contractual obligations between the parties within the contract, and give the client more control.

Design

A design team is usually hired by the property owner (*i.e.,* a design-bid-build project). The design team may include architects, engineers (civil, mechanical, electrical, etc.), and planning/architectural consultants, depending on the type of project. Typically, a lead designer would be assigned to help coordinate various disciplinary inputs to the master design.

Until the mid-1960s, designs were mostly hand-drafted. Adoption of computer-aided design (CAD) technologies improved design productivity, whereas the introduction of building information modelling (BIM) processes in the twenty-first century included the use of computer-generated models that can be used to generate drawings and other visualizations, as well as to capture non-geometric data of building components and systems.

Construction

Work on the construction site will begin once contractors and other related professionals have been hired and the designs have been finalized. A construction site would typically have a protected perimeter to prevent unauthorized entry, site access control points, office and welfare accommodations for staff from the main contractor and other companies participating in the project team, and storage facilities for materials, machinery, and equipment.

Sources of Funding

Infrastructure projects may be financed publicly, privately, or through public-private partnerships.

Government Spending
The source of financing varies significantly across sectors. Some sectors are dominated by government spending, others by overseas development aid (ODA) and others by private investors. Traditionally, governments have been the sole financier of infrastructure projects along with being responsible for implementation, operations, and maintenance. However, there is a shift of view that this method may not be the best way to execute/finance such mega projects.

Governments have made several attempts to create an environment for sustainable and scalable involvement of the private players in infrastructure development within their countries. Although there are

many issues surrounding the availability of suitable intermediaries with an adequate amount of risk capital to finance infrastructure, there does not seem to be a lack of funds within the economy.

Development Aid
Development aid is financial assistance provided by governments and other agencies to support the economic, environmental, social, and political development of developing countries. It is distinguished from humanitarian aid by its focus on alleviating poverty in the long term, rather than a short-term response. Most of the development aid comes from Western industrialized countries, but some poorer countries also contribute aid.

Aid may be bilateral, given directly from one country to another, or multilateral, given by the donor country to an international organization like the World Bank or the United Nations for distribution to developing countries. About 80 to 85% of developmental aid comes from government sources as official development assistance (ODA). The remaining 15 to 20% comes from private organizations such as "non-governmental organizations" (NGOs), foundations, and other development charities (*e.g.,* Oxfam).

Private Capital
Large amounts of capital have been made available by pension, insurance, and sovereign wealth funds. Consequently, many owners of infrastructure assets—government and private alike—have taken advantage of the sharp rise in asset values by putting assets up for sale.

Specialist investors have bought into a wide range of the developed (and in certain cases, developing) world's infrastructure, ranging from Australian airports to U.K. water companies with a wide array of port, energy, and telecom infrastructure in between.

Public-Private Partnership
A public-private partnership (PPP, or P3) is a cooperative arrangement between two or more public and private sectors, typically of a long-term nature. PPPs are primarily used for infrastructure provision, such as the building and equipping of schools, hospitals, transport systems, and water and sewerage systems.

In some types of PPPs, the cost of using the service is borne exclusively by the users of the service—for example, by hospital patients, students, or users of public utilities. In other forms (including the U.K. private finance initiative), capital investment is made by the private sector on the basis of a contract with the government to provide the services decided upon, and the cost of providing the services is borne wholly or partly by the government.

Usually, a separate company forms a private-sector partnership called a special purpose vehicle (SPV) to develop, build, maintain, and operate the asset for the contracted duration. In cases where the government has invested in the project, an equity stake in the SPV is typically (but not always) allocated. The consortium is usually made up of a construction contractor, a maintenance company, and one or more equity investors. In infrastructure business, complex arrangements and contracts that guarantee, and secure cash flows make PPP projects the main candidates for project financing.

Some PPPs, particularly when the development of new technologies is involved, include profit-sharing agreements. This generally involves the division of revenue between the inventor and the public once the technology is commercialized. Profit-sharing agreements may be concluded over a fixed period or in perpetuity.

Several benefits of PPP include the introduction of competition and greater efficiency than traditional methods of delivering public services, which is the main source of sustainable public savings and hence the main objective and justification of PPP. PPPs are more common in European countries than in the U.S. partly because the low cost of private financing through U.S. municipal bonds is often an easier and cheaper way to secure funding for local governments.

The table below provides a list of types of infrastructure assets where it is common to see examples of PPP developments with private finance.

SECTORS IN WHICH AN INFRASTRUCTURE MAY BE PROCURED UNDER A PPP SCHEME	
SECTOR	EXAMPLES
Transport - Roads	New road/highways
	Specific tunnel or bridge projects
	Access links (for instance, to ports)
	Upgrading and expansion of roads and networks
Rail	High-speed rail lines
	Heavy conventional rail lines
	Rapid links (for instance, to airports)
	Operational leasing of rolling stock
	Metro and other mass transit projects
	Ticketing and fare collection systems
	Metro stations
Other urban mobility infrastructure	Bus rapid transit infrastructure
	Parking
	Intermodal interchange or hubs
Ports and airports	New or upgraded airports
	New or upgraded ports
Water and waste	Desalination plants
	Wastewater treatment plants (WWTP)
	Integrated water cycle concessions
	Solid waste management systems
	Waste to energy plants – incineration plants
Energy	Independent power producer plants through PPAs
	Electricity transmission lines
	Gas pipelines
	Energy efficiency (for instance, in public buildings or in urban lighting)
Information and Communications Technology (ICT)/Telecommunications	Optical fiber lines or networks
	Telecommunications networks/broadband
Tourism	National parks
	Cultural heritage buildings
Agribusiness	Grain storage PPPs
	Irrigation projects
Health, education, security/prisons, courts/justice, social housing	Hospitals
	Student residences
	University facilities
	Schools facilities
	Court buildings
	Prison facilities
	Social housing
Sports, emergency response and local security, government accommodations	Sport centers
	Fire stations
	Police stations
	Government offices
Other potential sectors	Defense: flight simulators or other simulators
	Military facilities
	National border posts or facilities

Source: APMG PPP Certification Program

National Infrastructure Banks (NIB)
The Global Infrastructure Hub (GI Hub) defines a NIB as a wholly or partially, publicly owned financial institution, set up to support government policies in the infrastructure space. NIBs have raised capital efficiently because of government backing, but riskier portfolios of private financing require different structures and approaches.

Types of Contracts
Contracts generally fall into two broad categories: fixed-price and cost-reimbursable.

Fixed-price contracts include both "lump sum bid" contracts and "negotiated fixed-price" contracts.

Under lump sum bid contracts, construction and engineering (C&E) companies typically bid against competitors based on client-furnished specifications. This type of pricing presents certain inherent risks, including the possibility of ambiguities in the specifications received, problems with new technologies, and economic and other changes that may occur over the contract period. Additionally, it is not unusual for lump sum bid contracts to lead to an adversarial relationship with clients.

In contrast, under a negotiated fixed-price contract, C&E companies are selected as the contractor first and then negotiate a price with clients. Negotiated fixed-price contracts frequently exist in single-responsibility arrangements where C&E companies perform some portion of the work before negotiating the total price of the project.

Thus, although both types of contracts involve a firm price for the client, the lump sum bid contract provides the greater degree of risk (*e.g.*, cost overruns) to C&E companies. However, because of economies that may be realized during the contract term, both negotiated fixed-price and lump sum bid contracts may offer greater profit potential than other types of contracts.

Cost-reimbursable contracts generally provide for reimbursement of costs incurred plus an amount of profit. The profit element may be in the form of a simple mark-up applied to the labor costs incurred or it may be in the form of a fee, or a combination of both. The fee element can also take several forms. The fee may be a fixed amount; it may be an amount based on a percentage of the costs incurred; or it may be an incentive fee based on targets, milestones, or performance factors defined in the contract.

Risk factors include occupational health and safety, volatile commodity prices, cost of services, increased competition, and project cost overruns.

Global Infrastructure Outlook

In a joint Global Infrastructure Outlook report, Oxford Economics and the GI Hub estimate global infrastructure investment needs to be $94 trillion between 2016 (latest available) and 2040, which is 19% higher than what would be delivered if current spending trends continue. To meet this investment need, the world will need to increase the proportion of GDP it dedicates to infrastructure to 3.5%, compared to the 3.0% forecasted under current trends.

The current trends forecast is equivalent to an average of $3.2 trillion a year between 2016 and 2040, compared to $2.0 trillion between 2007 and 2015. If countries were to match their best performing peers in terms of the resources they dedicate to infrastructure, an annual investment of $3.7 trillion would be needed. The cumulative value of global infrastructure investment if current trends continue between 2016 and 2040 is almost $79 trillion, compared to an estimated $93.7 trillion under the investment need scenario, which leaves a 19% investment gap.

According to the report, global infrastructure spending across seven sectors (electricity, road, telecoms, rail, water, port, and airport) has gradually increased from $1.8 trillion in 2007 to $2.3 trillion in 2015 (latest available), representing a CAGR of 2.9% per year.

Over the last decade, global infrastructure spending as a proportion of world GDP has remained broadly constant at around 3%. It has also accounted for around 12% of total global investment over most of this period, although it did rise to almost 15% of total investment in 2009 as infrastructure spending was sustained against a backdrop of falling investments in other sectors of the economy during the global financial crisis. This underscores the long-term nature of infrastructure projects, as infrastructure spending takes longer to respond to changing economic circumstances compared to business investment.

Below, we look at infrastructure spending needs and trends by region.

The United States

U.S. Infrastructure Under Strain and in Dire Need of Investment

Every four years, the American Society of Civil Engineers (ASCE) assembles a panel of civil engineers to analyze government data on 17 categories of infrastructure, including aviation, bridges, and roads. In its *2021 Infrastructure Report Card*, the ASCE gave the U.S. an overall infrastructure grade of C- (mediocre, requires attention), the first time in 20 years that it is out of the D range. Thanks to the recognition of the importance of infrastructure in sustaining our quality of life and economy by decision-makers at all levels of government, smart infrastructure policy and increased investment in our multimodal freight system, drinking water networks, and other areas have been championed by voters and lawmakers alike, which resulted in small but significant changes.

The ASCE noted three important trends in its analysis. First, backlogs in maintenance remain a problem, but asset management helps prioritize restricted funding. Despite staggering infrastructure deficits in sectors like transportation and wastewater, developing a good view of where the available money is most needed enhances overall system efficiency and public safety. To pinpoint leaks and target fixes, the drinking water industry, for example, has embraced asset management and emerging technologies. Second, governments at the state and local levels have made progress, with infrastructure categories such as ports, drinking water, and inland waterways have benefitted from increased federal spending or reform. Since 2010, 37 states have increased their gas taxes to finance vital transportation projects, while in November 2020, 98% of local infrastructure ballot initiatives were approved. Third, data is either sparse or unreliable in some infrastructure sectors. For example, sectors such as school buildings, levees, and stormwater lack robust condition details and asset inventories. Routine, accurate data should be the criteria for targeting investments and allocating funds.

The ASCE, in its latest *Infrastructure Report Card,* also found that although the U.S. has made incremental immediate improvements in some infrastructure categories, the long-term investment gap has continued to grow. If America were to achieve a grade of B (good, adequate for now) for its infrastructure, it will need to meet the investment gap of $2.59 trillion over the next decade, an increase from $2.1 trillion in the previous *Report Card*, the ASCE estimated. The ASCE also estimated that a continued underinvestment in U.S. infrastructure at current rates will cost the nation $10 trillion in GDP, more than 3 million jobs, and $2.4 trillion in exports by 2039.

Surface transportation requires the most funding needs and accounts for the highest funding gap. Bridges, rail, roads, and transit fall under this category.

- **Bridges.** Currently, 42% of the more than 617,000 bridges across the U.S. are at least 50 years old and 46,154, or 7.5%, of all U.S. bridges are structurally deficient (in “poor” condition). What is concerning is that 178 million daily trips are taken across these structurally deficient bridges. To

improve the condition, ASCE estimates spending on bridge rehabilitation will have to increase 58% to $22.7 billion from $14.4 billion annually.

- **Rail.** The U.S. rail network is divided into two types: freight rail and passenger rail. Although freight maintains a strong network primarily by direct shipper payments with an average investment of over $260,000 per mile, passenger rail needs government investment and has been plagued by a lack of federal support, resulting in a $45.2 billion backlog in good repair.

- **Roads.** Today, about 40% of all roads in the U.S. are in bad or marginal condition, leading to motorists being forced to pay over $1,000 a year in lost time and fuel. Furthermore, over 36,000 people still die on America's roads each year, while the number of pedestrian fatalities is rising.

- **Transit.** 45% of Americans lack access to transit. Meanwhile, much of the current infrastructure is aging, and transit authorities still lack the funds necessary to maintain their facilities in good working order. Over a 10-year span, 19% of transit vehicles and 6% of fixed guideway elements, including tracks and tunnels, were classified as in "poor" condition across the U.S. There is currently a $176 billion transit backlog, with a projected deficit of more than $270 billion by 2029.

The U.S. water systems are also under stress. The Environmental Protection Agency estimates that drinking water, wastewater, and irrigation systems will require $632 billion in additional investment up to the year 2028.

- **Drinking water**. The U.S. drinking water infrastructure system is made up of 2.2 million miles of underground pipes that deliver safe, reliable water to millions of Americans. Unfortunately, the system is aging and underfunded, with a water main break occurring every two minutes and an estimated 6 billion gallons of treated water lost each day in the U.S.

- **Wastewater**. America's more than 16,000 wastewater treatment plants are operating at 81% of their design capacity on average, with 15% exceeding it. Growing urban environments indicate that these facilities will need to handle a greater share of the nation's wastewater demand in the future. When many treatment plants and collection networks reach the end of their useful lives, the financial burden of operating and maintaining them will increase. According to estimates, utilities invested more than $3 billion in 2019 (latest available), or more than $18 per wastewater user, to replace nearly 4,700 miles of pipeline across the U.S.

- **Stormwater**. Wide concrete storm sewers, roadside ditches, and flood control reservoirs are all examples of stormwater systems, as are rain gardens and natural riverine systems. Although the number of stormwater utilities is increasing, with more than 40 states having at least one, impervious surfaces in cities and suburbs are also increasing, exacerbating urban flooding, which costs $9 billion annually. Stormwater systems are projected to perform poorly due to a lack of dedicated funding sources, complex governance and ownership mechanisms, extensive networks of aging infrastructure, increasingly strict water quality regulations, and alarming climate change forecasts. The high cost of retrofits needed to fix urban flooding and climate change is causing problems for many of the U.S.'s legacy stormwater systems.

CUMULATIVE INVESTMENT NEEDS BY SYSTEM BASED ON CURRENT TRENDS *(2020-2029, in $, billions)*			
Infrastructure System	**Total Needs**	**Funded**	**Funding Gap**
Surface Transportation	2,834.0	1,619.0	1,215.0
Drinking Water / Wastewater / Stormwater	1,045.0	611.0	434.0
Electricity	637.0	440.0	197.0
Airports	237.0	126.0	111.0
Inland Waterways & Marine Ports	42.0	17.0	25.0
Dams	93.6	12.5	81.0
Hazardous & Solid Waste	21.0	14.4	7.0
Levees	80.0	10.1	70.0
Public Parks & Recreation	77.5	9.5	68.0
Schools	870.0	490.0	380.0
Totals	**5,937.0**	**3,350.0**	**2,588.0**

Source: The American Society of Civil Engineers.

The table below shows the ASCE's assigned grade on 17 categories of infrastructure.

2021 INFRASTRUCTURE GRADES				
Aviation	⇧	D+	Public Parks	D+
Bridges	⇩	C	Rail	B
Dams		D	Roads	D
Drinking Water	⇧	C-	Schools	D+
Energy	⇧	C-	Solid Waste	C+
Hazardous Waste		D+	Stormwater	D
Inland Waterways	⇧	D+	Transit	D-
Levees		D	Wastewater	D+
Ports	⇧	B-	**Overall USA Infrastructure GPA**	**C-**

Source: American Society of Civil Engineers.

