The information presented in this section, unless otherwise indicated, is derived from various official government publications and other publications and from the market research report prepared by F&S, which was commissioned by us. We believe that the information has been derived from appropriate sources and have taken reasonable care in extracting and reproducing the information. We have no reason to believe that the information from official government sources is false or misleading in any material respect or that any fact has been omitted that would render the information false or misleading in any material respect. The information has not been independently verified by us, the Sole Sponsor, the [REDACTED], the [REDACTED], the [REDACTED], the [REDACTED], the [REDACTED], the [REDACTED] or other party involved in the [REDACTED] (except F&S) and no representation is given as to its accuracy or completeness.

## SOURCE AND RELIABILITY OF INFORMATION

We had commissioned F&S, an independent market research and consulting company, to conduct an analysis of, and to prepare a report on construction market in the PRC, in order to evaluate the existing market scale and future potential market, and provide a fair and objective overview of China's construction industry in this document. The report prepared by F&S for us is referred to in this document as the F&S Report. We paid F&S a fee of RMB[735,849] for this research service, which we believe reflects the prevailing market rates and the payment of such amount was not conditional on our Group's successful [**REDACTED**] or on the results of the F&S Report.

Founded in 1961, F&S has 40 offices with more than 2,000 industry consultants, market research analysts, technology analysts and economists globally. F&S's services include technology research, independent market research, economic research, corporate best practices advising, training, client research, competitive intelligence and corporate strategy.

F&S's independent research consists of both primary and secondary research obtained from various sources in respect of the target market. Primary research involved in-depth interviews with leading industry participants and industry experts. Secondary research involved reviewing company reports, independent research reports and data based on F&S's own research database. Projected data were obtained from historical data analysis plotted against macroeconomic data with reference to specific industry-related factors. Except as otherwise noted, all of the data and forecasts contained in this section are derived from the F&S Report, various official government publications and other publications. According to F&S, this methodology ensures a full circle and multilevel information sourcing process, where information gathered can be cross-referenced to ensure accuracy. In compiling and preparing the F&S Report, F&S has adopted the following assumptions: (i) China's economy is likely to maintain a steady growth across the forecast period; (ii) China's social, economic and political environment is likely to remain stable in the forecast period; which ensures the stable and healthy development of construction industry in China; and (iii) there is no external shock such as financial crisis or natural disaster to affect the supply and demand in the PRC construction works industry during the forecast period.

Our Directors confirm that, as at the Latest Practicable Date, after making reasonable enquiries, there had been no material adverse change in the market information since the date of the report prepared by F&S which may qualify, contradict or have an impact on the information in this section.

#### **OVERVIEW OF MARCO ECONOMY IN CHINA**

Due to a series of economic stimulus policies including the Revitalisation Plans of Ten Key Industries and the Belt and Road Initiative, the nominal GDP in China has been growing moderately over the past five years, increasing from RMB74.6 trillion in 2016 to 114.4 trillion in 2021, representing a CAGR of 8.9%. Driven by the industry upgrade and supply-side structural reform, it is estimated that nominal GDP in China would continue to grow at a CAGR of 7.1%, from RMB123.3 trillion in 2022 to RMB162.5 trillion in 2026.

# **INDUSTRY OVERVIEW**

Consistent with the steady growth of nominal GDP, the nominal GDP per capita in China has also witnessed a steady growth in the past five years, increasing from RMB53.8 thousand in 2016 to RMB 81 thousand in 2021, representing a CAGR of 8.5%. It is estimated that nominal GDP per capita in China would continue to grow at a CAGR of 7.0%, from RMB84.8 thousand in 2022 to RMB111.2 thousand in 2026.

## OVERVIEW OF MARCO ECONOMY IN HUNAN PROVINCE

The nominal GDP in Hunan Province increased from RMB3.2 trillion in 2016 to RMB4.6 trillion in 2021, representing a CAGR of 7.9%, while the nominal GDP per capita in Hunan Province grew from RMB46.4 thousand in 2016 to RMB69.3 thousand in 2021, representing a CAGR of 8.4%. Driven by the ongoing urbanisation and industrialisation, the per capita disposable income of urban residents in Hunan Province increased from RMB31.3 thousand in 2016 to RMB44.9 thousand in 2021, representing a CAGR of 7.5%, and would continue to grow at a CAGR of 7.0% from 2022 to 2026. The table below sets out selected economic statistics of Hunan Province for the periods indicated.

