



Future of Construction

A Global Forecast for
Construction to 2030

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Graham Robinson, Jeremy Leonard and Toby Whittington from Oxford Economics are the authors of this report and undertook the analysis and writing.

The authors are responsible for writing and presenting many leading reports on the global construction industry.

The authors and Oxford Economics thank Marsh and Guy Carpenter for their leadership and considerable input into shaping this report and to writing separately attributable authored features in this report on thematic areas that will shape the *Future of Construction*.

About the Authors

Graham Robinson is Global Infrastructure and Construction Lead at Oxford Economics and is one of the world's leading construction economists, according to *Engineering News Record* (ENR). He leads on consultancy assignments and is an author of *Global Construction 2030* and many other industry reports and writes regularly for journals and other media. He is also Global Business Consultant at Pinsent Masons LLP, the world's leading international law firm for construction, and works closely with the Institution of Civil Engineers.

Jeremy Leonard is Managing Director of Global Industry Services at Oxford Economics and is responsible for overseeing the work of the industry forecasting team and managing the operation and output of the 77-country and 100-sector Global Industry Model as well as related consultancy assignments. He is an author of *Global Construction 2030*.

Toby Whittington is Lead Economist at Oxford Economics and is responsible for the analysis and preparation of global construction forecasts as well as related consultancy assignments. He is an author of *Global Construction 2030*.

Key Contributors

The feature on *Climate Catastrophe* written by **Jessica Turner, PhD, ACII, Managing Director, Head of International Catastrophe Advisory at Guy Carpenter**, gives key insights into the way in which climate change will affect the risks and opportunities for construction.

The feature on the *Internet of Materials* written with **Norbert Pralle, Head of Innovation Management at Ed. Zublin AG, part of STRABAG SE Group and Chairman of ENCORD**, explains clearly how a deconstruction industry will emerge to reuse materials from existing buildings and infrastructure.

The feature on a *Carbon Calculator* tool developed by Balfour Beatty in collaboration with Innovate UK, Leeds Beckett University, Hertfordshire University; and White Frog Publishing, written by **Bekir Andrews, Associate Director, Group Sustainability, Balfour Beatty PLC**, provides insight into how disclosure of the carbon footprint of new buildings and infrastructure is emerging.

The feature on the *Global Flow of Funds* written by **Michael Watson, Partner, Head of Finance and Projects and Head of Climate Change Advisory at Pinsent Masons LLP**, explains how the sources and flows of funds for infrastructure globally, including ESG and green financing, are driving infrastructure investment.

Foreword

The construction industry has demonstrated remarkable resilience during the worst of the coronavirus pandemic and over a period of significant disruption to the global economy — the worst since the Great Depression some 80 years ago.

The near-term outlook for the global economy remains clouded by a surge in inflation and supply chain bottlenecks, and the Delta variant remains a threat. However, Oxford Economics forecasts in this newly published global forecast *Future of Construction*, the global construction industry is set to lead global economic recovery from the pandemic over the medium-term and is expected to grow faster than the manufacturing or service sectors.

The global construction market is expected to grow by US\$4.5 trillion over the decade to 2030 to reach US\$15.2 trillion. To better understand this and prepare for the future with our clients, Marsh and Guy Carpenter chose to partner with Oxford Economics on this project because of its deep industry expertise which, underpinned by advanced data-led analysis, provides genuinely valuable insights to those determining their future strategic direction within industry segments.

As this report makes clear, climate change and its risk and opportunities represent the construction industry's biggest challenge. ESG and green financing will drive a greener recovery from the pandemic. This report also highlights that the emergence of a deconstruction industry that will reuse existing built assets and tools that will help in the disclosure of the carbon footprint for any new asset ahead of physical construction will become the new norm.

There are huge opportunities and risk factors for the construction industry from climate resilience driven by natural catastrophes.

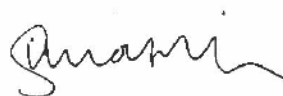
The common themes that arise from this report – including key observations from construction firms operating in global markets – is changing risk and the opportunities shaping the *Future of Construction*.

It is therefore essential that the construction industry and insurance marketplace work closely together to ensure changing risk profiles are managed across stakeholders and that continued innovation will be a benefit to society.

Marsh and Guy Carpenter are delighted to have worked with Oxford Economics to provide insight into the opportunities and developments expected within the construction industry globally in the coming years. It will undoubtedly be an exciting period of challenge, but one we should look forward to, as the construction and (re)insurance industries continue to play a vital role in the economic development and future prosperity of the world economy, and in helping to improve the global environment.



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Executive Summary

Construction set to be a global engine for economic growth and recovery from COVID-19

Global construction output in 2020 was US\$10.7 trillion¹ and we expect this to grow by 42% or US\$4.5 trillion between 2020 and 2030 to reach US\$15.2 trillion. The global construction industry is set to be a global engine for economic growth and recovery from COVID-19.