In the World Economic Forum's 2019 Global Competitiveness Report (the latest report with infrastructure ranking data), the overall quality of American infrastructure was in 13th place out of 141 countries considered in 2019, down from the ninth position both in 2017 and 2018. Infrastructure represents one of the "pillars" of the WEF Global Competitiveness Index. While the U.S. has some of the most resilient infrastructure systems in the world, conditions have deteriorated over time as infrastructure has aged. Most U.S. infrastructure was built in line with guidelines introduced 50 years ago, and these have become inadequate due to the more frequent extreme weather events today.

The Center for American Progress estimates the need for maintenance, repair, and improvement services for transportation and water facilities to be almost $1.5 trillion over the next 10 to 20 years. Much of this backlog is attributed to government spending not keeping pace with real GDP growth and demographic pressures. The Congressional Budget Office reported that following the brief uptick in infrastructure spending as part of the American Recovery and Reinvestment Act of 2009, federal expenditures on transportation and water have fallen as a percentage of GDP. That said, the passing of the Infrastructure Investment & Jobs Act in 2021 should help to course correct years of lagging federal government support. Investments by local governments and the private sector will continue to be essential in supporting large infrastructure projects.

CAPITAL SPENDING ON INFRASTRUCTURE IN 2017 (LATEST AVAILABLE)

(billions of nominal dollars)

	PUBLIC		TOTAL		
	FEDERAL	STATE & LOCAL	PUBLIC	PRIVATE	TOTAL
	TRANSPORTATION INFRASTRUCTURE				
Highways	43.8	50	93.8	n.a.	93.8
Mass transit (a)	8.7	12.5	21.2	4	25.2
Freight railroads	0	0	0	24.8	24.8
Passenger railroads	1.8	0	1.8	0	1.8
Aviation	4.4	5.9	10.3	29.6	39.9
Water transportation (b)	1.5	2.1	3.6	5.5	9.1
Total Transportation	**60.2**	**70.5**	**130.7**	**63.9**	**194.6**
	OTHER INFRASTRUCTURE				
Drinking Water and wastewater	3.5	28	31.5	n.a.	31.5
Energy (c)	3.5	10.4	13.9	134.5	148.4
Telecommunications (d)	0.9	n.a.	0.9	240.9	241.8
Pollution control and waste disposal (e)	8.7	4.2	12.9	7.6	20.5
Postal facilities	0.5	0	0.5	0	0.5
Prisons	0.9	4.6	5.5	n.a.	5.5
Schools (f)	0.5	95.7	96.2	41.8	138
Water and other natural resources (g)	4.1	5.4	9.5	n.a.	9.5
Total utilities and other	**22.6**	**148.3**	**170.9**	**424.8**	**595.7**
Total	**82.8**	**218.8**	**301.6**	**488.7**	**790.3**

a. Includes subways, bus transportation, and commuter rail.

b. Includes inland waterways, harbors, and port facilities.

c. Includes electricity generation, transmission, and distribution; natural gas transmission and distribution; and oil pipelines.

d. Includes wired and wireless telecommunications, Internet service providers, fiber-optic networks, and broadcasting.

e. Includes disposal of hazardous waste and solid waste, includes a small amount of private spending on drinking water and wastewater treatment systems.

f. Includes primary, secondary, higher, vocational, and special education.

g. Includes conservation, dams, and flood control.

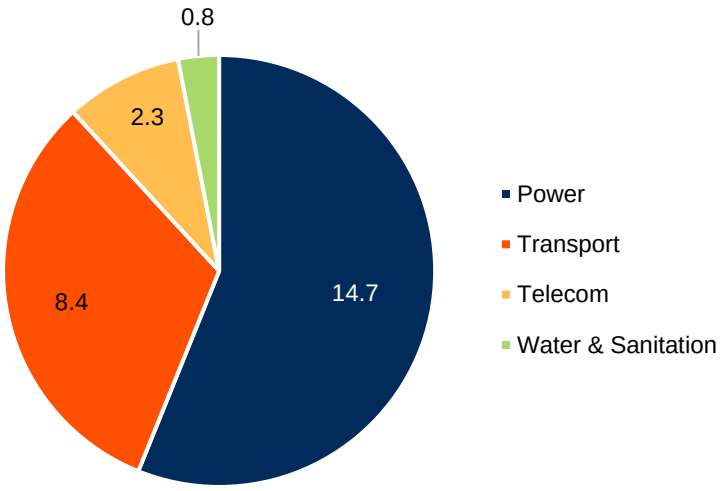
Source: Committee for Economic Development of The Conference Board (CED)

Asia

According to the Asian Development Bank's "Meeting Asia's Infrastructure Needs" report, Asia will need to spend $26 trillion (or $1.7 trillion per year from 2016 to 2030) to sustain its growth momentum, eradicate poverty, and adapt to climate change. Of the total investment needs over the 15 years, $14.7 trillion will be for power and $8.4 trillion for transport. Investments in telecommunications will reach $2.3 trillion, with water and sanitation costs at $800 billion over the period.

According to the Asian Development Bank, East Asia will account for 61% of climate-adjusted investment needs through 2030. As a percentage of GDP, however, the Pacific leads all other subregions, requiring investments valued at 9.1% of GDP. This is followed by South Asia at 8.8%, Central Asia at 7.8%, Southeast Asia at 5.7%, and East Asia at 5.2% of GDP.

ASIA'S INVESTMENT NEEDS BY SECTOR
(2016-2030, $, in trillions)



Source: Asian Development Bank.

INFRASTRUCTURE INVESTMENTS IN ASIA BY REGION 2016-2030
(estimates are climate-adjusted)

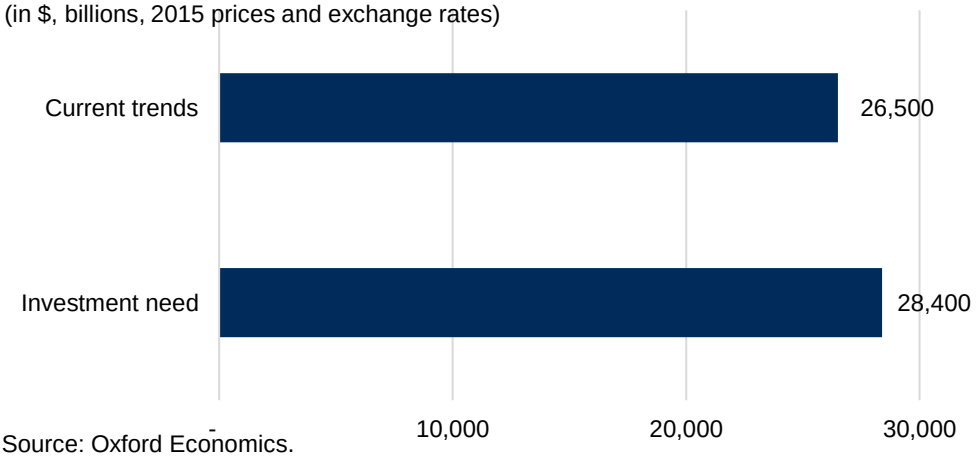
	INVESTMENT NEEDS	ANNUAL AVERAGE
Central Asia	565.0	38.0
East Asia	16,062.0	1,071.0
PRC	15,267.0	1,018.0
South Asia*	6,347.0	423.0
India	5,152.0	343.0
Southeast Asia	3,147.0	210.0
Indonesia	1,229.0	82.0
The Pacific	46.0	3.1
Asia and the Pacific	**26,167.0**	**1,745.1**

Source: Asian Development Bank.

China

A huge infrastructure investment program has accompanied rapid economic development in China over the last decade. Oxford Economics estimates that China accounted for nearly 30% of all global infrastructure investment between 2007 and 2015. While the rate of infrastructure investment growth is expected to moderate from 2016 to 2040, similar to the pattern for overall investment within the Chinese economy, China is expected to maintain a similar share of global infrastructure investment in the future.

CHINA TOTAL INFRASTRUCTURE SPENDING NEEDS, 2016-2040
(in $, billions, 2015 prices and exchange rates)



Source: Oxford Economics.

Belt and Road Initiative

The Silk Road was a network of trade routes connecting Europe, the Middle East, and China. It was central to the economic, cultural, political, and religious interactions between these regions as far back as the 2nd century BCE. In 2013, Chinese President Xi Jinping announced the revival of the Silk Road through the launch of the Silk Road Economic Belt and the 21st Century Maritime Silk Road, two components of the $4-$8 trillion plan eventually referred to as the Belt and Road Initiative (BRI). The Economic Belt refers to the overland routes for road and rail transportation through landlocked Central Asia along the famed historic trade routes to the regions west of Yumen Pass, which includes a railroad connecting China to London, gas pipelines from the Caspian Sea to China, and a high-speed train network in Southeast Asia. The “Road” refers to a chain of seaports stretching from Southeast Asia to South Asia, the Middle East, and Africa. Other BRI infrastructure investments also include oil refineries, industrial parks, power plants, skyscrapers, airports, dams, and fiber-optic networks – all designed to facilitate global trade with China. As of March 2022, 147 countries have reportedly signed agreements for these projects, according to Green Finance & Development Center (GFDC).

The BRI is funded mostly through bank loans, led by China’s three government policy banks, large state-owned banks, and sovereign wealth funds such as the Silk Road Fund. International financial institutions such as the World Bank, Asian Development Bank, Asian Infrastructure Investment Bank, and New Development Bank also provide loans to BRI projects. However, while loans are offered to developing countries by global lenders, there are no specific attachments to projects labeled “belt and road.”

CFRA believes that the Belt and Road Initiative is based on both geopolitical and economic motivations. Apart from the Made in China 2025 economic development strategy, we see the BRI as one of the key planks of China’s industrial policy that aims to make China dominant in global high-tech manufacturing. We think the BRI serves as a pushback against America's much-touted "pivot to Asia," as well as a way for China to develop new investment opportunities, expand export markets, and raise Chinese income and domestic consumption.

Although BRI investments have been welcomed by several developing countries in need of funding for infrastructure, the initiative has also sparked opposition. BRI loans are seen as burdensome for some countries that take on large amounts of debt to fund the necessary infrastructure, as projects are built with low-interest loans (the majority of which are 1% or below) as opposed to aid grants. Some BRI investments required the use of Chinese firms and lacked transparency in their bidding processes. As a result, contractors have inflated costs, leading to canceled projects and political backlash.

Faced with growing criticism and a slowing economy, China has tightened oversight of projects and now gauges a country's ability to repay before approving credit. Annual loan commitments to Africa have fallen from a high of $30 billion in 2016 to $7 billion in 2019, a study by the China Africa Research Initiative at Johns Hopkins University shows. China's loan commitments (from 2000 to 2019) in Africa totaled $153 billion.

Covid-19 has forced China to scale back some of its BRI projects, as Chinese financial and construction companies involved in the program are still recovering from the aftermath. Local governments and enterprises are still recovering from the economic and financial turmoil, limiting their resources available for BRI. In June 2020, China's Ministry of Foreign Affairs said that about 20% of belt and road projects had been "seriously affected" by the pandemic, citing restrictions on travel and the flow of goods across borders, as well as the impact of measures to contain the virus, among reasons for the delay in some projects. In addition, several participating countries saw an escalation in geopolitical risks, intensified by the pandemic due to the need to compete for strategic materials. The pandemic has also affected trade and investments in BRI countries, which could increase their reliance on the program.

In the first half of 2022, BRI investment decreased to $28.4 billion compared to $29.6 billion in the first half of 2021, according to the China Belt and Road Initiative (BRI) Investment Report H1 2022 from GFDC.

India

The second largest infrastructure market in Asia is India. The country's GDP per capita in 2022 stood at around $2,277, compared to China's 2021 level of $12,556, according to World Bank. As such, while population growth in India is expected to drive significant demand for infrastructure in India over the next 25 years, this infrastructure need will be significantly lower in absolute terms than in China, which is at a more advanced stage of development.

In October 2019, Union Finance Minister Nirmala Sitharaman said India plans to spend $1.4 trillion on its infrastructure through 2024 as part of its target of becoming a $5 trillion economy by 2024. By comparison, the country spent $1.1 trillion on infrastructure from 2009 to 2018. The Asian Development Bank has highlighted that a whopping $4.4 trillion is required to resolve India's demand by 2030, and that would entail deployment from both private and public coffers.

To increase infrastructure investment, India has launched financial vehicles such as Infrastructure Debt Funds, Real Estate Investment Trusts, and Infrastructure Investment Trusts, and has established a framework for municipal bonds. The country is also already adopting PPP models and the Asset Recycling model, which monetizes existing infrastructure assets through sale or lease to the private sector, followed by investing in new infrastructure using the proceeds to modernize existing infrastructure and support new infrastructure.

Another initiative is the National Investment and Infrastructure Fund (NIIF), the country's first sovereign wealth fund, which was set up by the government in February 2015. With $4.3 billion in asset under management, the fund aims to channel investments into infrastructure assets and related businesses that will likely benefit from the long-term growth trajectory of the country's economy.

India's Budget 2022-23 will be about $123 billion, a 4.6% increase over the revised estimate for 2021-22. Fiscal deficit in 2022-23 is targeted at 6.4% of GDP, lower than the revised estimate of 6.9% of GDP in 2021-22. The Budget allocates $26 billion to road transport and highway infrastructure, a 52% increase compared to the revised estimate of 2021-22, amid the Finance Ministry's aim to expand national highways by 25,000 km during financial years 2022-23. Railways are allocated $18 billion, 17% higher than the revised estimate for 2021-22. Spending on rural development will be decreased by 11% to $18 billion.

Developed Asia

Elsewhere in Asia, infrastructure challenges and opportunities are closely related to development levels. Japan's infrastructure, alongside that of Singapore, Hong Kong, and South Korea, is ranked among the best in the world, according to the World Economic Forum's Global Competitiveness Report. The launching of high-speed rail projects since the 1960s indicates urbanization is already mature. Therefore, we expect the maintenance of current facilities instead of greenfield investment to account for the bulk of spending in developed Asia.

Developing Asia

In developing Asia, the room for productive investment is massive. A joint report by the United Nations and the Association of Southeast Asian Nations (ASEAN) published in 2021 estimates infrastructure investment needs in ASEAN to be between $110 billion and $184 billion annually during 2015-2030. Infrastructure development in ASEAN has attracted the participation of many Asian, European, and U.S. multinational enterprises (MNEs). For example, in 2021, GS Energy (Republic of Korea) partnered with a local Vietnamese company to construct a $3 billion LNG power plant. An important source of funding for the region comes from China due to its deep pockets and active participation in the region through its BRI.

Africa

Africa's economy bounced back in 2021 following a pandemic down year. Africa's GDP expanded 3.4%, following a -2.1% in 2020. In 2020, Africa had seven of the ten fastest-growing economies in the world; GDP growth, capital inflows, and trade volumes were improving, and 23 countries had achieved medium to high human development status, based on the United Nations Development Programme's 2020 Human Development Report.

An increasing, urbanizing population of more than 1 billion people is the main driving force of infrastructure demand in Africa. As Africa's infrastructure develops, the continent will be able to further tap into its enormous human and natural resources, resulting in increased jobs and government revenues, allowing the government to invest in more infrastructure, providing even more investment opportunities for investors.

Infrastructure investment opportunities abound, ranging from conventional sectors to those that have gained urgency due to the pandemic, such as information and communication technology (ICT), health care, sanitation, and education. Private investors are becoming more interested in health infrastructure, which has historically been the realm of the public sector. The main driving force of this interest is a growing middle class that is becoming more health-conscious, whose purchasing power is increasing, has access to health insurance, and is willing as well as able to pay for modern healthcare. Over the next decade, an additional $100 billion would be needed to develop the ICT sector to connect all Africans.

Meanwhile, power generation has exploded in the last decade, leveraging on the continent's abundant solar, wind, geothermal, and hydropower resources.