	2016	2017	2018	2019	2020	2021	2016-2021 CAGR (%)	2022E-2026E CAGR (%)
Population (million) Nominal GDP (RMB	68.2	68.6	69.0	69.2	69.5	69.8	0.5%	0.3%
trillion)	3,155.1	3,390.3	3,642.6	3,975.2	4,178.1	4,606.3	7.9%	7.0%
(RMB thousand) Urbanisation rate (%) Per capita disposable Income of urban residents (RMB	46.4 52.8	49.6 54.6	52.9 56.0	57.6 57.4	61.4 59.0	69.3 60.6	8.4% 2.8%	6.5% 0.7%
thousand)	31.3	33.9	36.7	39.8	42.3	44.9	7.5%	7.0%

Source: National Bureau of Statistics of China and F&S estimate as at 30/09/2022

## THE CONSTRUCTION INDUSTRY IN CHINA AND HUNAN PROVINCE

Construction industry is one of the pillar industries in China, which plays a significant role in national economic development.

## Value Chain

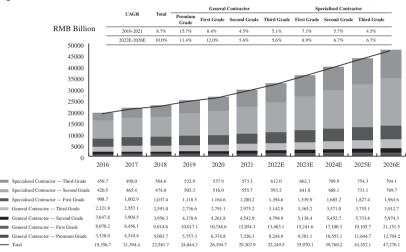
The value chain of the construction market mainly consists of upstream suppliers, midstream contractors and downstream customers. In general, upstream suppliers initiate construction projects and invite tenders from engineering consultancies and contractors before confirming the construction contract. Therefore, it is the industry norm for the upstream suppliers and midstream construction contractors to have relatively short business relationship as project(s) are obtained through tendering and the contractors are engaged on a project-by-project basis. The typical market participants of the upstream suppliers from public and private sectors are government departments and property developers, respectively. Payments for construction services are generally made upon achieving key milestones set forth in the construction services contracts, and there is usually a timing difference between the date of completion of construction works and the date of progress billings for such work. In 2021, construction companies generally received approximately 30% to 78% of the amount of their trade receivables outstanding as at 31 December 2020. It is common for the companies in the PRC construction industry to adopt bill financing arrangement for their daily operation. In general, it takes longer time for Government-related Entities to settle trade receivables. The contractors conduct the construction works after the preliminary works such as site investigation, engineering design and planning have been finished while construction contracts usually take three to five years to complete. The downstream customers (end users) of the construction market include the government, enterprises and individual customers. It is customary in the construction industry in the PRC that general contractors would negotiate with their subcontractors and suppliers for extension of payment dates prior to receipt of payment from the relevant project owners.

#### **Market Participants**

Based on service type, the construction industry can be divided into construction engineering, planning and design, supervision, decoration, installation and provision of corresponding supporting services. Among all of the market participants, construction engineering industry occupies over 85% of the market share in 2021. Based on construction object, construction industry could be divided into four categories: civil building, municipal works, transportation infrastructure and others.

In terms of the qualification classification, construction industry qualifications are divided into three main qualification categories: general construction contracting qualification (12 qualification categories), specialised contracting qualification (36 qualification categories) and construction labour qualification.

## **Overview of the Construction Industry in China**

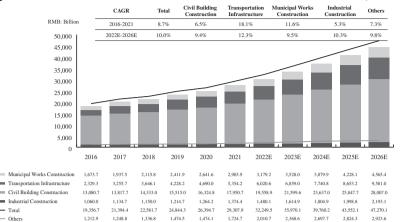


Total Output Value of Construction and its Growth Rate in China, 2016-2026E

Source: National Bureau of Statistics of China and F&S estimate as at 30/09/2022

*Note:* The total output value of construction is a quantitative measurement in terms of the production scale, development efficiency, and gross output of the construction industry, which includes: (i) output of construction engineering which refers to construction field work, equipment installation, building maintenance; (ii) output of axillary construction products and industrial work; (iii) output of outsourcing construction service and machinery leasing service; (iv) output of plan, design and supervision service; and (v) output of other construction related work, products and services.