Shorter term, global construction output is expected to reach US\$13.3 trillion by 2025 – adding US\$2.6 trillion to output in the five years from 2020.

Asia-Pacific will account for US\$2.5 trillion of growth in construction output between 2020 and 2030, up by over 50% to become a US\$7.4 trillion market by 2030.

Construction output in North America will grow by 32%, or US\$580 billion from 2020 to 2030, to US\$2.4 trillion in 2030.

Western Europe is forecast to grow by 23% between 2020 and 2030 and is expected to push up construction output to US\$2.5 trillion in 2030.

Growth in construction over the decade to 2030 will be higher than manufacturing or services

Growth in construction output is forecast to average 3.6% per annum over the decade to 2030 – higher than either the manufacturing or services sectors.

Growth in construction output is forecast to average 4.5% over the five years between 2020 and 2025 – again higher than either manufacturing or services sectors and driven by sharp recovery from the effects of COVID-19 and huge stimulus support by governments. Spending of accumulated excess household savings is expected to contribute to this heightened growth.

Supply chain bottlenecks constraining activity levels and causing inflationary spikes for construction are expected to be transitory but are a risk to our forecasts.

Rising populations will drive construction demand across emerging markets

Growth will be driven by rising populations and urbanisation across emerging nations driving demand for infrastructure and residential construction.

Permanent inward immigration will support construction demand across developed countries

Permanent inward immigration into the Anglosphere (US, UK, Australia, Canada, and New Zealand) as well as Germany and other OECD countries will help to support demand across those developed countries.

Growing working age populations help drive need for workplace construction

Growth in working age populations in countries such as India and Indonesia as well as Canada and Australia will support demand for workplace construction where, we expect higher demand for industrial and logistics space to support growth in online retailing and manufacturing.

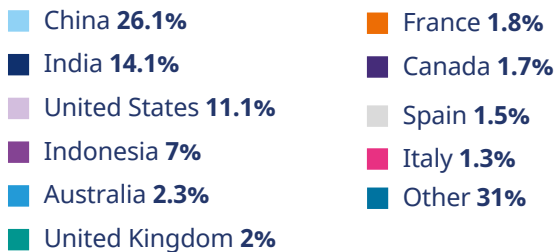
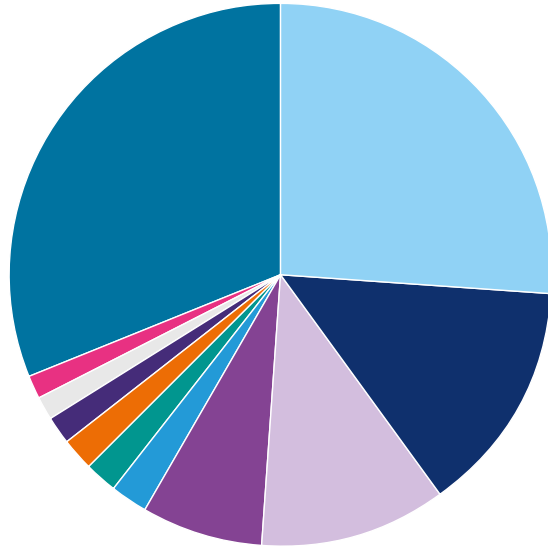
A return to urban centers will support multifamily growth

A shift towards urban centres is gradually expected to regain momentum after COVID-19 and will support growth in multifamily residential construction.



Contribution to global construction growth 2020-2030

2017 prices US\$bn



Source : Oxford Economics/Haver Analytics

China, India, US, and Indonesia to account for 58.3% of global growth in construction output

Growth will be concentrated in a small handful of countries. Just four countries – China, India, US, and Indonesia – will account for 58.3% of estimated global growth in construction between 2020 and 2030.

China alone will account for 26.1% of global growth. India is forecast to account for 14.1% and the US for 11.1%, while Indonesia is expected to account for 7.0% of global growth – almost the same as the combined growth of Australia, UK, France, and Canada, which are the next four largest contributors.

Construction to reach 13.5% of global GDP by 2030

Spending on construction accounted for 13% of global GDP in 2020 and we expect this to reach over 13.5% in 2030.





Strong growth and recovery from COVID of 6.6% for global construction in 2021

In 2021, we expect strong recovery from the COVID pandemic with global construction output growing by 6.6%.

Higher growth in emerging markets with near double-digit growth in LATAM in 2021

We forecast emerging construction markets will rebound by 7.2% in 2021 – adding to acceleration in global construction output and with near double-digit growth of 9.6% in LATAM.

Sub-Saharan Africa is forecast to grow fastest of all regions globally in the longer-term with an average annual growth of 5.7% between 2020 and 2030.