The implementation of the African Continental Free Trade Area (AfCFTA) – a free trade area founded in 2018, with trades commencing January 1, 2021 – could expand regional markets and provide investors with economies of scale. The AfCFTA was created by the African Continental Free Trade Agreement and consisted of 54 out of the 55 African Union countries. The World Bank projects that, if implemented fully, Africa's income could increase by $450 billion by 2035, a 7% increase from 2019 levels, while the rest of the world's income could be boosted by $76 billion. The AfCFTA could also lead to increased funding for regional projects. Regional projects are projects with direct beneficiaries in more than one country, which can either be cross-border or other integrated regionally involving at least two countries or national projects.

Europe

Europe Must Catch Up After Years of Chronic Neglect

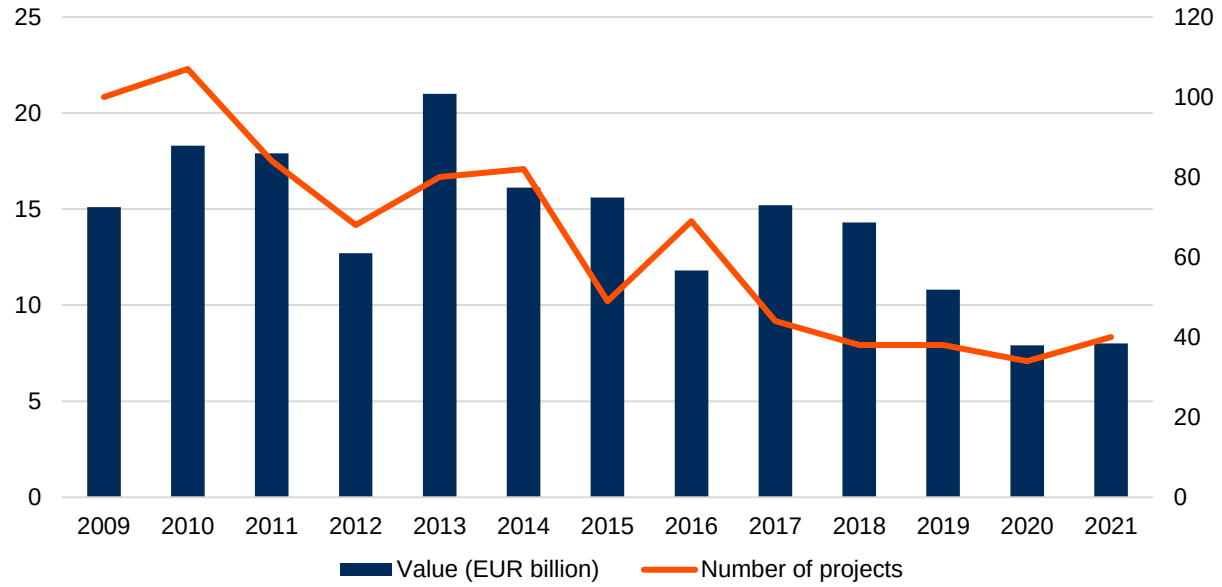
The need to invest more in Europe's infrastructure has been broadly discussed in the context of the EU's Multiannual Financial Framework for 2021-2027. Infrastructure investment in Europe had a marginal increase in 2021 at 1.7% despite a reduction in nominal terms, mainly due to a larger contraction in its GDP, according to data from EIB's Investment Report 2021/2022.

The decline in infrastructure investment activities has not been due to saturation of demand, as one-third of large municipalities in Europe said infrastructure investment was below needs. In some parts of Europe (particularly in weaker regions), this share is even higher. Municipalities often see infrastructure gaps in urban transportation, information, and communications technology (ICT), infrastructure, and social housing. The government's lower spending accounted for most (approximately 80%) of the overall decline in infrastructure investment. A shift in public outlays from gross fixed capital formation (GFCF) to current expenditure is at the core of this decrease. While governments have recently presented plans to reverse this trend in some countries, budgetary conditions in others suggest a continuation of this negative development.

That said, the European PPP market has undergone significant transformation in the decade since the crisis, with a brief revival in 2017 driven by increased use of broadband networks. Since 2017, however, the PPP market has continued its downward trend. In 2021, the total value of PPP transactions that reached financial close in the European market stood at EUR8.0 billion, a 13% decrease from EUR9.2 billion in 2020, while the number of PPP transactions fell to 40 in 2021, compared to 43 in 2020, according to the EIB. There has also been a steady decline in government-pay PPPs since 2014, when they accounted for 89% of the transactions reaching financial close.

EUROPEAN PPP MARKET BY VALUE AND NUMBER OF PROJECTS

(EUR, in billions) *(no. of projects)*



Source: EDEC.

We attribute the decline in PPPs to an overreaction to strong enthusiasm for PPPs before the crisis. Retrospectively, some of the enthusiasm for pre-crisis PPPs was possibly driven by overwhelming confidence in the private sector as a generally superior financier of infrastructure projects and/or a desire on the part of governments to keep de facto (contingent) government liabilities off their balance sheets. The post-crisis years brought to light these issues and led to increased opposition to PPPs in several markets. The cost-effectiveness of several PPPs was also questioned by the U.K. National Audit Office in a report.

The negative development in infrastructure investment led to a backlog of investment, putting Europe's capacity to reach its policy goals at risk. The EU has imposed policy goals it wants to achieve by 2030 in various areas (*e.g.,* climate, energy, and broadband penetration). The EIB estimates that to achieve the goals related to infrastructure, additional investments of EUR155 billion per year will be necessary. If the dynamics in infrastructure investment are not reversed, this goal will become more and more difficult to achieve.

Germany's Federal Transport Infrastructure Plan

Germany's 2030 Federal Transport Infrastructure Plan (FTIP) lays the transport policy foundations for the next 10 years. The total level of funding provided by the FTIP 2030 is around EUR269.6 billion. About 49.3% will be spent on road building, 41.6% on railroads, with the remaining allocated to waterways. About two-thirds of the funds will be used on structural maintenance, and the remaining allocated to new infrastructure construction.

Germany's Energiewende

The push towards clean energy is especially evident in Germany, which has pledged to decommission all 17 nuclear reactors by the end of 2022. The country's "Energiewende" is a planned transition to a low-carbon, nuclear-free economy that aims to cut greenhouse gas emissions (GHG) by 40% by 2020, 55% by 2030, and up to 95% in 2050, compared to 1990 levels. Germany's GHG emissions fell 8.7% in 2020, as the Covid-19 pandemic threw its economy into recession, and lockdown measures put a damper on

public life and mobility. Ironically, the pandemic has helped Germany achieve its 2020 target. Compared to 1990, German emissions have fallen by 40.8%, hitting its original target of 40% by 2020, according to data from BMWi and UBA. Not surprisingly, Germany's greenhouse gas emissions grew significantly once the economy recovers, reaching a 4.5% increase in 2021, which puts Germany far behind on its climate targets in 2021.

HOW TO ANALYZE A COMPANY IN THIS INDUSTRY

At CFRA, we recommend a top-down approach to valuation. An examination of the industry drivers outlined on page 8 and 9—GDP growth, interest rates, exchange rates, etc.—is a good starting point.

Industry Drivers

◆ **Gross domestic product.** We look at GDP on both a global and domestic level. International GDP is compiled and forecast by the International Monetary Fund (IMF), Action Economics, Oxford Economics, and other sources. GDP measures the total value of goods and services produced in a country. GDP is an important indicator used to gauge the health of a country's economy, which in turn supports or hurts demand for products and services. Per capita GDP is simply the total GDP of a country, divided by the number of citizens.

◆ **Key commodity prices.** The prices of key commodities used in the construction of infrastructure directly affects the cost of construction. Commodity prices are available on financial exchanges or through data companies such as S&P and Bloomberg.

◆ **Interest rates.** A typical infrastructure project uses 60%-75% debt financing, and the industry have relied on low interest rates over the past decade to grow substantially. Interest rates are generally available on the websites of a country's central bank.

◆ **Exchange rates.** As most major commodities are traded in the U.S. dollar, the cost of key commodities used in construction for countries outside the U.S. will be more expensive when the dollar strengthens relative to their currencies, which could discourage infrastructure investment.

Comparative Analysis Is Critical

An investor must identify a company's competitive advantages—and its disadvantages. What are the company's key products and markets, and how does it differentiate itself from its peers? How does its current strategy compare with its plans, and how do they both compare with the strategies of competitors? Has management been able to articulate strategy, and does past performance indicate it will be successful in executing its plans? Does the company have an edge over its competitors? If so, is it likely to maintain that edge?

An investor needs to understand how each company has positioned itself concerning these factors and whether the strategy makes sense, given the trend seen for overall market demand.

Peer Comparisons

When looking at relative valuation measures—such as price-to-earnings (P/E), price-to-sales (P/S), or any other metric that involves comparing a company with its peers—it is important to find the best like-for-like comparison. To ascribe a multiple based on relative valuation to a vendor, it is important to consider the makeup of its revenue and earnings and decide which of its peers compare most closely. Barring major structural or fundamental differences, companies with the same product focus and addressing common target markets tend to be valued similarly.

Growth Is Relative

How does a company's financial performance compare with others in its peer group? Again, while absolute numbers are an important part of the financial assessment of any company, comparing performance and financial ratios with those of its peers is critical. For example, it is clearly a cause for concern if a company achieved revenue growth of 5% in a year in which the average industry growth rate was 10%. Why did the company underperform? Similarly, if a company's growth outpaces the average, investors will want to uncover the reasons. Is that above-average growth rate sustainable?

GLOSSARY

Asset recycling—Involves the monetization of existing public assets through sale or lease to the private sector, with all funds received being reinvested in new infrastructure.

Backlog—The buildup orders, work, or paperwork that must be completed by a company.

Belt and Road Initiative—A global development strategy adopted by the Chinese government in 2013 involving infrastructure development and investments in nearly 70 countries and international organizations in Asia, Europe, and Africa.

Brownfield investments—Occur when an entity purchases or leases an existing facility to begin new production.

Concessions—A grant of rights, land, or property by a government, local authority, corporation, individual, or other legal entity.

Data Center—A building, dedicated space within a building, or a group of buildings used to house servers and associated components, such as telecommunications and storage systems.

Developed economy—A developed country with a relatively high level of economic growth and security.

Developing economy—Also called a less developed economy or underdeveloped country: a nation with an underdeveloped industrial base, and a low Human Development Index (HDI) relative to other countries.

EC-19—The 19 companies/countries that make up the EUROCONSTRUCT network: Austria, Belgium, Czech Republic, Denmark, Finland, France, Germany, Hungary, Ireland, Italy, Netherlands, Norway, Poland, Portugal, Slovak Republic, Spain, Sweden, Switzerland, and the U.K.

Emerging market—A country with low incomes and high growth prospects.

Government grant—A financial award given by the federal, state, or local government authority for a beneficial project of a certain kind.

Greenfield project—One that lacks constraints imposed by prior work. The analogy is to that of construction on greenfield land where there is no need to work within the constraints of existing buildings or infrastructure.

Gross fixed capital formation (GFCF)—The acquisition of produced assets (including purchases of second-hand assets), including the production of such assets by producers for their own use, minus disposals.

High-speed rail—A type of rail transport that runs significantly faster than traditional rail traffic, using an integrated system of specialized rolling stock and dedicated tracks.

Infrastructure—Fundamental facilities and systems serving a country, city, or other area, including the services and facilities necessary for economic and social development the world over.

Infrastructure investment gap—The difference between a region's investment need and what would be spent under current trends.

Infrastructure maintenance—This covers spending on preservation of the existing infrastructure systems.

Internal rate of return (IRR)— The internal rate of return is a metric used in financial analysis to estimate the profitability of potential investments. IRR measures the rate of return on a project or investment while excluding external factors by using a discount rate that makes the net present value (NPV) of all cash flows equal to zero in a discounted cash flow analysis.

Megaprojects—Large-scale, complex ventures that typically cost $1 billion or more, take many years to develop and build, involve multiple public and private stakeholders, are transformational, and impact millions of people.

Public-private partnership—Also known as PPP, or P3, it is a cooperative arrangement between two or more public and private organizations.

Smart city—A municipality that uses information and communication technologies (ICT) to increase efficiency, share information with the public, and improve both the quality of government services and citizen welfare.

Urbanization—The population shift from rural areas to urban areas, the gradual increase in the proportion of people living in urban areas, and the ways in which each society adapts to this change.

WEF Competitiveness Index—The Global Competitiveness Index integrates the macroeconomic and the micro/business aspects of competitiveness into a single index.

INDUSTRY REFERENCES

MARKET RESEARCH FIRMS

Deloitte
deloitte.com
A leading global provider of audit and assurance, consulting, financial advisory, risk advisory, tax & legal, and related services.

McKinsey & Company
mckinsey.com
A global management consulting firm.

Office for National Statistics
www.ons.gov.uk
The U.K.'s largest independent producer of official statistics and the recognized national statistical institute of the U.K.

Overseas Development Institute (ODI)
odi.org
An independent, global think tank, with a vision of a sustainable and peaceful world in which every person thrives.

Statista
statista.com
A German company specializing in market and consumer data.

Synergy Research
www.srgresearch.com
Provides market intelligence and analytics for the networking and telecoms industry.

TRADE ASSOCIATIONS

American Society of Civil Engineers
asce.org
A provider of technical and professional conferences and continuing education, the world's largest publisher of civil engineering content, and an authoritative source for codes and standards that protect the public.

Construction Industry Round Table
cirt.org
A network of peers across the design and construction community who convene to share, learn, and innovate.

Indian Ports Association
ipa.nic.in
The association was constituted in 1966 under *Societies Registration Act*, primarily with the idea of fostering growth and development of all Major Ports that are under the supervisory control of the India Ministry of Shipping.

Royal Institution of Chartered Surveyors
rics.org
A professional body promoting and enforcing the highest international standards in the valuation, management and development of land, real estate, construction, and infrastructure.

GOVERNMENT AGENCIES

Central Electricity Authority of India
cea.nic.in
Advises the Indian government on policy matters and formulates plans for the development of electricity systems.

Congressional Budget Office
cbo.gov
A federal agency within the legislative branch of the U.S. government that provides budget and economic information to Congress.

India's Ministry of Railways
indianrailways.gov.in
A ministry in the Government of India, responsible for the country's rail transport.

U.K.'s Department for Business, Energy & Industrial Strategy (BEIS)
gov.uk/government/organisations/department-for-business-energy-and-industrial-strategy#content
A department of the government of the United Kingdom that brought together responsibility for business, industrial strategy, and science and innovation with energy and climate change policy, merging the functions of the former Department for Business, Innovation and Skills (BIS) and Department of Energy and Climate Change (DECC)

U.S. Travel Association
ustravel.org
The national, non-profit organization representing the travel industry.

U.S. Government Accountability Office (GAO)
gao.gov
A legislative branch government agency that provides auditing, evaluation, and investigative services for the U.S. Congress.

INTERNATIONAL AGENCIES

Asian Development Bank
adb.org
Envisions a prosperous, inclusive, resilient, and sustainable Asia and the Pacific, while sustaining its efforts to eradicate extreme poverty in the region.

Business & Sustainable Development Commission
businesscommission.org
Created to make the business case for the Sustainable Development Goals.

Euroconstruct
euroconstruct.org
Aims to provide decision-makers in the construction business and related markets and in ministries, agencies and national and international associations with information, analyses, and forecasts to enable them to plan business more effectively.

European Free Trade Association
efta.int
The intergovernmental organization of Iceland, Liechtenstein, Norway, and Switzerland. It was set up in 1960 by its member countries for the promotion of free trade and economic integration between its members.

European Investment Bank
eib.org
The European Union's nonprofit long-term lending institution established in 1958 under the Treaty of Rome. As a "policy-driven bank" whose shareholders are the member states of the EU, the EIB uses its financing operations to bring about European integration and social cohesion.

Eurostat
ec.europa.eu/eurostat/home?
Its main responsibilities are to provide statistical information to the institutions of the European Union (EU) and to promote the harmonization of statistical methods across its member states and candidates for accession as well as European Free Trade Association (EFTA) countries.