In China, projects constructed by general contractors occupy the majority of the market share of the construction industry in terms of output value. In 2016, general contractors took 90.8% of the construction market share and this dominant market occupation rate further increased to 91.8% in 2021. Among all qualification grades of general contractors, the general contractors with premium-grade, first-grade and second-grade accounted for 25.0%, 41.1%, 15.5%, respectively, of the total construction market in terms of the output value in 2021. Except for projects with special requirements, most project owners prefer to choose a general contractor to manage the construction project as a whole rather than subcontract to several specialised contractors themselves. Considering the huge demand for urban-rural development, industry upgrade, and the renovation of the old community, it is estimated that the output value of the construction industry will keep increasing. The general contractor is expected to continue to dominate the construction industry in China and its output value is projected to reach RMB43,742.8 billion in 2026, representing a CAGR of 10.2% from 2022 to 2026.



#### Total Output Value of Construction and its Growth Rate in China, 2016-2026E

Source: National Bureau of Statistics of China and F&S estimate as at 30/09/2022

*Note:* Civil building mainly includes commercial buildings, residential buildings and industrial buildings, whose output value contains the output of construction work and its corresponding service such as design and supervision. The transportation infrastructure mainly includes the highways, railways, bridges and other transportation infrastructure (road inside the city is not included in the transportation infrastructure). Municipal works mainly include the urban road, power supply, water supply, etc. Other construction mainly includes the construction works of agriculture buildings such as grain and fodder processing stations, livestock and poultry farms, etc.

Among all of the subsectors, civil building construction held the dominant market position representing 67.6% of the market share in 2016 and 61.3% of the market share in 2021, respectively. For municipal works subsector, according to the Several Opinions of the General Office on Further Strengthening the Management of Urban Planning and Construction (關於進一步加強城市規劃建設 管理工作的若干意見), the municipal works maintenance in the urban area and the construction of underground integrated corridor, which are mostly financed and led by governments, will be important market drivers for the municipal works construction market. As such, the growth rate of civil building and municipal works subsector is projected to be growing steadily at a CAGR of 9.4% and 9.5% from 2022 to 2026, respectively.

## Key Market Drivers

There are a number of factors driving the growth of China's construction industry, including: Accelerating Urbanisation Process

In 2021, the urbanisation rate in China has reached 65.7%, growing at a CAGR of 2.7% from 2016 to 2021. According to the National Population Development Plan Notice (2016-2030) (國務 院關於印發國家人口發展規劃(2016-2030年)) published in 2016, China's urbanisation rate is expected to reach 75.8% in 2026. With the accelerated urbanisation process in China, a lot of new demands have been brought to the construction industry, particularly for civil building. In the report to the 20th National Congress of the Communist Party, it proposes to renovate more than 42 million sets of shantytown housing, renovate more than 24 million rural houses, and significantly improve the housing condition of urban and rural residents. In the future, the government will keep focusing on the renovation project of shantytown, city village and dilatated buildings, and the fixed asset investment from the government on transportation infrastructure and municipal works will sustain a stable growth. As such, the construction industry in China and Hunan Province still has enormous potential for growth in the future.

## Supportive Government Policies

The Belt and Road Initiative refers to a cooperative development initiative between China and other countries. The Belt and Road Initiative horizontally runs across eastern, central and western China, and vertically connects major coastal port cities in China, and continues to extend to central Asia and Association of Southeast Asian Nations (ASEAN) countries. In the Thirteenth Five-Year Plan of Modern Comprehensive Transportation System Development (「十三五」現代綜合交通運輸體系發展規劃) issued by the State Council in February 2017, it was proposed to actively promote the construction of railway, highway, water transportation, and pipeline connection projects between China and neighbouring countries as well as regions to build

# **INDUSTRY OVERVIEW**

"The Belt and Road" connection channel. The initiative addressed the importance of transportation connectivity between countries, which will stimulate the domestic and overseas fixed asset investment. Due to the fact that the majority of the Belt and Road countries are middle-income countries with continuous construction demand, the market potential for construction industry is still enormous. Besides, the establishment of the State Council issued the Opinions on Promoting the Sustainable and Healthy Development of the Construction Industry (關於促進建築業持續健康 發展的意見), which encourages the rapid development of the prefabricated buildings in the next decades whose market penetration rate is expected to account for 30% of new buildings areas by 2025.