Decade of growth for construction to 2030 will be 35% higher compared to previous decade to 2020

Global construction output is forecast to be 35% higher over the next decade to 2030 compared to the previous decade to 2020. A cumulative total of US\$135 trillion in construction output is forecast in the decade to 2030.

Residential construction driving short-term growth

Residential construction will drive growth in the short-term driven by the unleashing of excess household savings and demand for residential space – we forecast residential construction output will grow by 7.1% in 2021. Huge levels of excess household savings have built up across advanced economies – reaching more than 10% of GDP in North America.

Infrastructure forecast to be fastest growth sector driven by unprecedented levels of government stimulus

Infrastructure is forecast to be the fastest growth sector for construction over the period to 2030. We forecast annual average growth of 5.1% globally for infrastructure construction output during the period from 2020 to 2025 – driven by unprecedented levels of government stimulus and the acceleration of pipelines of global mega infrastructure projects.

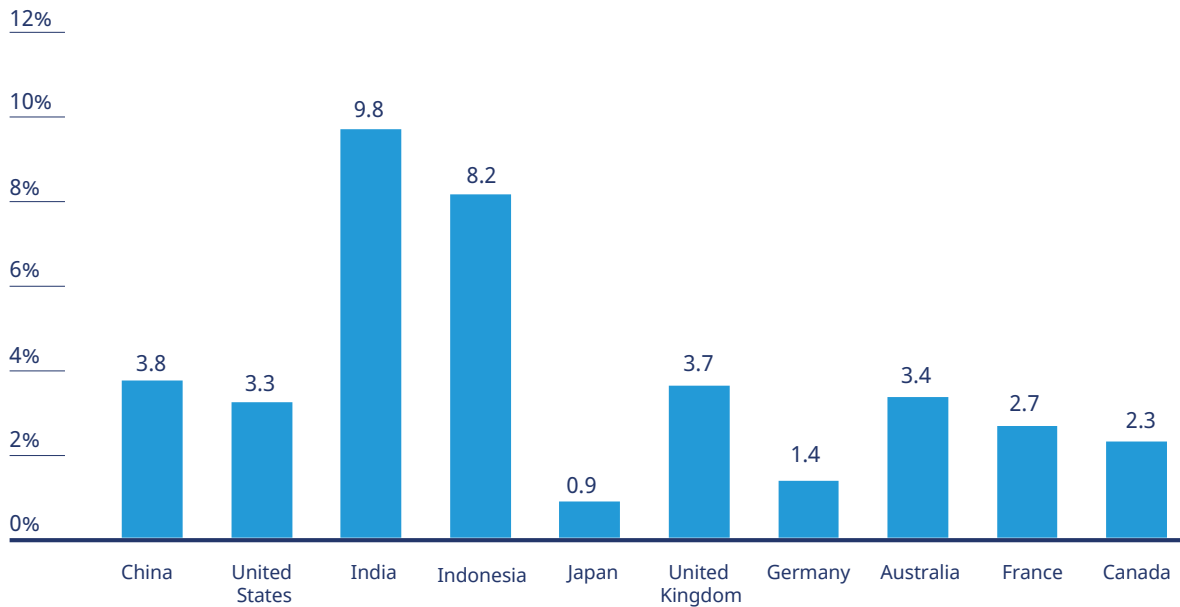
The US\$1.2 trillion Bipartisan Infrastructure Bill in the US will help push up growth in US transportation infrastructure put-in-place construction to an average of 8.9% over the period from 2020 to 2025. The the European Union €723 billion Recovery and Resilience Facility, which is part of the €806 billion Next Generation EU fund (often reported as €750 billion in 2018 prices) will meanwhile help support recovery of construction in Western Europe by 7.9% in 2021.

Infrastructure pipelines are focus of government acceleration in stimulus — global mega infrastructure projects will help support growth

Acceleration of infrastructural investment is a focus for governments. The readiness of existing pipelines of infrastructure are key to this acceleration. Shovel ready projects help. The UK and Australia are well positioned to accelerate infrastructure development amongst the top 10 global construction markets.