Global Infrastructure Hub
gihub.org
Works with public and private sectors globally to increase the flow and quality of infrastructure projects around the world.

Green Finance & Development Center
greenfdc.org
Provides independent research, advisory and capacity building for governments, financial institutions and civil society on green finance and investments with a focus on China and emerging economies.

International Monetary Fund (IMF)
imf.org
An organization of 189 countries, working to foster global monetary cooperation, secure financial stability, facilitate international trade, promote high employment and sustainable economic growth, and reduce poverty around the world.

International Renewable Energy Agency
irena.org
An intergovernmental organization supporting countries in their transition to a sustainable energy future.

Organization for Economic Co-operation and Development (OECD)
oecd.org
An intergovernmental economic organization with 36 member countries, founded in 1961 to stimulate economic progress and world trade.

United Nations Conference on Trade and Development (UNCTAD)
unctad.org
The main U.N. body dealing with trade, investment, and development issues.

World Bank
worldbank.org
With 189 member countries, the World Bank Group is a unique global partnership fighting poverty worldwide through sustainable solutions.

World Economic Forum
weforum.org
An independent international organization committed to improving the state of the world by engaging business, political, academic, and other leaders of society to shape global, regional, and industry agendas.

OTHER SOURCES OF INFORMATION

Center for American Progress
americanprogress.org
An independent nonpartisan policy institute that is dedicated to improving the lives of all Americans, through bold, progressive ideas, as well as strong leadership and concerted action.

Committee for Economic Development of The Conference Board (CED)
ced.org
An American nonprofit and nonpartisan public policy think tank.

Fails Management Institute (FMI)
fminet.com
A management consulting and investment banking firm dedicated to construction & engineering across North America.

Infrastructure Investor
www.infrastructureinvestor.com
Covers the flow of private capital into infrastructure projects around the world.

Mercer
mercer.com
An American asset management and consulting firm.

Preqin
preqin.com
Provides financial data and information on the alternative assets market, as well as tools to support investment in alternatives.

PRS Legislative Research
prsindia.org
an Indian non-profit organization that was established as an independent research institute to make the Indian legislative process better informed, more transparent and participatory.

COMPARATIVE COMPANY ANALYSIS

				Operating Revenues														
				Million $							CAGR (%)			Index Basis (2013=100)					
Company	Country		Yr. End	2021	2020	2019	2018	2017	2016	2015	10-Yr.	5-Yr.	1-Yr.	2021	2020	2019	2018	2017	2016
AIRPORT SERVICES																			
AENA S.M.E., S.A.	Spain		DEC	2,653.4	2,684.9	4,992.5	4,826.9	4,761.4	3,920.8	3,759.9	-0.3	-8.9	6.3	71	71	133	128	127	104
CONSTRUCTION & ENGINEERING																			
VINCI SA	France		DEC	57,125.0	53,967.0	54,932.1	50,783.1	49,324.0	40,829.7	42,705.4	2.9	5.4	13.9	134	126	129	119	115	96
FERROVIAL, S.A.	Spain		DEC	7,708.4	7,990.2	6,793.9	6,567.4	6,186.4	11,356.5	10,536.0	-0.9	-8.8	3.8	73	76	64	62	59	108
QUANTA SERVICES, INC.	United States		DEC	12,980.2	11,202.7	12,112.2	11,171.4	9,466.5	7,651.3	7,572.4	12.0	11.1	15.9	171	148	160	148	125	101
BOUYGUES SA	France		DEC	42,811.3	42,519.9	42,655.1	40,920.5	39,713.0	33,674.7	35,319.0	1.4	3.4	8.3	121	120	121	116	112	95
EIFFAGE SA	France		DEC	21,832.1	20,378.0	20,974.1	19,338.2	18,453.4	15,102.9	15,270.2	3.4	6.1	15.2	143	133	137	127	121	99
SKANSKA AB (PUBL)	Sweden		DEC	15,910.5	19,523.9	18,502.3	19,324.0	19,287.1	16,014.4	18,130.3	1.9	-0.2	-10.3	88	108	102	107	106	88
KAJIMA CORPORATION	Japan	#	MAR	17,126.1	17,244.1	18,686.9	17,816.7	17,236.7	16,339.1	15,510.0	3.7	1.8	-5.2	110	111	120	115	111	105
TAISEI CORPORATION	Japan	#	MAR	12,708.5	13,383.0	16,276.0	14,898.3	14,928.6	13,338.6	13,758.4	2.0	-0.9	-15.5	92	97	118	108	109	97
ACS, ACTIVIDADES DE CONSTRUCCIÓN Y SERVICIOS, S.A.	Spain		DEC	31,658.4	35,848.2	43,825.7	41,953.4	41,887.5	33,747.4	36,161.2	-0.2	-2.7	-5.0	88	99	121	116	116	93
OBAYASHI CORPORATION	Japan	#	MAR	15,834.8	15,975.7	19,265.8	18,407.0	17,896.1	16,795.7	15,822.7	4.6	-0.1	-14.8	100	101	122	116	113	106
CONSTRUCTION MACHINERY AND HEAVY TRUCKS																			
CATERPILLAR INC.	United States		DEC	50,971.0	41,748.0	53,800.0	54,722.0	45,462.0	38,537.0	47,011.0	-1.6	5.8	22.1	108	89	114	116	97	82
AB VOLVO (PUBL)	Sweden		DEC	41,164.6	41,210.0	46,241.3	43,978.9	40,649.1	33,260.9	37,020.8	1.8	4.3	10.0	111	111	125	119	110	90
PACCAR INC	United States		DEC	23,522.3	18,728.5	25,599.7	23,495.7	19,456.4	17,033.3	19,115.1	3.7	6.7	25.6	123	98	134	123	102	89
CUMMINS INC.	United States		DEC	24,021.0	19,811.0	23,571.0	23,771.0	20,428.0	17,509.0	19,110.0	2.9	6.5	21.3	126	104	123	124	107	92
DAIMLER TRUCK HOLDING AG	Germany		DEC	45,222.3	44,052.6	51,895.4	50,034.3	50,034.3	0.0	0.0	NA	NA	10.4	NA	NA	NA	NA	NA	NA
TOYOTA INDUSTRIES CORPORATION	Japan	#	MAR	22,277.0	19,153.0	20,179.5	19,988.7	18,868.9	15,023.7	19,837.5	3.7	-1.0	-2.4	112	97	102	101	95	76
EPIROC AB (PUBL)	Sweden		DEC	4,384.5	4,398.3	4,372.7	4,308.0	3,831.6	2,985.7	3,395.4	NA	7.9	9.8	129	130	129	127	113	88
KOMATSU LTD.	Japan	#	MAR	23,076.9	19,796.9	22,721.4	24,593.8	23,549.8	16,170.3	16,509.1	1.7	3.4	-10.4	140	120	138	149	143	98
WESTINGHOUSE AIR BRAKE TECHNOLOGIES CORPORATION	United States		DEC	7,822.0	7,556.0	8,200.0	4,363.5	3,881.7	2,931.2	3,308.0	14.8	21.7	3.5	236	228	248	132	117	89
ALSTOM SA	France	#	MAR	17,186.2	10,311.0	9,012.1	9,059.5	9,050.1	7,812.2	7,836.7	-8.3	5.0	7.1	219	132	115	116	115	100

Note: Data as originally reported. CAGR-Compound annual growth rate. #Of the following calendar year.
Source: S&P Capital IQ.

Operating Revenues

Company	Country		Yr. End	Million $ 2021	2020	2019	2018	2017	2016	2015	CAGR (%) 10-Yr.	5-Yr.	1-Yr.	Index Basis (2013=100) 2021	2020	2019	2018	2017	2016
CONSTRUCTION MATERIALS																			
CRH PLC	Ireland		DEC	30,981.0	27,587.0	28,132.0	27,449.0	26,000.2	26,168.1	23,248.4	5.5	4.6	12.3	133	119	121	118	112	113
HOLCIM LTD	Switzerland		DEC	29,435.8	26,156.5	27,591.4	27,913.7	27,726.4	26,486.1	23,555.5	2.6	-0.1	16.0	125	111	117	119	118	112
VULCAN MATERIALS COMPANY	United States		DEC	5,552.2	4,856.8	4,929.1	4,382.9	3,890.3	3,592.7	3,422.2	8.0	9.1	14.3	162	142	144	128	114	105
MARTIN MARIETTA MATERIALS, INC.	United States		DEC	5,084.7	4,432.1	4,422.3	3,980.4	3,723.5	3,578.7	3,268.1	12.8	7.3	14.7	156	136	135	122	114	110
JAMES HARDIE INDUSTRIES PLC	Ireland	#	MAR	3,614.7	2,908.7	2,606.8	2,506.6	2,054.5	1,921.6	1,728.2	9.6	11.0	11.6	209	168	151	145	119	111
HEIDELBERGCEMENT AG	Germany		DEC	21,365.9	21,604.8	21,224.9	20,767.7	20,834.1	16,089.5	14,696.2	3.8	4.3	6.4	145	147	144	141	142	109
CEMEX, S.A.B. DE C.V.	Mexico		DEC	14,548.0	12,814.0	12,959.0	13,531.0	13,531.0	12,110.8	12,728.9	-22.7	-43.4	13.5	114	101	102	106	106	95
HIGHWAY AND RAILTRACKS																			
TRANSURBAN GROUP	Australia		JUN	2,163.7	2,187.9	2,921.0	2,439.3	2,096.5	1,646.4	1,431.5	10.8	5.5	-8.9	151	153	204	170	146	115
ATLANTIA SPA	Italy		DEC	7,159.1	6,647.1	13,943.4	8,503.5	7,407.2	6,365.2	6,369.8	3.0	0.9	15.8	112	104	219	133	116	100
CCR S.A.	Brazil		DEC	2,197.6	1,904.3	2,634.8	2,509.7	3,188.1	3,071.6	2,140.4	9.1	4.1	23.8	103	89	123	117	149	144
OIL & GAS STORAGE AND TRANSPORTATION																			
ENBRIDGE INC.	Canada		DEC	37,195.9	30,675.7	38,602.7	33,988.0	35,386.9	25,729.2	24,356.4	5.8	6.4	20.4	153	126	158	140	145	106
KINDER MORGAN, INC.	United States		DEC	16,610.0	11,700.0	13,209.0	14,144.0	13,705.0	13,058.0	14,403.0	7.7	4.9	42.0	115	81	92	98	95	91
ONEOK, INC.	United States		DEC	16,540.3	8,542.2	10,164.4	12,593.2	12,173.9	8,920.9	7,763.2	1.1	13.1	93.6	213	110	131	162	157	115
PEMBINA PIPELINE CORPORATION	Canada		DEC	6,817.1	4,672.0	5,574.3	5,387.2	4,305.9	3,175.2	3,340.6	17.8	15.1	44.9	204	140	167	161	129	95
TC ENERGY CORPORATION	Canada		DEC	10,578.5	10,201.7	10,219.5	10,024.6	10,724.2	9,341.0	8,182.5	5.5	1.3	3.0	129	125	125	123	131	114
THE WILLIAMS COMPANIES, INC.			DEC	10,775.0	7,724.0	8,199.0	8,686.0	8,031.0	7,499.0	7,360.0	3.1	7.5	39.5	146	105	111	118	109	102
UTILITIES																			
ALGONQUIN POWER & UTILITIES CORP.	Canada		DEC	2,285.5	1,677.0	1,626.4	1,648.5	1,521.9	816.0	740.8	23.8	15.8	36.3	309	226	220	223	205	110
ALLIANT ENERGY CORPORATION	United States		DEC	3,669.0	3,416.0	3,648.0	3,534.0	3,382.2	3,320.0	3,253.6	1.3	2.0	7.4	113	105	112	109	104	102
AMEREN CORPORATION	United States		DEC	6,119.0	5,540.0	5,646.0	6,009.0	5,909.0	5,817.0	5,885.0	0.3	1.0	10.5	104	94	96	102	100	99
AMERICAN ELECTRIC POWER COMPANY, INC.	United States		DEC	16,792.0	14,918.5	15,561.4	16,195.7	15,424.9	16,380.1	16,453.2	1.1	0.5	12.6	102	91	95	98	94	100
APA GROUP	Australia		JUN	1,953.1	1,788.6	1,719.4	1,765.3	1,785.3	1,560.2	1,195.7	9.2	4.5	0.6	163	150	144	148	149	130
ATMOS ENERGY CORPORATION	United States		SEP	3,407.5	2,821.1	2,901.8	3,115.5	2,759.7	2,454.6	2,927.0	-2.3	6.8	20.8	116	96	99	106	94	84
BROOKFIELD INFRASTRUCTURE PARTNERS L.P.	Bermuda		DEC	11,537.0	8,885.0	6,597.0	4,652.0	3,535.0	2,115.0	1,855.0	26.3	40.4	29.8	622	479	356	251	191	114
CENTERPOINT ENERGY, INC.	United States		DEC	8,352.0	7,418.0	7,564.0	6,277.0	9,614.0	7,528.0	7,386.0	-0.1	2.1	12.6	113	100	102	85	130	102
CHUBU ELECTRIC POWER COMPANY, INCORPORATED	Japan	#	MAR	22,276.8	26,541.0	28,493.5	27,390.0	26,866.1	23,350.1	25,400.9	2.3	0.6	-4.3	88	104	112	108	106	92
CLP HOLDINGS LIMITED	Hong Kong		DEC	10,767.1	10,265.3	11,001.1	11,674.3	11,783.9	10,244.1	10,412.8	-0.9	1.1	5.5	103	99	106	112	113	98

Note: Data as originally reported. CAGR-Compound annual growth rate. #Of the following calendar year.
Source: S&P Capital IQ.

Net Income

Company		Yr. End	Million $ 2021	2020	2019	2018	2017	2016	2015	CAGR (%) 10-Yr.	5-Yr.	1-Yr.	Index Basis (2013=100) 2021	2020	2019	2018	2017	2016
AIRPORT SERVICES																		
AENA S.M.E., S.A.		DEC	-68.3	-155.1	1618.2	1520.4	1479.4	1228.9	905.3	-12.0	NM	-52.6	-8	-17	179	168	163	136
CONSTRUCTION & ENGINEERING																		
VINCI SA		DEC	2953.5	1519.3	3658.4	3415.4	3298.5	2644.4	2222.1	3.2	0.7	109.1	133	68	165	154	148	119
FERROVIAL, S.A.		DEC	1361.3	-518.7	300.8	-512.9	545.1	396.9	782.0	-0.4	26.1	NM	174	-66	38	-66	70	51
QUANTA SERVICES, INC.		DEC	486.0	445.6	402.0	293.3	315.0	198.4	310.9	13.9	19.6	9.1	156	143	129	94	101	64
BOUYGUES SA		DEC	1279.4	851.4	1328.7	1497.6	1299.2	772.7	437.7	0.5	9.0	61.6	292	195	304	342	297	177
EIFFAGE SA		DEC	883.7	458.7	813.6	720.2	658.0	501.4	338.9	14.3	10.3	107.2	261	135	240	213	194	148
SKANSKA AB (PUBL)		DEC	759.1	1202.4	645.6	514.4	500.3	630.4	566.2	-1.0	3.7	-30.5	134	212	114	91	88	111
KAJIMA CORPORATION	#	MAR	855.3	890.8	959.5	991.2	1193.7	940.4	643.7	14.3	6.4	-4.6	133	138	149	154	185	146
TAISEI CORPORATION		MAR	588.3	836.8	1134.6	1015.9	1193.8	812.3	685.7	23.9	3.7	-24.2	86	122	165	148	174	118
ACS, ACTIVIDADES DE CONSTRUCCIÓN Y SERVICIOS, S.A.		DEC	3463.5	702.1	1079.6	1048.3	963.0	792.8	787.8	12.2	32.3	430.6	440	89	137	133	122	101
OBAYASHI CORPORATION		MAR	322.2	893.1	1051.0	1021.2	872.5	847.5	564.6	20.4	9.3	-12.7	57	158	186	181	155	150
CONSTRUCTION MACHINERY AND HEAVY TRUCKS																		
CATERPILLAR INC.		DEC	6489.0	2998.0	6093.0	6147.0	754.0	-67.0	2512.0	2.8	NM	116.4	258	119	243	245	30	-3
AB VOLVO (PUBL)		DEC	3626.0	2352.2	3838.7	2801.6	2502.4	1448.4	1783.8	6.3	20.1	69.7	203	132	215	157	140	81
PACCAR INC		DEC	1852.1	1298.4	2387.9	2195.1	1675.2	521.7	1604.0	5.9	28.8	42.6	115	81	149	137	104	33
CUMMINS INC.		DEC	2131.0	1789.0	2260.0	2141.0	999.0	1394.0	1399.0	1.4	8.9	19.1	152	128	162	153	71	100
DAIMLER TRUCK HOLDING AG		DEC	2669.2	-174.9	1942.5	2070.1	2070.1	0.0	0.0	NA	NA	NM	NA	NA	NA	NA	NA	NA
TOYOTA INDUSTRIES CORPORATION		MAR	1484.8	1236.0	1355.7	1378.5	1583.5	1178.5	1629.0	11.2	-5.7	-6.3	91	76	83	85	97	72
EPIROC AB (PUBL)		DEC	780.6	657.4	628.8	611.0	525.1	356.4	424.3	NA	16.9	30.7	184	155	148	144	124	84
KOMATSU LTD.		MAR	1852.3	960.6	1429.8	2314.7	1849.3	1016.9	1223.1	-3.4	-5.0	-30.9	151	79	117	189	151	83
WESTINGHOUSE AIR BRAKE TECHNOLOGIES CORPORATION		DEC	558.0	414.0	327.0	294.9	262.3	304.9	398.6	12.6	12.8	34.8	140	104	82	74	66	76
ALSTOM SA		MAR	-645.4	289.9	513.2	764.3	449.7	309.0	3417.8	-6.1	-39.3	-47.1	-19	8	15	22	13	9

Note: Data as originally reported. CAGR-Compound annual growth rate. #Of the following calendar year.
Source: S&P Capital IQ.