#### Innovation of Steel Structure in Construction Market

The increasing labour costs and the stringent environmental protection supervision policy have to some extent limited the development of the traditional construction industry. The innovation of steel structure in the construction industry with a higher material utilisation rate has to some extent helped with the reduction of environmental impact of construction projects. Besides, the less labour-intensive character compared with traditional construction model has been considered as an alternative solution for the increasing labour cost. The steel structure construction project used to be primarily applied in the construction of municipal buildings and large-scale factories. However, with the establishment of a series of supportive government policies, it is expected that the penetration rate of the steel structure in the civil building construction subsector will witness rapid growth in the future.

#### **Major Challenges**

The principal challenges to the development of China's construction industry include:

#### Increasing Operational Cost

The civil building construction market in China is a labour-intensive industry. Along with the ageing population in China, the labour cost is rising gradually. In addition, most of the current employees are migrant workers born from 1960 to 1970. The poor working environment could not appeal to the post-80s and 90s new generation of migrant workers, which makes it difficult to recruit workers, thus raising labour costs in the civil building construction market. It is customary in the PRC construction industry that except for the certified technical and management staff, such as constructors, construction companies do not employ their own construction labour force, but may instead enter into labour services contracts with qualified labour service subsidiary companies or third parties for labour force required in construction projects. In this regard, it is an industry norm for construction companies to procure a significant amount of such labour subcontracting services from newly established companies, which are generally able to procure the substantial amount of labour required by the enterprises. This industry norm is mainly due to the fact that these newly established companies usually provide more competitive offers than well-established labour subcontractors in order to expand their business and increase their market share at their early stage of development. Moreover, construction labour supply in Hunan and Hainan Province is sufficient and it is not difficult for labour subcontracting company to hire sufficient labour to perform for their engaged projects. In relation to construction project management, it is the industry norm for companies to retain deposits from the project manager or other responsible employees as responsibility deposit to guarantee the due performance of the project as reward or penalty.

## Increasing Investment in Technological Innovation

At present, the R&D investment in China's construction industry is insufficient compared with other developed countries. The main reason is that the required capital investment in advanced technology in the construction industry is very high and it demands a long-term investment period before generating profits. Long-term high investment cost leads to the situation that many construction enterprises are reluctant to invest in technological innovation.

The level of R&D expenses incurred by our Group was in line with those of its industry peers.

#### Unexpected Impact of the COVID-19

As a typical labour-intensive industry, construction industry has been affected by the epidemic of COVID-19 in the first quarter of 2020. In 2022, the short-term project delay, limited selection of construction materials and slow down of government approval caused by the epidemic have caused a great impact on the current construction industry. The short-term impact could cause: (i) delay in the restart of construction project after the Chinese New Year; (ii) disruptions of the construction period; (iii) shortage of construction labour resources; and (iv) increasing labour

# **INDUSTRY OVERVIEW**

costs due to various isolation measures implemented by the PRC government, such as extending the Chinese New Years holiday in 2020 and lock-down policies in certain cities in the PRC. The projections from 2022 to 2026 and growth rate are based on data and information used in the publications issued before the onset of the current COVID-19 pandemic and may or may not be attainable. From a long-term perspective, and assuming that the PRC Government continues to accelerate its urbanisation and government support policies and to maintain a stable demand for housing and building market, these measures would help to mitigate any potential adverse impact that the COVID-19 pandemics may cause to the construction industry. In reaching the above opinion, we have considered the following factors:

- The resumption of construction activities as evidenced by the increase in total investment value of fixed income in the PRC from approximately RMB259.4 billion in January 2020, to approximately RMB6,237.0 billion in May 2020; From January to September 2022, the overall infrastructure investment growth was 8.6%, of which irrigation, environment, and public facilities management investment growth rate was 12.8%.
- The demand for construction services has experienced a short term drop due to the COVID-19 pandemic, but as at mid-May 2020, the demand for construction services has basically resumed to the level before the outbreak of COVID-19; From January to June 2022, the total output value and newly signed contract value of the Construction Industry in China reached RMB12,898.0 billion and RMB14,973.3 billion respectively.
- As a construction project generally takes up to two years to complete, the short term drop in the demand for construction services and the temporary suspension of operation of construction service providers due to the COVID-19 would have no material impact on the market demand of construction services in the PRC in the long run;
- According to various national and regional notice published by the PRC Government, the PRC Government encouraged the gradual resumption of business in the PRC in an orderly manner; and accordingly, businesses in Hunan, Fujian, Guangdong and Hubei Provinces, being the regions where our Group has business operations, have gradually resumed operations since February 2020; and as for businesses in Hainan Province, enterprises are promoting the resumption of production to catch up with the construction process;
- Favourable long-term government policies such as National New Urbanisation Plan (2014-2020) (國家新型城鎮化規劃(2014-2020)) and the Belt and Road Initiative (一帶 一路倡議) serve as catalyst in the recovery of construction projects. Subsequent to the resumption of operation of industrial enterprises, constructors in China are expected to ramp up their utilisation for fulfilment of the delayed order, which may boost the growth of the overall construction market; and
- The urbanisation rate in China has witnessed a sustainable growth from 57.3% in 2016 to 65.7% in 2021. Driven by the favourable policies such as The State Council on Issuing the National Population Development Plan (2016-2030) (國務院關於於印發國家人口發展規劃(2016-2030年)), the urbanisation rate in China is expected to reach 75.8% in 2026. The rising urbanisation rate is expected to provide more market opportunities for the construction industry in the PRC despite the outbreak of COVID-19.

## **Market Trends**

The construction industry in China has developed significantly in recent years as a result of high economic growth and a strong real estate market. Innovative technologies, building techniques and practices, concepts and construction products are steadily being adopted by major construction companies in China. For example:

#### Development of the EPC Model

The EPC model refers to a model that the construction company undertakes the construction project during a whole construction process (including engineering, procurement, construction and commissioning) or its several phases. It is widely accepted that EPC model is capable to optimise the project efficiency through overall coordination and resource allocation of the project. The government has been promoting the development of the EPC model for several years. In 2016, the MOHURD issued the Opinions on Further Promoting the Development of EPC (關於進一步推進工程總承包發展的若干意見), which proposed that the development organisations should give priority to the EPC model when selecting the contracting model of the construction project. In

# **INDUSTRY OVERVIEW**

2017, the MOHURD also issued the National Standard Code for General Contracting Management of Construction Projects (建設項目工程總承包管理規範國家標準) which has standardised the EPC construction standard to accelerating the promotion process of EPC projects in PRC.

## **Development of Prefabricated Building**

In contrast with the traditional construction method, prefabricated building is a type of building consisting of factory-built components or units to be assembled on-site. It possesses multiple strengths compared with the traditional building and is becoming increasingly popular in the PRC construction industry given its efficiency, quality and environmental-friendly attribute. The extra materials of the prefabricated building can be recycled, which can help solving the pollution problem brought by the traditional building construction. In addition, the construction model of prefabricated buildings, assembly of factory-made components on-site, needs less manual labour and thereby reducing the labour cost. Hence, the government is actively promoting the development of prefabricated building. In February 2017, the State Council issued the Opinions on Promoting the Sustainable and Healthy Development of the Construction Industry (國務院辦公廳 關於促進建築業持續健康發展的意見), which proposed that prefabricated buildings are encouraged to develop, and it should account for 30% of new buildings by 2025.