Growth in infrastructure construction 2020-2030

%, CAGR



Source : Oxford Economics/Haver Analytics

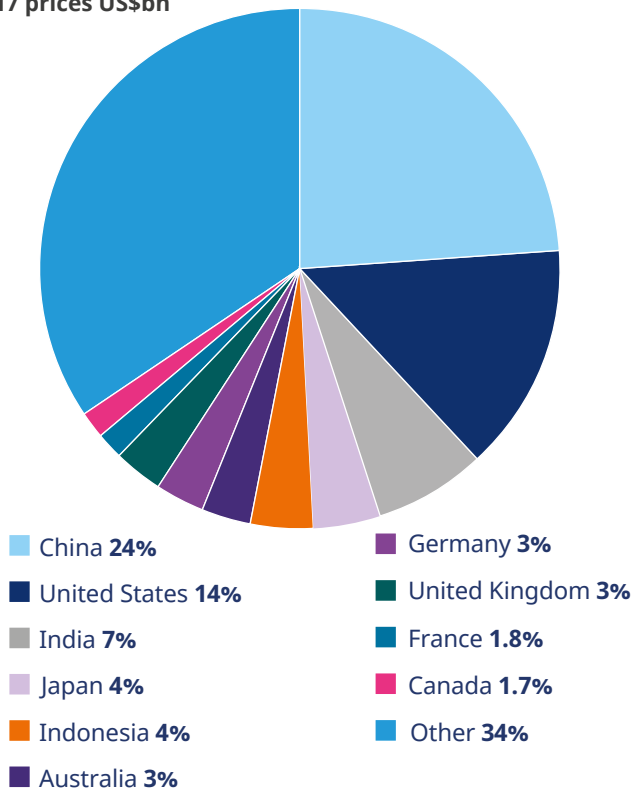
Growth in UK infrastructure to rival China over the next decade to 2030 as UK mega projects provide heightened growth

Growth in infrastructure construction in the UK is expected to rival that of China over the next decade to 2030, with the UK's mega infrastructure projects providing heightened infrastructure construction output.

A significant pipeline of infrastructure in Australia will also see growth averaging 3.4% per annum over the period to 2030.

Top 10 global construction markets 2030

2017 prices US\$bn



Source : Oxford Economics/Haver Analytics

Global top 10 construction markets see continued shift to emerging markets, with China and US clear leaders in 2030

The global top 10 construction markets are expected to represent two-thirds of total global output in 2030.

India is forecast to become the world’s third-largest construction market as it overtakes Japan in 2023.

Indonesia will become the world’s fourth-largest construction market by 2030 when it is forecast to also overtake Japan. Indonesia will accelerate to overtake Germany in 2023 and UK in 2024.

UK will overtake Germany in 2023 to become the world’s fifth-largest construction market but will be overtaken by Indonesia in 2024 to remain the sixth-largest market for the remainder of our forecast to 2030.

Germany will be overtaken by both UK and Indonesia in 2023, falling two places to seventh position in the global ranking for the same year.

Japan will drop two places to become the world’s fifth-largest construction market in 2030 as it is overtaken by India and Indonesia.

Elevated levels of debt to GDP ratios will drive the need for a new wave of PPPs

The ability of governments around the world to fund infrastructural development in the longer-term will be significantly weakened by elevated levels of debt to GDP ratios, increasing the need for Public Private Partnerships (PPPs).

Climate change and the race to Net Zero are greatest challenges for construction and will drive new deconstruction opportunities

Climate change and the race to Net Zero are arguably the greatest challenges that face the construction industry.

The built environment is responsible for around 40% of greenhouse gas emissions globally. The need to radically reduce the amounts of carbon embedded in new construction is a huge challenge and will drive the growth of a deconstruction industry.

An emerging deconstruction industry that will reuse huge existing urban stockpiles of construction materials could reduce embedded carbon in the construction of new buildings and infrastructure.

The climate crisis is driving huge demand to decarbonise energy networks and develop renewable energy. Saudi Arabia’s Giga Projects are leading in Net Zero.

Sustainable and quality infrastructure is a driver of economic growth and social progress and is an enabler to achieving Sustainable Development Goals (SDGs) and Paris Agreement commitments. In 2020, ESG-related capital for infrastructure grew 28% with a large part of the increase due to a flow of fundraising into sustainability-related strategies.

Modern methods of construction expected to become new normal

Modern methods of construction, including off-site manufacturing, are expected to become the new normal and will radically transform construction productivity. Distributed factories using 3D printing technologies to make components for construction assembly using advanced robotics are rapidly developing — especially in the residential sector.

The key drivers shaping the *Future of Construction* will have a profound effect on the construction industry – not only the massive influence exerted by Emerging Asia, but also the significant changes that we expect from Net Zero and climate change. The rapid digitalisation and use of modern methods of construction will also have far-reaching consequences for the industry and its major players. These forces are changing risk profiles in ways that will require the sector to adapt to harness the massive growth potential for construction. Those companies



that are positioned to harness these drivers of change will flourish and are likely to lead the industry towards a completely different future.

Future of Construction, published by Marsh and Guy Carpenter — part of Marsh McLennan, the world's leading professional services firm in the areas of risk, strategy, and people — has been written by Oxford Economics, a global leader in economic forecasting and analysis.

We believe this report will be timely in giving clients of both Marsh and Guy Carpenter a view on the future of construction as the industry recovers from the unprecedented effects of COVID-19. It includes valuable insight for senior executives into the key drivers that will help shape the *Future of Construction* over the next decade.

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