Net Income

Company	Yr. End	Million $ 2021	2020	2019	2018	2017	2016	2015	CAGR (%) 10-Yr.	5-Yr.	1-Yr.	Index Basis (2013=100) 2021	2020	2019	2018	2017	2016
CONSTRUCTION MATERIALS																	
CRH PLC	DEC	2565.0	1122.0	1717.0	2884.0	2276.7	1312.2	786.3	16.0	15.6	128.6	326	143	218	367	290	167
HOLCIM LTD	DEC	2520.8	1918.1	2319.1	1526.5	-1718.7	1763.2	-1467.2	23.7	5.1	35.4	-172	-131	-158	-104	117	-120
VULCAN MATERIALS COMPANY	DEC	670.8	584.5	617.7	515.8	601.2	419.5	221.2	NA	9.8	14.8	303	264	279	233	272	190
MARTIN MARIETTA MATERIALS, INC.	DEC	702.5	721.0	611.9	470.0	713.3	425.4	288.8	23.9	10.6	-2.6	243	250	212	163	247	147
JAMES HARDIE INDUSTRIES PLC	MAR	459.1	262.8	241.5	228.8	146.1	276.5	244.4	NA	1.5	8.8	188	108	99	94	60	113
HEIDELBERGCEMENT AG	DEC	2000.5	-2616.8	1224.2	1308.7	1101.9	693.6	869.0	17.6	21.8	NM	230	-301	141	151	127	80
CEMEX, S.A.B. DE C.V.	DEC	753.0	-1467.0	143.0	528.0	528.0	681.1	69.7	NA	-44.3	NM	1080	NM	205	757	757	977
HIGHWAY AND RAILTRACKS																	
TRANSURBAN GROUP	JUN	2476.4	-76.6	119.9	358.7	183.4	73.8	-140.1	40.2	101.7	NM	NM	55	-86	-256	-131	-53
ATLANTIA SPA	DEC	711.9	-1439.8	152.6	887.3	1407.0	1184.2	925.9	-3.5	-11.0	NM	77	-155	16	96	152	128
CCR S.A.	DEC	124.9	36.8	357.8	202.2	542.6	526.6	220.7	-2.5	-16.5	264.1	57	17	162	92	246	239
OIL & GAS STORAGE AND TRANSPORTATION																	
ENBRIDGE INC.	DEC	4890.6	2639.3	4398.5	2112.1	2279.8	1540.3	180.9	22.5	24.5	84.0	2703	1459	2431	1168	1260	851
KINDER MORGAN, INC.	DEC	1784.0	119.0	2190.0	1609.0	183.0	708.0	253.0	11.6	20.3	1399.2	705	47	866	636	72	280
ONEOK, INC.	DEC	1499.7	612.8	1278.6	1151.7	387.8	352.0	245.0	15.3	33.6	144.7	612	250	522	470	158	144
PEMBINA PIPELINE CORPORATION	DEC	981.4	-248.0	1161.9	936.6	704.1	346.9	292.6	22.3	21.7	NM	335	-85	397	320	241	119
TC ENERGY CORPORATION	DEC	1544.9	3622.7	3191.9	2713.0	2517.4	173.5	-826.0	2.1	53.0	-57.6	-187	-439	-386	-328	-305	-21
THE WILLIAMS COMPANIES, INC.	DEC	1517.0	211.0	850.0	-155.0	2174.0	-424.0	-571.0	15.0	NM	619.0	-266	-37	-149	27	-381	74
UTILITIES																	
ALGONQUIN POWER & UTILITIES CORP.	DEC	264.9	782.5	530.9	185.0	101.7	68.8	61.6	25.5	23.5	-66.2	430	1270	861	300	165	112
ALLIANT ENERGY CORPORATION	DEC	659.0	614.0	557.0	512.0	457.3	371.5	378.2	8.1	12.1	7.3	174	162	147	135	121	98
AMEREN CORPORATION	DEC	990.0	871.0	828.0	815.0	523.0	653.0	630.0	6.7	8.7	13.7	157	138	131	129	83	104
AMERICAN ELECTRIC POWER COMPANY, INC.	DEC	2488.1	2200.1	1921.1	1923.8	1912.6	610.9	2047.1	2.5	32.4	13.1	122	107	94	94	93	30
APA GROUP	JUN	2.8	215.2	201.9	195.9	181.8	133.8	430.9	-28.7	-54.0	-98.8	1	50	47	45	42	31
ATMOS ENERGY CORPORATION	SEP	665.6	601.4	511.4	603.1	396.4	350.1	315.1	12.4	13.7	10.7	211	191	162	191	126	111
BROOKFIELD INFRASTRUCTURE PARTNERS L.P.	DEC	654.0	156.0	52.0	192.0	11.0	285.0	169.0	17.4	18.1	319.2	387	92	31	114	7	169
CENTERPOINT ENERGY, INC.	DEC	1486.0	-773.0	791.0	368.0	1792.0	432.0	-692.0	0.9	28.0	NM	-215	112	-114	-53	-259	-62
CHUBU ELECTRIC POWER COMPANY, INCORPORATED	MAR	-354.3	1331.0	1519.2	716.7	700.3	1028.4	1510.7	5.7	-2.8	-10.0	-23	88	101	47	46	68
CLP HOLDINGS LIMITED	DEC	1106.6	1495.4	625.1	1762.2	1855.5	1671.1	2052.0	-0.7	-7.8	-25.6	54	73	30	86	90	81

Note: Data as originally reported. CAGR-Compound annual growth rate. #Of the following calendar year.
Source: S&P Capital IQ.

Company		Yr. End	Return on Revenues (%)						Return on Assets (%)						Return on Equity (%)					
			2021	2020	2019	2018	2017	2016	2021	2020	2019	2018	2017	2016	2021	2020	2019	2018	2017	2016
AIRPORT SERVICES																				
AENA S.M.E., S.A.		DEC	NM	NM	32.4	31.5	31.1	31.3	NM	NM	9.7	8.9	8.0	7.5	NM	NM	23.3	22.7	22.8	24.8
CONSTRUCTION & ENGINEERING																				
VINCI SA		DEC	5.2	2.8	6.7	6.7	6.7	6.5	2.6	1.4	3.6	4.0	3.9	3.7	9.2	4.4	15.9	16.0	16.0	15.8
FERROVIAL, S.A.		DEC	17.7	NM	4.4	NM	8.8	3.5	4.8	NM	1.1	NM	2.0	1.6	20.2	NM	8.7	7.9	6.8	6.0
QUANTA SERVICES, INC.		DEC	3.7	4.0	3.3	2.6	3.3	2.6	3.8	5.3	4.8	4.1	4.9	3.7	10.4	10.8	10.6	8.0	8.9	6.2
BOUYGUES SA		DEC	3.0	2.0	3.1	3.7	3.3	2.3	2.5	1.7	3.0	3.3	3.0	2.1	10.6	6.5	11.6	13.5	12.1	8.4
EIFFAGE SA		DEC	4.0	2.3	3.9	3.7	3.6	3.3	2.3	1.1	2.2	2.1	1.8	1.6	17.6	9.7	18.8	17.9	17.8	20.1
SKANSKA AB (PUBL)		DEC	4.8	6.2	3.5	2.7	2.6	3.9	4.9	7.9	4.8	3.9	3.7	5.4	16.3	27.6	19.4	16.3	15.0	22.2
KAJIMA CORPORATION	#	MAR	5.0	5.2	5.1	5.6	6.9	5.8	4.4	4.6	4.8	5.3	6.1	5.3	10.9	11.8	13.4	15.4	20.7	20.7
TAISEI CORPORATION	#	MAR	4.6	6.3	7.0	6.8	8.0	6.1	3.7	4.9	6.5	6.1	6.6	5.1	8.3	11.6	16.6	16.2	20.5	16.6
ACS, ACTIVIDADES DE CONSTRUCCIÓN Y SERVICIOS, S.A.		DEC	10.9	2.0	2.5	2.5	2.3	2.3	8.5	1.5	2.4	2.6	2.6	2.2	NM	13.3	29.1	22.6	21.5	11.7
OBAYASHI CORPORATION	#	MAR	2.0	5.6	5.5	5.5	4.9	5.0	1.6	4.3	5.1	5.1	4.3	4.7	4.2	11.1	14.2	15.4	14.0	16.7
CONSTRUCTION MACHINERY AND HEAVY TRUCKS																				
CATERPILLAR INC.		DEC	12.7	7.2	11.3	11.2	1.7	NM	7.8	3.8	7.8	7.8	1.0	NM	40.7	20.0	42.5	44.2	5.6	NM
AB VOLVO (PUBL)		DEC	8.8	5.7	8.3	6.4	6.2	4.4	6.4	3.8	6.8	5.2	4.9	3.3	22.7	13.9	27.3	21.7	20.2	14.4
PACCAR INC		DEC	7.9	6.9	9.3	9.3	8.6	3.1	6.3	4.6	8.4	8.6	7.1	2.5	17.0	12.9	26.1	26.4	22.6	7.6
CUMMINS INC.		DEC	8.9	9.0	9.6	9.0	4.9	8.0	9.0	7.9	11.5	11.2	5.5	9.3	23.5	20.8	27.1	26.6	13.0	19.5
DAIMLER TRUCK HOLDING AG		DEC	5.9	NM	3.7	4.1	0.0	0.0	4.3	NM	3.1	3.6	NA	NA	19.0	NM	17.8	0.0	0.0	0.0
TOYOTA INDUSTRIES CORPORATION	#	MAR	6.7	6.5	6.7	6.9	8.4	7.8	2.4	2.1	2.8	2.9	3.2	2.9	5.0	4.8	5.9	6.2	7.0	6.2
EPIROC AB (PUBL)		DEC	17.8	14.9	14.4	14.2	13.7	11.9	14.5	12.3	14.3	15.0	15.6	10.8	28.5	23.2	28.2	35.2	30.9	21.0
KOMATSU LTD.	#	MAR	8.0	4.9	6.3	9.4	7.9	6.3	5.2	2.8	4.2	7.0	5.8	4.3	10.9	6.1	8.7	15.1	12.3	7.4
WESTINGHOUSE AIR BRAKE TECHNOLOGIES CORPORATION		DEC	7.1	5.5	4.0	6.8	6.8	10.4	3.0	2.2	1.7	3.4	4.0	4.6	5.5	4.1	5.1	10.2	9.0	13.4
ALSTOM SA	#	MAR	NM	2.8	5.7	8.4	5.0	4.0	NM	0.9	3.6	5.1	2.8	2.0	NM	4.0	12.1	11.7	9.0	6.7

Note: Data as originally reported. CAGR-Compound annual growth rate. #Of the following calendar year.
Source: S&P Capital IQ.

Company		Yr. End	Return on Revenues (%)						Return on Assets (%)						Return on Equity (%)					
			2021	2020	2019	2018	2017	2016	2021	2020	2019	2018	2017	2016	2021	2020	2019	2018	2017	2016
CONSTRUCTION MATERIALS																				
CRH PLC		DEC	8.3	4.1	6.1	10.5	8.8	5.0	5.7	2.5	3.6	6.2	6.0	3.9	12.7	5.8	8.5	8.3	11.4	8.5
HOLCIM LTD		DEC	8.6	7.3	8.4	5.5	NM	6.7	3.8	3.2	3.9	2.5	NM	2.6	9.1	6.7	8.2	5.6	NM	5.8
VULCAN MATERIALS COMPANY		DEC	12.1	12.0	12.5	11.8	15.5	11.7	4.9	5.0	5.8	5.2	6.3	5.0	10.7	10.1	11.5	10.2	12.4	9.4
MARTIN MARIETTA MATERIALS, INC.		DEC	13.8	16.3	13.8	11.8	19.2	11.9	4.9	6.8	6.0	4.9	7.9	5.8	11.3	12.8	11.9	9.8	16.2	10.4
JAMES HARDIE INDUSTRIES PLC	#	MAR	12.7	9.0	9.3	9.1	7.1	14.4	10.8	6.4	6.0	5.7	6.2	13.7	38.4	25.1	24.0	60.8	NM	NM
HEIDELBERGCEMENT AG		DEC	9.4	NM	5.8	6.3	5.3	4.3	5.2	NM	2.8	3.2	2.7	1.8	12.5	NM	7.2	7.9	6.6	4.9
CEMEX, S.A.B. DE C.V.		DEC	5.2	NM	1.1	3.9	6.1	5.6	2.8	NM	0.5	1.8	2.7	2.3	8.2	NM	0.7	4.6	6.3	8.0
HIGHWAY AND RAILTRACKS																				
TRANSURBAN GROUP		JUN	114.4	NM	4.1	14.7	8.7	4.5	9.3	NM	0.5	1.8	1.0	0.4	NM	NM	2.0	7.4	3.4	0.4
ATLANTIA SPA		DEC	9.9	NM	1.1	10.4	19.0	18.6	0.8	NM	0.2	0.9	2.9	2.9	NM	NM	2.3	6.8	13.2	13.5
CCR S.A.		DEC	5.7	1.9	13.6	8.1	17.0	17.1	1.7	0.6	4.3	2.5	5.9	7.0	9.8	1.1	16.9	7.5	28.2	40.7
OIL & GAS STORAGE AND TRANSPORTATION																				
ENBRIDGE INC.		DEC	13.1	8.6	11.4	6.2	6.4	6.0	3.7	2.1	3.5	1.7	1.8	2.4	9.9	5.1	8.2	4.7	6.9	9.7
KINDER MORGAN, INC.		DEC	10.7	1.0	16.6	11.4	1.3	5.4	2.5	0.2	3.0	2.0	0.2	0.9	5.7	0.5	6.4	5.5	0.6	2.1
ONEOK, INC.		DEC	9.1	7.2	12.6	9.1	3.2	3.9	6.3	2.7	5.9	6.3	2.3	2.2	24.9	10.0	20.0	18.8	13.0	20.7
PEMBINA PIPELINE CORPORATION		DEC	14.4	NM	20.8	17.4	16.4	10.9	3.9	NM	4.6	4.8	3.5	3.1	8.5	NM	9.6	9.0	8.0	5.9
TC ENERGY CORPORATION		DEC	14.6	35.5	31.2	27.1	23.5	1.9	1.9	4.6	4.2	3.7	3.7	0.3	6.1	14.9	14.0	12.2	12.8	2.2
THE WILLIAMS COMPANIES, INC.		DEC	14.1	2.7	10.4	NM	27.1	NM	3.2	0.5	1.8	NM	4.7	NM	10.9	1.3	4.5	1.2	16.6	NM
UTILITIES																				
ALGONQUIN POWER & UTILITIES CORP.		DEC	11.6	46.7	32.6	11.2	6.7	8.4	1.6	5.9	4.9	2.0	1.2	1.1	2.7	13.6	11.1	2.1	3.8	3.8
ALLIANT ENERGY CORPORATION		DEC	18.0	18.0	15.3	14.5	13.5	11.2	3.6	3.5	3.3	3.3	3.2	2.8	11.1	10.9	10.9	11.2	10.8	9.4
AMEREN CORPORATION		DEC	16.2	15.7	14.7	13.6	8.9	11.2	2.8	2.7	2.9	3.0	2.0	2.6	10.5	10.1	10.4	10.9	7.3	9.2
AMERICAN ELECTRIC POWER COMPANY, INC.		DEC	14.8	14.7	12.3	11.9	12.4	3.7	2.8	2.7	2.5	2.8	3.0	1.0	11.5	10.8	9.8	10.3	10.8	3.5
APA GROUP		JUN	0.1	12.0	11.7	11.1	10.2	8.6	0.0	1.9	1.9	1.7	1.6	1.2	0.1	9.1	7.5	6.5	5.9	4.3
ATMOS ENERGY CORPORATION		SEP	19.5	21.3	17.6	19.4	14.4	14.3	3.4	3.9	3.8	5.1	3.7	3.5	9.1	9.6	9.7	13.9	10.4	10.4
BROOKFIELD INFRASTRUCTURE PARTNERS L.P.		DEC	5.7	1.8	0.8	4.1	0.3	13.5	0.9	0.3	0.1	0.5	0.0	1.3	11.3	4.1	3.5	5.7	5.0	6.3
CENTERPOINT ENERGY, INC.		DEC	17.8	NM	10.5	5.9	18.6	5.7	3.9	NM	2.2	1.4	7.9	2.0	7.5	5.8	6.3	6.2	44.0	12.5
CHUBU ELECTRIC POWER COMPANY, INCORPORATED	#	MAR	NM	5.0	5.3	2.6	2.6	4.4	NM	2.6	3.0	1.3	1.3	2.1	NM	7.4	8.8	4.6	4.4	7.0
CLP HOLDINGS LIMITED		DEC	10.3	14.6	5.7	15.1	15.7	16.3	3.6	4.9	2.2	6.0	6.4	6.3	7.5	10.2	4.7	11.9	13.5	13.4

Note: Data as originally reported. CAGR-Compound annual growth rate. #Of the following calendar year.
Source: S&P Capital IQ.

Company		Yr. End	Current Ratio						Debt/Capital Ratio (%)						Debt as a % of Net Working Capital					
			2021	2020	2019	2018	2017	2016	2021	2020	2019	2018	2017	2016	2021	2020	2019	2018	2017	2016
AIRPORT SERVICES																				
AENA S.M.E., S.A.		DEC	1.0	1.2	0.4	0.7	0.8	0.7	54.5	54.7	48.6	52.4	56.2	61.4	NM	2085.4	NM	NM	NM	NM
CONSTRUCTION & ENGINEERING																				
VINCI SA		DEC	0.9	1.0	0.9	0.9	0.9	0.8	54.5	57.8	57.4	56.4	54.0	57.2	NM	NM	NM	NM	NM	NM
FERROVIAL, S.A.		DEC	1.4	1.5	1.4	1.5	1.4	1.4	62.1	68.2	59.9	58.5	55.2	56.0	379.4	211.9	242.5	218.3	346.2	369.1
QUANTA SERVICES, INC.		DEC	1.5	1.7	1.7	1.8	1.9	1.9	42.3	21.3	24.3	23.1	15.0	9.6	238.5	81.1	82.8	70.6	48.7	32.9
BOUYGUES SA		DEC	1.0	1.0	1.0	0.9	1.1	1.0	33.1	32.9	27.8	32.9	37.0	40.7	742.6	NM	NM	NM	613.8	1205.1
EIFFAGE SA		DEC	1.0	1.0	0.9	1.0	1.1	1.0	75.5	81.6	81.2	76.6	78.2	84.6	2351.2	3121.0	NM	NM	2128.4	NM
SKANSKA AB (PUBL)		DEC	1.5	1.5	1.4	1.2	1.3	1.3	16.3	17.4	16.8	30.5	31.6	27.0	20.5	20.3	22.8	53.1	54.0	47.6
KAJIMA CORPORATION	#	MAR	1.3	1.3	1.2	1.2	1.2	1.2	32.8	29.3	35.3	32.6	37.7	47.6	127.2	112.5	146.0	114.9	139.0	188.2
TAISEI CORPORATION	#	MAR	1.4	1.5	1.4	1.3	1.3	1.2	20.9	22.5	22.9	25.6	29.0	33.3	55.2	54.8	58.0	78.9	71.9	96.4
ACS, ACTIVIDADES DE CONSTRUCCIÓN Y SERVICIOS, S.A.		DEC	1.4	1.1	1.0	1.0	1.1	1.0	55.3	66.1	55.3	50.9	49.9	49.6	116.7	448.3	1378.6	678.5	282.7	2074.7
OBAYASHI CORPORATION	#	MAR	1.2	1.3	1.2	1.2	1.1	1.1	22.3	22.2	23.2	25.4	29.2	30.3	99.8	93.5	98.9	134.3	234.9	234.6
CONSTRUCTION MACHINERY AND HEAVY TRUCKS																				
CATERPILLAR INC.		DEC	1.5	1.5	1.5	1.4	1.3	1.2	37.0	38.6	38.1	36.2	35.2	39.7	71.1	70.2	71.7	77.1	80.5	147.0
AB VOLVO (PUBL)		DEC	1.3	1.4	1.4	1.2	1.1	1.1	46.5	41.8	43.4	44.3	46.6	57.9	213.8	130.5	136.4	228.3	504.6	767.8
PACCAR INC		DEC	2.5	2.7	2.4	2.4	2.5	2.8	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
CUMMINS INC.		DEC	1.7	1.9	1.5	1.5	1.6	1.8	31.3	32.4	22.8	23.9	18.9	20.8	77.4	73.1	72.6	67.8	56.0	53.8
DAIMLER TRUCK HOLDING AG		DEC	1.6	1.2	1.3	1.2	0.0	0.0	38.0	47.0	50.0	51.4	NA	NA	94.9	188.9	170.9	206.1	NA	NA
TOYOTA INDUSTRIES CORPORATION	#	MAR	1.6	1.6	1.8	1.7	1.5	1.6	22.3	23.3	32.8	30.8	25.6	25.9	125.0	129.7	151.3	162.8	178.6	151.1
EPIROC AB (PUBL)		DEC	2.6	3.6	3.1	2.3	1.5	2.2	22.0	26.2	22.1	28.0	48.9	38.6	35.3	35.5	32.4	43.3	106.3	65.5
KOMATSU LTD.	#	MAR	1.8	2.0	1.7	1.8	1.8	2.0	24.1	31.8	39.5	36.9	33.3	17.4	61.1	81.6	113.5	98.9	91.6	44.4
WESTINGHOUSE AIR BRAKE TECHNOLOGIES CORPORATION		DEC	1.3	1.2	1.3	2.7	1.4	2.0	28.4	27.2	30.2	56.9	39.2	37.2	439.9	579.8	463.9	135.3	263.6	124.1
ALSTOM SA	#	MAR	0.8	0.7	1.1	1.1	1.2	1.1	22.8	15.3	18.8	2.1	21.7	26.8	(81.8)	(41.8)	127.6	8.6	54.4	272.9

Note: Data as originally reported. CAGR-Compound annual growth rate. #Of the following calendar year.
Source: S&P Capital IQ.

Company		Yr. End	Current Ratio 2021	2020	2019	2018	2017	2016	Debt/Capital Ratio (%) 2021	2020	2019	2018	2017	2016	Debt as a % of Net Working Capital 2021	2020	2019	2018	2017	2016
CONSTRUCTION MATERIALS																				
CRH PLC		DEC	1.9	2.0	1.3	1.3	1.6	1.6	32.6	35.4	51.9	34.5	34.1	34.5	155.5	147.5	340.6	254.0	206.4	216.8
HOLCIM LTD		DEC	1.4	1.3	1.3	1.1	1.1	1.2	32.3	28.6	27.3	32.6	35.2	34.0	358.2	414.8	378.6	1503.4	1465.8	872.8
VULCAN MATERIALS COMPANY		DEC	2.2	2.2	2.6	1.8	2.7	3.1	37.1	31.5	33.1	36.5	36.2	30.2	417.9	225.5	330.0	611.1	381.6	259.2
MARTIN MARIETTA MATERIALS, INC.		DEC	2.7	3.3	1.7	1.7	3.8	2.0	43.8	30.8	31.3	35.6	36.8	26.7	400.7	224.6	413.7	471.5	140.8	279.0
JAMES HARDIE INDUSTRIES PLC	#	MAR	1.5	1.0	1.8	1.6	2.1	1.5	39.7	44.7	56.7	58.6	133.4	160.2	247.8	2020.2	340.0	509.1	197.4	277.7
HEIDELBERGCEMENT AG		DEC	1.2	1.2	1.1	1.2	1.1	1.0	25.4	35.1	31.5	36.1	35.7	32.4	517.7	548.2	880.5	774.9	2236.7	NM
CEMEX, S.A.B. DE C.V.		DEC	0.8	0.8	0.8	0.7	0.6	1.1	41.7	51.1	46.3	47.2	54.1	57.0	NM	NM	NM	NM	NM	4041.7
HIGHWAY AND RAILTRACKS																				
TRANSURBAN GROUP		JUN	1.6	0.7	0.5	0.8	0.6	0.6	61.5	69.6	64.5	69.4	69.5	66.6	991.5	NM	NM	NM	NM	NM
ATLANTIA SPA		DEC	1.4	0.9	1.0	1.2	1.6	0.9	69.3	77.8	75.6	74.1	59.5	67.5	396.2	NM	NM	2933.4	541.6	NM
CCR S.A.		DEC	1.4	1.1	1.1	0.9	1.1	0.6	73.3	65.5	64.1	62.5	61.2	72.3	1141.8	2986.5	2460.4	NM	2719.7	NM
OIL & GAS STORAGE AND TRANSPORTATION																				
ENBRIDGE INC.		DEC	0.5	0.5	0.5	0.6	0.6	0.6	52.9	50.4	47.0	45.9	47.7	59.9	NM	NM	NM	NM	NM	NM
KINDER MORGAN, INC.		DEC	0.7	0.6	0.6	0.8	0.4	0.5	53.0	49.7	47.8	53.8	50.5	51.8	NM	NM	NM	NM	NM	NM
ONEOK, INC.		DEC	0.7	1.4	0.7	0.7	0.7	0.5	67.9	70.5	68.1	57.7	63.2	79.6	NM	2747.7	NM	NM	NM	NM
PEMBINA PIPELINE CORPORATION		DEC	0.5	0.6	0.7	0.7	0.9	0.9	41.6	40.6	37.4	32.8	35.2	33.3	NM	NM	NM	NM	NM	NM
TC ENERGY CORPORATION		DEC	0.6	0.4	0.6	0.4	0.5	1.1	64.6	61.9	62.7	62.4	61.8	63.1	NM	NM	NM	NM	NM	10648.0
THE WILLIAMS COMPANIES, INC.		DEC	0.9	0.6	0.4	0.8	0.8	0.5	60.6	59.5	55.2	58.3	55.8	61.9	NM	NM	NM	NM	NM	NM
UTILITIES																				
ALGONQUIN POWER & UTILITIES CORP.		DEC	0.7	0.7	0.6	1.0	0.9	0.9	43.4	42.7	43.9	45.1	47.7	63.0	NM	NM	NM	NM	NM	NM
ALLIANT ENERGY CORPORATION		DEC	0.5	0.7	0.4	0.5	0.4	0.8	57.0	56.6	53.7	56.7	52.7	54.4	NM	NM	NM	NM	NM	NM
AMEREN CORPORATION		DEC	0.7	0.8	0.6	0.6	0.5	0.6	58.5	57.4	54.7	54.1	52.6	51.7	NM	NM	NM	NM	NM	NM
AMERICAN ELECTRIC POWER COMPANY, INC.		DEC	0.6	0.4	0.4	0.5	0.5	0.6	62.8	63.2	62.0	57.8	55.8	54.9	NM	NM	NM	NM	NM	NM
APA GROUP		JUN	1.8	1.7	0.7	0.5	1.1	0.5	77.4	77.4	73.7	69.6	71.0	70.2	2160.2	1816.5	NM	NM	13148.3	NM
ATMOS ENERGY CORPORATION		SEP	0.8	0.6	0.4	0.3	0.5	0.4	38.3	40.0	43.0	42.3	51.2	54.9	NM	NM	NM	NM	NM	NM
BROOKFIELD INFRASTRUCTURE PARTNERS L.P.		DEC	0.6	0.7	1.1	0.9	1.0	1.1	50.8	50.5	47.3	49.3	41.9	44.7	NM	NM	4942.8	NM	NM	6671.8
CENTERPOINT ENERGY, INC.		DEC	1.7	0.6	1.0	2.1	1.1	0.9	62.3	58.1	63.0	51.9	63.9	68.8	507.7	NM	NM	233.2	2525.8	NM
CHUBU ELECTRIC POWER COMPANY, INCORPORATED	#	MAR	0.8	0.6	0.5	0.6	0.7	0.7	58.8	53.9	57.2	74.7	62.3	63.8	NM	NM	NM	NM	NM	NM
CLP HOLDINGS LIMITED		DEC	0.9	0.9	0.7	0.9	0.9	0.6	28.3	27.8	25.8	26.6	29.2	28.7	NM	NM	NM	NM	NM	NM

Note: Data as originally reported. CAGR-Compound annual growth rate. #Of the following calendar year.
Source: S&P Capital IQ.

Company		Yr. End	Price/Earnings Ratio (High-Low) 2021	2020	2019	2018	2017	2016	Dividend Payout Ratio (%) 2021	2020	2019	2018	2017	2016	Dividend Yield (High-Low, %) 2021	2020	2019	2018	2017	2016
AIRPORT SERVICES																				
AENA S.M.E., S.A.		DEC	NM - NM	NM - NM	19 - 14	20 - 15	22 - 16	18 - 12	0.0	0.0	72.1	73.4	48.1	34.9	0.0 - 0.0	0.0 - 0.0	4.4 - 0.0	4.9 - 3.9	4.9 - 2.1	2.9 - 2.0
CONSTRUCTION & ENGINEERING																				
VINCI SA		DEC	21 - 17	48 - 26	17 - 12	16 - 13	18 - 13	15 - 13	58.8	55.9	46.1	46.6	43.6	42.0	3.5 - 2.1	2.4 - 0.0	3.6 - 0.0	3.6 - 2.6	3.4 - 2.4	3.2 - 2.5
FERROVIAL, S.A.		DEC	17 - 12	NM - NM	77 - 49	NM - NM	33 - 27	41 - 31	0.0	0.0	0.0	0.0	0.0	60.1	2.7 - 2.2	2.5 - 1.4	4.1 - 2.4	4.2 - 2.7	4.4 - 3.7	4.3 - 3.5
QUANTA SERVICES, INC.		DEC	35 - 20	23 - 8	16 - 11	21 - 15	20 - 15	28 - 14	7.0	6.5	5.8	0.0	0.0	0.0	0.3 - 0.2	0.4 - 0.2	0.8 - 0.3	0.6 - 0.4	0.0 - 0.0	0.0 - 0.0
BOUYGUES SA		DEC	12 - 10	23 - 13	12 - 9	13 - 8	15 - 11	18 - 12	57.5	92.8	53.3	47.4	52.5	75.4	6.5 - 5.2	5.7 - 4.7	7.3 - 4.1	5.8 - 4.3	5.5 - 3.5	5.1 - 3.7
EIFFAGE SA		DEC	12 - 9	29 - 14	14 - 9	16 - 11	16 - 12	14 - 11	38.5	0.0	32.3	31.3	26.3	29.9	3.8 - 3.0	3.7 - 3.2	2.5 - 0.0	2.8 - 2.3	2.4 - 1.5	2.5 - 1.6
SKANSKA AB (PUBL)		DEC	16 - 12	10 - 6	15 - 9	16 - 12	23 - 17	16 - 11	39.0	13.6	40.8	73.8	82.5	53.7	6.6 - 2.7	3.2 - 1.4	4.1 - 1.5	6.1 - 2.8	6.0 - 4.5	4.8 - 3.3
KAJIMA CORPORATION	#	MAR	8 - 5	8 - 5	10 - 6	10 - 6	8 - 6	11 - 8	27.1	26.0	25.5	24.6	18.8	15.8	4.3 - 3.1	5.3 - 3.3	4.3 - 2.9	3.5 - 1.9	2.5 - 1.6	2.1 - 0.8
TAISEI CORPORATION	#	MAR	10 - 7	9 - 5	12 - 9	12 - 7	12 - 9	13 - 10	37.2	29.5	23.8	26.6	19.7	24.3	3.9 - 2.9	4.6 - 3.1	3.7 - 2.4	2.8 - 1.7	2.2 - 1.5	2.2 - 1.3
ACS, ACTIVIDADES DE CONSTRUCCIÓN Y SERVIC		DEC	3 - 2	18 - 6	13 - 10	13 - 9	14 - 11	12 - 8	13.0	85.4	50.5	34.5	37.1	43.4	9.6 - 7.0	9.8 - 7.4	16.5 - 5.3	5.8 - 3.6	4.5 - 3.6	4.1 - 3.3
OBAYASHI CORPORATION	#	MAR	8 - 6	8 - 5	8 - 6	12 - 8	9 - 7	13 - 9	58.7	23.3	21.6	17.8	25.6	16.7	3.8 - 3.0	4.0 - 2.9	3.5 - 2.5	3.0 - 2.2	2.5 - 1.6	2.0 - 0.9
CONSTRUCTION MACHINERY AND HEAVY TRUC																				
CATERPILLAR INC.		DEC	21 - 15	33 - 17	14 - 10	16 - 11	124 - 72	NM - NM	35.9	74.8	35.0	31.7	242.8	NM	2.6 - 1.9	2.4 - 1.7	4.5 - 2.3	3.6 - 2.4	3.1 - 1.8	3.4 - 2.2
AB VOLVO (PUBL)		DEC	15 - 11	21 - 10	9 - 6	14 - 9	17 - 11	17 - 11	37.2	0.0	28.4	34.7	32.2	46.3	4.3 - 2.7	3.3 - 0.0	3.5 - 0.0	4.0 - 2.8	3.5 - 2.0	3.0 - 1.9
PACCAR INC		DEC	19 - 15	25 - 13	12 - 8	13 - 9	16 - 13	46 - 30	0.0	34.1	18.2	36.6	17.2	130.4	3.6 - 3.0	3.6 - 2.0	7.2 - 2.1	6.1 - 4.4	5.7 - 2.8	3.3 - 2.2
CUMMINS INC.		DEC	19 - 14	20 - 9	13 - 9	15 - 10	30 - 23	18 - 10	38.0	43.7	33.7	33.5	70.2	48.5	3.2 - 2.4	2.8 - 2.0	5.1 - 2.3	3.7 - 2.6	3.6 - 2.2	3.0 - 2.4
DAIMLER TRUCK HOLDING AG		DEC	12 - 10	NA - NA	NA - NA	NA - NA			0.3	NM	56.9	32.8	0.0	0.0	0.0 - 0.0	0.0 - 0.0	0.0 - 0.0	0.0 - 0.0	0.0 - 0.0	0.0 - 0.0
TOYOTA INDUSTRIES CORPORATION	#	MAR	23 - 11	14 - 10	14 - 10	14 - 9	14 - 9	13 - 8	27.6	34.1	34.1	31.5	24.9	28.6	2.1 - 1.5	3.6 - 1.5	2.9 - 2.4	3.2 - 2.1	2.4 - 1.8	3.2 - 2.1
EPIROC AB (PUBL)		DEC	39 - 26	34 - 18	24 - 17	23 - 16	NA - NA	NA - NA	42.7	53.6	43.0	0.0	120.5	11.7	1.9 - 1.0	1.7 - 1.1	3.0 - 1.6	2.4 - 1.8	0.0 - 0.0	0.0 - 0.0
KOMATSU LTD.	#	MAR	31 - 15	18 - 9	14 - 8	21 - 13	25 - 14	18 - 11	32.4	50.7	70.0	36.4	31.2	48.3	3.1 - 1.2	7.3 - 1.3	5.0 - 3.6	4.5 - 1.8	2.2 - 1.6	3.4 - 2.0
WESTINGHOUSE AIR BRAKE TECHNOLOGIES COF		DEC	33 - 24	37 - 19	42 - 33	37 - 22	34 - 25	26 - 18	16.5	22.5	25.1	15.7	16.1	10.6	0.7 - 0.5	0.7 - 0.5	1.2 - 0.6	0.8 - 0.5	0.7 - 0.4	0.7 - 0.5
ALSTOM SA	#	MAR	53 - 37	24 - 15	13 - 11	22 - 16	21 - 14	3 - 2	NM	0.0	264.2	11.5	16.4	3.8	1.2 - 0.0	17.1 - 0.0	15.0 - 0.9	1.0 - 0.6	0.9 - 0.7	0.0 - 0.0

Note: Data as originally reported. CAGR-Compound annual growth rate. #Of the following calendar year.
Source: S&P Capital IQ.

Company	Yr. End	Price/Earnings Ratio (High-Low) 2021	2020	2019	2018	2017	2016	Dividend Payout Ratio (%) 2021	2020	2019	2018	2017	2016	Dividend Yield (High-Low, %) 2021	2020	2019	2018	2017	2016
CONSTRUCTION MATERIALS																			
CRH PLC	DEC	12 - 9	22 - 11	14 - 9	8 - 6	13 - 11	19 - 11	35.3	63.0	38.0	21.5	24.7	28.3	3.7 - 2.1	2.6 - 2.1	4.9 - 2.0	3.1 - 2.0	2.9 - 2.1	2.3 - 1.8
HOLCIM LTD	DEC	16 - 12	20 - 11	15 - 11	24 - 16	NM - NM	19 - 12	54.2	73.4	14.6	79.4	NM	50.8	5.6 - 3.8	4.5 - 3.4	6.9 - 3.7	5.1 - 3.7	4.9 - 3.4	3.8 - 2.6
VULCAN MATERIALS COMPANY	DEC	41 - 28	35 - 17	32 - 21	36 - 22	30 - 25	43 - 26	29.3	30.8	26.6	28.7	22.0	25.3	1.1 - 0.7	1.0 - 0.7	1.8 - 0.8	1.2 - 0.8	1.3 - 0.7	0.9 - 0.6
MARTIN MARIETTA MATERIALS, INC.	DEC	39 - 24	25 - 12	29 - 17	32 - 21	21 - 17	35 - 18	21.0	19.5	21.2	24.8	15.3	24.7	0.8 - 0.6	0.9 - 0.6	1.5 - 0.8	1.2 - 0.8	1.3 - 0.7	0.9 - 0.7
JAMES HARDIE INDUSTRIES PLC #	MAR	70 - 29	59 - 28	46 - 28	71 - 52	36 - 28	35 - 26	105.4	0.0	65.7	75.2	121.5	63.9	2.6 - 1.9	4.0 - 1.9	3.2 - 1.7	3.9 - 2.0	2.8 - 2.0	4.5 - 2.2
HEIDELBERGCEMENT AG	DEC	9 - 6	NM - NM	13 - 10	17 - 9	20 - 17	27 - 18	24.8	NM	38.2	33.0	34.6	37.2	5.5 - 3.3	3.7 - 0.8	6.9 - 1.0	3.6 - 2.9	3.4 - 1.7	2.1 - 1.4
CEMEX, S.A.B. DE C.V.	DEC	345 - 200	NM - NM	1130 - 595	458 - 264	364 - 259	18 - 7	3.2	NM	125.2	0.0	0.0	0.0	0.0 - 0.0	2.0 - 1.1	5.9 - 2.0	0.0 - 0.0	0.0 - 0.0	0.0 - 0.0
HIGHWAY AND RAILTRACKS																			
TRANSURBAN GROUP	JUN	13 - 10	NM - NM	231 - 162	57 - 49	110 - 82	249 - 185	24.8	NM	793.6	219.4	335.1	696.0	3.0 - 2.1	4.4 - 2.2	6.2 - 3.7	5.2 - 4.2	5.1 - 4.1	5.0 - 3.7
ATLANTIA SPA	DEC	23 - 17	NM - NM	149 - 107	30 - 18	20 - 15	18 - 14	0.0	0.0	541.2	68.6	84.9	69.1	3.4 - 3.2	0.0 - 0.0	9.2 - 0.0	7.4 - 3.6	7.6 - 3.5	4.3 - 3.4
CCR S.A.	DEC	41 - 32	212 - 105	27 - 16	43 - 20	21 - 17	20 - 11	39.6	509.2	107.1	154.8	70.8	73.0	1.4 - 1.1	7.0 - 1.2	7.7 - 3.5	6.1 - 3.7	8.0 - 3.8	6.1 - 3.2
OIL & GAS STORAGE AND TRANSPORTATION																			
ENBRIDGE INC.	DEC	19 - 14	39 - 23	20 - 16	35 - 26	35 - 27	30 - 21	115.3	206.4	111.4	133.4	107.7	69.7	7.2 - 5.8	8.2 - 6.2	9.5 - 5.7	7.4 - 5.7	7.1 - 5.3	5.9 - 3.7
KINDER MORGAN, INC.	DEC	25 - 17	475 - 213	22 - 16	30 - 22	2324 - 1698	94 - 49	141.5	2051.3	99.3	110.3	697.3	179.7	7.1 - 5.5	7.7 - 5.6	10.0 - 4.5	5.4 - 3.9	5.1 - 2.5	3.0 - 2.2
ONEOK, INC.	DEC	20 - 11	55 - 11	25 - 17	26 - 18	45 - 36	35 - 12	111.2	262.0	114.0	115.9	213.9	147.0	7.0 - 5.1	10.3 - 5.7	24.3 - 4.6	6.7 - 4.7	5.8 - 4.5	6.0 - 4.2
PEMBINA PIPELINE CORPORATION	DEC	21 - 15	NM - NM	19 - 15	21 - 17	25 - 21	42 - 27	122.5	NM	87.8	97.6	88.4	75.3	6.7 - 4.7	8.4 - 5.9	15.2 - 4.7	5.8 - 4.5	5.6 - 4.7	5.3 - 4.4
TC ENERGY CORPORATION	DEC	36 - 27	16 - 10	16 - 11	16 - 12	19 - 17	386 - 259	176.9	68.2	47.3	46.7	47.3	659.2	6.0 - 4.9	6.5 - 5.1	6.7 - 4.1	5.7 - 4.3	5.6 - 4.0	4.2 - 3.5
THE WILLIAMS COMPANIES, INC.	DEC	24 - 16	140 - 54	42 - 31	NM - NM	12 - 10	NM - NM	131.3	919.9	216.7	NM	45.6	NM	6.5 - 4.5	8.0 - 5.5	17.3 - 6.3	6.9 - 5.0	5.7 - 3.6	4.4 - 2.5
UTILITIES																			
ALGONQUIN POWER & UTILITIES CORP.	DEC	55 - 42	16 - 10	18 - 13	38 - 32	59 - 46	41 - 34	119.4	33.5	38.6	94.3	133.3	139.2	5.6 - 4.3	5.1 - 3.5	5.9 - 3.4	5.2 - 4.0	5.4 - 4.2	5.4 - 4.1
ALLIANT ENERGY CORPORATION	DEC	24 - 18	24 - 16	24 - 18	21 - 17	23 - 19	25 - 19	61.2	61.4	60.5	60.9	63.0	71.7	3.1 - 2.6	3.3 - 2.6	3.8 - 2.5	3.4 - 2.6	3.6 - 2.8	3.4 - 2.8
AMEREN CORPORATION	DEC	23 - 18	25 - 17	24 - 19	21 - 16	30 - 24	20 - 16	57.1	56.7	57.0	55.3	82.4	63.7	2.9 - 2.4	3.1 - 2.4	3.2 - 2.3	3.0 - 2.4	3.5 - 2.7	3.6 - 2.8
AMERICAN ELECTRIC POWER COMPANY, INC.	DEC	18 - 15	24 - 16	25 - 19	21 - 16	20 - 16	57 - 46	60.6	64.3	70.0	65.0	61.6	182.8	3.9 - 3.0	4.0 - 3.2	4.0 - 2.7	3.7 - 2.8	3.9 - 3.2	4.1 - 3.2
APA GROUP	JUN	3683 - 2904	44 - 32	48 - 35	43 - 33	47 - 34	58 - 50	16334.0	183.6	186.4	185.1	202.3	245.0	6.2 - 4.2	5.6 - 4.2	5.8 - 3.9	5.4 - 4.4	5.7 - 4.3	5.7 - 4.2
ATMOS ENERGY CORPORATION	SEP	20 - 17	25 - 16	26 - 20	17 - 14	24 - 18	24 - 17	48.7	47.0	48.0	35.6	48.4	50.0	3.0 - 2.2	3.0 - 2.2	2.9 - 1.8	2.4 - 1.9	2.5 - 2.0	2.6 - 2.0
BROOKFIELD INFRASTRUCTURE PARTNERS L.P.	DEC	30 - 24	128 - 59	713 - 457	70 - 50	NM - NM	28 - 17	99.2	399.4	1169.2	285.9	4372.7	135.4	4.0 - 3.2	4.0 - 3.3	8.2 - 3.7	6.4 - 4.2	5.6 - 4.2	5.6 - 4.3
CENTERPOINT ENERGY, INC.	DEC	12 - 8	NM - NM	23 - 18	40 - 34	7 - 6	25 - 17	33.1	NM	87.9	138.6	25.7	102.5	2.6 - 2.1	3.3 - 2.4	9.6 - 2.4	4.7 - 3.7	4.5 - 3.6	4.3 - 3.5
CHUBU ELECTRIC POWER COMPANY, INCORPOR/#	MAR	8 - 6	8 - 6	17 - 14	16 - 13	12 - 8	9 - 6	NM	25.7	23.1	38.0	30.5	19.8	4.5 - 3.4	4.3 - 3.2	3.6 - 2.2	2.6 - 1.7	2.3 - 1.9	2.3 - 1.7
CLP HOLDINGS LIMITED	DEC	24 - 21	19 - 14	53 - 43	18 - 14	15 - 13	17 - 12	90.8	67.1	159.8	54.4	49.8	53.8	4.8 - 3.9	4.4 - 3.8	4.7 - 3.6	3.9 - 3.0	3.7 - 3.0	3.8 - 3.3

Note: Data as originally reported. CAGR-Compound annual growth rate. #Of the following calendar year.
Source: S&P Capital IQ.

Company	Yr. End	Earnings per Share ($) 2021	2020	2019	2018	2017	2016	Tangible Book Value per Share ($) 2021	2020	2019	2018	2017	2016	Share Price (High-Low, $) 2021	2020	2019	2018	2017	2016
AIRPORT SERVICES																			
AENA S.M.E., S.A.	DEC	(0.5)	(1.0)	10.8	10.1	9.9	8.2	41.4	44.2	40.4	42.2	41.6	31.4	174.3 - 142.4	216.7 - 109.5	201.9 - 150.3	206.4 - 148.8	222.0 - 154.8	144.9 - 98.2
CONSTRUCTION & ENGINEERING																			
VINCI SA	DEC	5.1	2.7	6.5	6.1	5.9	4.7	(53.1)	(50.8)	(51.6)	(37.9)	(38.4)	(35.7)	110.3 - 85.7	131.3 - 67.0	115.0 - 78.8	101.7 - 80.1	106.6 - 77.4	73.7 - 52.7
FERROVIAL, S.A.	DEC	1.8	(0.7)	0.4	(0.7)	0.7	0.5	(11.7)	(5.6)	(3.1)	(3.4)	(4.7)	(4.7)	31.9 - 22.5	37.3 - 20.1	30.9 - 19.5	22.8 - 18.5	25.0 - 20.0	22.3 - 16.0
QUANTA SERVICES, INC.	DEC	3.3	3.1	2.7	1.9	2.0	1.3	(1.5)	12.9	11.3	10.1	10.8	10.2	124.7 - 67.6	74.0 - 23.8	44.1 - 29.4	40.1 - 27.9	39.7 - 30.2	36.9 - 16.8
BOUYGUES SA	DEC	3.4	2.2	3.6	4.1	3.6	2.2	3.5	2.2	5.5	4.0	5.4	2.0	42.3 - 33.4	50.5 - 27.2	44.6 - 32.6	52.6 - 34.4	53.8 - 40.3	40.7 - 26.1
EIFFAGE SA	DEC	9.0	4.6	8.3	7.3	6.8	5.3	(116.7)	(125.8)	(109.5)	(114.3)	(125.8)	(123.6)	108.6 - 82.6	136.7 - 54.6	115.8 - 79.7	116.4 - 80.8	113.1 - 78.9	76.8 - 58.7
SKANSKA AB (PUBL)	DEC	1.8	2.9	1.6	1.3	1.2	1.5	11.0	10.1	7.3	6.6	6.4	5.7	28.7 - 21.8	29.3 - 16.8	23.3 - 14.7	20.3 - 15.2	28.1 - 20.6	24.2 - 16.3
KAJIMA CORPORATION #	MAR	1.7	1.7	1.9	1.9	2.3	1.8	15.6	15.4	14.1	12.9	11.9	9.3	14.4 - 10.8	14.3 - 8.8	15.6 - 10.8	21.0 - 12.5	23.1 - 12.7	14.4 - 10.1
TAISEI CORPORATION #	MAR	2.9	4.0	5.3	4.6	5.3	3.5	35.0	36.3	32.4	29.3	27.5	22.1	39.3 - 28.5	45.0 - 26.7	49.0 - 32.4	57.4 - 40.0	58.8 - 34.5	39.8 - 27.6
ACS, ACTIVIDADES DE CONSTRUCCIÓN Y SERVICIC	DEC	12.2	2.4	3.5	3.4	3.1	2.6	12.6	(0.6)	0.9	1.2	(1.5)	(2.4)	33.5 - 23.4	43.9 - 13.7	46.0 - 36.3	43.9 - 30.5	44.1 - 34.0	32.3 - 20.4
OBAYASHI CORPORATION #	MAR	0.4	1.2	1.5	1.4	1.2	1.2	10.9	11.6	10.5	9.6	8.9	7.3	9.4 - 7.2	12.4 - 7.5	11.8 - 8.4	13.0 - 8.5	14.3 - 9.0	10.1 - 7.8
CONSTRUCTION MACHINERY AND HEAVY TRUCK																			
CATERPILLAR INC.	DEC	11.8	5.5	10.7	10.3	1.3	(0.1)	17.0	14.0	12.4	10.3	9.0	8.1	246.7 - 179.3	183.8 - 87.5	148.9 - 111.8	173.2 - 112.1	158.7 - 90.3	97.4 - 56.4
AB VOLVO (PUBL)	DEC	1.8	1.2	1.9	1.4	1.2	0.7	5.7	6.6	5.4	4.7	4.2	3.2	26.6 - 20.1	25.3 - 11.6	17.2 - 12.1	18.9 - 12.8	20.9 - 12.9	12.1 - 7.9
PACCAR INC	DEC	5.3	3.7	6.9	6.2	4.8	1.5	32.9	30.0	28.0	24.8	22.9	19.3	103.2 - 78.0	95.8 - 49.1	83.4 - 55.8	79.7 - 53.4	75.7 - 61.9	68.5 - 43.5
CUMMINS INC.	DEC	14.6	12.0	14.5	13.2	6.0	8.2	44.1	39.3	34.7	33.7	31.5	36.2	277.1 - 203.4	244.7 - 101.0	186.7 - 130.0	194.2 - 124.4	181.8 - 134.1	147.1 - 79.9
DAIMLER TRUCK HOLDING AG	DEC	3.2	(0.2)	2.4	2.5	0.0	0.0	19.3	10.8	12.1	11.3	0.0	0.0	39.9 - 31.6	0.0 - 0.0	0.0 - 0.0	0.0 - 0.0	0.0 - 0.0	0.0 - 0.0
TOYOTA INDUSTRIES CORPORATION #	MAR	4.8	4.0	4.4	4.4	5.1	3.8	93.7	83.7	62.4	61.6	66.5	59.3	88.8 - 69.9	79.9 - 41.2	61.7 - 44.7	71.0 - 43.1	66.2 - 44.5	55.6 - 32.0
EPIROC AB (PUBL)	DEC	0.6	0.5	0.5	0.5	0.4	0.3	1.7	2.0	1.6	1.4	0.9	1.1	25.7 - 16.6	18.6 - 9.5	12.7 - 8.8	11.9 - 8.2	0.0 - 0.0	0.0 - 0.0
KOMATSU LTD. #	MAR	2.0	1.0	1.5	2.5	2.0	1.1	16.3	15.0	14.3	14.2	13.3	14.0	30.8 - 22.1	27.5 - 14.6	26.7 - 20.1	40.8 - 20.5	36.4 - 23.2	24.1 - 13.3
WESTINGHOUSE AIR BRAKE TECHNOLOGIES CORP	DEC	3.0	2.2	1.8	3.1	2.7	3.3	(11.3)	(11.8)	(13.1)	(6.8)	(8.9)	(9.7)	97.7 - 71.1	81.5 - 35.1	81.8 - 61.0	115.4 - 65.5	93.8 - 69.2	89.2 - 60.3
ALSTOM SA #	MAR	(1.7)	1.1	2.3	3.4	2.0	1.4	(9.2)	(8.3)	7.5	11.7	10.0	9.7	56.5 - 31.6	61.9 - 36.4	48.3 - 37.5	47.5 - 37.5	43.8 - 29.9	30.0 - 20.1

Note: Data as originally reported. CAGR-Compound annual growth rate. #Of the following calendar year.
Source: S&P Capital IQ.

Company		Yr. End	Earnings per Share ($)						Tangible Book Value per Share ($)						Share Price (High-Low, $)					
			2021	2020	2019	2018	2017	2016	2021	2020	2019	2018	2017	2016	2021	2020	2019	2018	2017	2016
CONSTRUCTION MATERIALS																				
CRH PLC		DEC	3.3	1.4	2.1	3.4	2.7	1.6	13.6	12.9	12.1	10.7	10.4	7.8	53.5 - 40.4	43.5 - 20.5	41.2 - 26.6	36.8 - 24.9	45.2 - 31.1	37.4 - 19.5
HOLCIM LTD		DEC	4.1	3.1	3.8	2.6	(2.9)	2.9	22.2	24.3	25.0	20.6	20.9	22.0	64.1 - 47.4	61.0 - 32.0	55.8 - 40.9	61.0 - 39.7	62.4 - 51.8	57.8 - 32.8
VULCAN MATERIALS COMPANY		DEC	5.0	4.4	4.6	3.9	4.5	3.1	8.3	13.1	10.3	7.2	5.9	5.4	210.3 - 143.1	153.9 - 65.6	152.5 - 95.3	141.2 - 82.5	136.8 - 109.0	138.2 - 78.8
MARTIN MARIETTA MATERIALS, INC.		DEC	11.2	11.5	9.7	7.4	11.3	6.6	31.7	47.7	39.5	32.7	32.0	23.3	445.0 - 274.6	287.5 - 135.1	281.2 - 167.6	241.3 - 150.8	244.3 - 191.1	236.4 - 108.3
JAMES HARDIE INDUSTRIES PLC	#	MAR	1.0	0.6	0.5	0.5	0.3	0.6	2.2	1.5	1.5	1.4	(0.5)	(0.5)	42.2 - 25.9	31.3 - 9.7	20.6 - 10.3	17.0 - 10.1	18.1 - 13.3	16.7 - 10.3
HEIDELBERGCEMENT AG		DEC	10.1	(13.2)	6.2	6.6	5.6	3.6	40.5	26.6	27.3	20.8	18.3	19.4	92.2 - 64.4	81.3 - 35.5	82.5 - 58.5	110.1 - 59.4	113.0 - 92.4	99.9 - 61.4
CEMEX, S.A.B. DE C.V.		DEC	0.1	(0.1)	0.0	0.0	0.1	0.0	0.0	(0.1)	(0.2)	(0.2)	(0.2)	(0.3)	0.9 - 0.5	0.6 - 0.2	0.6 - 0.3	0.8 - 0.5	1.0 - 0.7	0.8 - 0.3
HIGHWAY AND RAILTRACKS																				
TRANSURBAN GROUP		JUN	0.9	(0.0)	0.0	0.2	0.1	0.0	(3.2)	(4.8)	(4.9)	(5.4)	(5.5)	(5.2)	10.9 - 9.0	12.7 - 7.0	11.3 - 8.1	8.8 - 7.5	10.2 - 7.9	9.2 - 6.8
ATLANTIA SPA		DEC	0.9	(1.8)	0.2	1.1	1.7	1.4	(52.2)	(88.6)	(75.6)	(79.7)	(28.8)	(28.2)	20.2 - 14.7	28.4 - 11.2	28.0 - 19.9	32.7 - 19.4	34.4 - 25.1	26.2 - 20.4
CCR S.A.		DEC	0.1	0.0	0.2	0.1	0.3	0.3	(1.2)	(0.8)	(1.2)	(1.2)	(1.1)	(1.5)	2.6 - 1.9	3.9 - 1.7	4.9 - 2.8	4.3 - 2.0	5.8 - 4.5	5.9 - 3.3
OIL & GAS STORAGE AND TRANSPORTATION																				
ENBRIDGE INC.		DEC	2.3	1.2	2.0	1.1	1.3	1.4	6.4	7.3	8.7	9.0	6.0	9.9	42.7 - 32.1	45.0 - 25.9	40.2 - 32.1	37.4 - 27.4	46.5 - 35.0	44.1 - 29.8
KINDER MORGAN, INC.		DEC	0.8	0.0	1.0	0.7	0.0	0.2	4.1	4.0	4.2	3.9	3.8	4.0	19.3 - 13.5	22.6 - 9.4	21.5 - 15.1	19.8 - 14.6	23.0 - 16.7	23.4 - 11.2
ONEOK, INC.		DEC	3.4	1.4	3.1	2.8	1.3	1.7	11.8	11.8	12.7	13.6	11.7	(3.9)	66.8 - 37.4	78.5 - 12.2	77.2 - 52.7	72.0 - 50.3	59.3 - 47.1	59.5 - 18.9
PEMBINA PIPELINE CORPORATION		DEC	1.6	(0.7)	2.1	1.7	1.5	0.8	8.0	8.1	10.4	10.8	10.5	7.4	34.0 - 24.1	42.2 - 12.0	39.1 - 30.6	35.1 - 27.6	36.8 - 31.1	31.8 - 19.4
TC ENERGY CORPORATION		DEC	1.5	3.7	3.3	2.9	2.7	0.1	13.9	12.3	11.4	8.9	7.2	5.4	53.9 - 40.5	60.1 - 36.9	54.5 - 37.0	45.6 - 35.1	52.0 - 47.2	47.2 - 30.9
THE WILLIAMS COMPANIES, INC.		DEC	1.2	0.2	0.7	(0.2)	2.6	(0.6)	3.3	3.5	4.4	5.7	1.0	(6.7)	29.9 - 19.9	24.2 - 8.4	29.6 - 21.5	33.7 - 20.4	32.7 - 26.8	32.2 - 10.2
UTILITIES																				
ALGONQUIN POWER & UTILITIES CORP.		DEC	0.4	1.4	1.0	0.4	0.2	0.2	6.5	6.2	5.0	4.1	3.5	3.6	17.9 - 13.6	17.6 - 10.9	14.9 - 10.3	10.8 - 8.9	11.5 - 8.9	9.3 - 7.7
ALLIANT ENERGY CORPORATION		DEC	2.6	2.5	2.3	2.2	2.0	1.6	23.9	22.8	21.2	19.4	18.1	17.0	62.4 - 46.0	60.3 - 37.7	55.4 - 40.8	46.6 - 36.8	45.6 - 36.6	41.0 - 30.4
AMEREN CORPORATION		DEC	3.8	3.5	3.4	3.3	2.1	2.7	36.0	33.7	31.1	29.5	27.9	27.6	90.8 - 69.8	87.7 - 58.7	80.9 - 63.1	71.0 - 51.9	64.9 - 51.4	54.1 - 41.5
AMERICAN ELECTRIC POWER COMPANY, INC.		DEC	5.0	4.4	3.9	3.9	3.9	1.2	44.4	41.3	39.6	38.5	37.1	35.3	91.5 - 74.8	105.0 - 65.1	96.2 - 72.3	81.1 - 62.7	78.1 - 61.8	71.3 - 56.8
APA GROUP		JUN	0.0	0.2	0.2	0.2	0.2	0.1	(0.4)	(0.4)	(0.2)	(0.0)	(0.3)	(0.3)	7.6 - 6.0	9.1 - 6.2	8.3 - 5.9	7.3 - 5.3	7.8 - 6.3	7.1 - 5.2
ATMOS ENERGY CORPORATION		SEP	5.1	4.9	4.4	5.4	3.7	3.4	54.2	48.1	42.1	36.3	29.9	26.3	105.3 - 84.6	121.1 - 77.9	115.2 - 89.2	100.8 - 76.5	93.6 - 72.5	82.0 - 60.0
BROOKFIELD INFRASTRUCTURE PARTNERS L.P.		DEC	1.4	0.3	0.0	0.4	(0.0)	0.8	(38.2)	(32.0)	(36.1)	(26.4)	(15.0)	(0.9)	41.1 - 32.2	35.1 - 15.5	31.7 - 20.4	26.9 - 19.4	28.1 - 19.9	21.0 - 12.2
CENTERPOINT ENERGY, INC.		DEC	2.3	(1.8)	1.3	0.7	4.1	1.0	6.8	2.2	3.3	10.7	8.7	6.0	28.4 - 19.3	27.5 - 11.6	31.4 - 24.3	29.6 - 24.8	30.5 - 24.5	25.0 - 16.4
CHUBU ELECTRIC POWER COMPANY, INCORPORAT	#	MAR	(0.5)	1.8	2.0	0.9	0.9	1.4	22.0	24.3	23.3	21.2	21.5	20.0	12.8 - 9.8	15.4 - 11.3	16.8 - 13.5	16.6 - 11.7	14.9 - 12.1	15.2 - 10.9
CLP HOLDINGS LIMITED		DEC	0.4	0.6	0.2	0.7	0.7	0.6	4.9	4.9	4.5	4.4	4.3	3.9	10.5 - 9.2	10.9 - 8.4	12.5 - 10.0	12.4 - 9.6	10.9 - 9.2	10.9 - 8.0

Note: Data as originally reported. CAGR-Compound annual growth rate. #Of the following calendar year.
Source: S&P Capital IQ.

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