#### **Entry Barriers**

#### Qualification Certificate of Contractors

General contractors are required to obtain qualifications approved by the MOHURD and local government authorities in order to perform construction works in China. The scope and scale of a construction project that a general contractor can undertake depends on the general contractor's construction qualification. In China, the construction industry is under strict regulation. The qualification management system specifies the limitation and boundaries of business that a construction enterprise under each qualification category at each grade can undertake. Construction enterprise are prohibited to undertake the project which beyond its qualification. The construction gualification is awarded based on factors including, but not limited to net assets, track record of construction works, machinery and equipment capacity, minimum number of technical and managerial employees.

#### **Reputation and Track Record**

Reputation and successful track records maintained by the construction companies are also important entry barriers for new market entrants. For property owners, the proven track record and reputation provide a convincing endorsement for construction quality and contractual capacity. With the in-depth promotion of the reform of the credit management system in the construction industry, the importance of the reputation and proven track record is expected to maintain an upward trend.

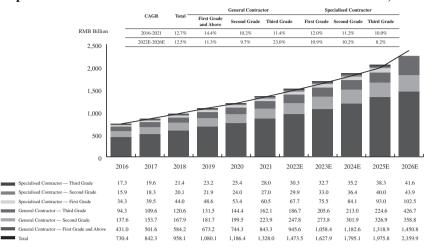
## **Professional Technical Staff**

According to the Measure for the Management of the Practice of National Certified Constructor (註冊建造師執業資格管理辦法), both first-grade (一級) and second-grade (二級) constructors are qualified to undertake the leader role for medium-scale project but only the first-grade constructors are qualified to undertake the leader role for large-scale projects. All constructors with constructor licence are prohibited to undertake the leader role as the project manager of more than one construction project at the same time. Considering the long construction period before the project completion acceptance, sufficient qualified constructors guarantees the maximum project capability of a constructors in China, which accounts for around 1.1% of the total employees in the construction industry. Considering the limited number of the qualified constructors, employing sufficient first-grade qualified constructors is essential for new entrants.

#### Capital Requirement

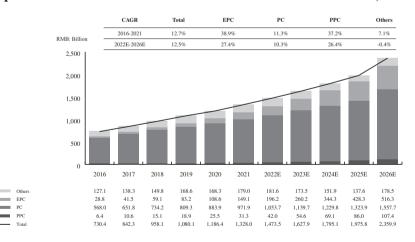
Capital, especially the net asset and sufficient cash flow, is an important barrier for new entrants as it is not only essential for meeting the qualification requirement but also important for the smooth operation of the project. For example, according to the "Qualification Standards for Construction Enterprises (《建築業企業資質等級標準》)", for the first-grade general contractors of construction (一級建築工程施工總承包企業), the minimum requirement for net asset should be above RMB100 million. Generally, the capital capability of a tenderer is an important selection criteria in public tendering.

## Overview of the Construction Industry in Hunan Province Total Output Value of Construction and its Growth Rate in Hunan, 2016-2026E



Source: National Bureau of Statistics of China and F&S estimate as at 30/09/2022

Similar to the situation in other parts of China, the output value of the first-grade general contractor in Hunan Province occupies the majority of the market share from 2016 to 2021. Considering the huge demand from urban-rural development and overseas expansion simulated by the Belt and Road Initiative, it is estimated that the output value of the construction industry in Hunan Province will be consistent with the overall market growth rate in China. The whole market size of construction industry in Hunan Province is projected to reach RMB2,359.9 billion in 2026, representing a CAGR of 12.5% from 2022 to 2026. As at 30 September 2022, there are 14 premium grade general contractors and 341 first-grade general contractors in Hunan Province. In consistent with the market growth in Hunan Province, the first-grade general contractor is expected to maintain its dominant market position and is expected to grow at a CAGR of 10.9% from 2022 to 2026.



Total Output Value of Construction and its Growth Rate in Hunan, 2016-2026E

Source: National Bureau of Statistics of China and F&S estimate as at 30/09/2022

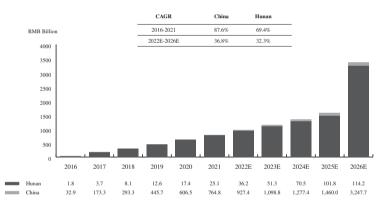
Hunan Province's construction market has witnessed a steady increase from 2016 to 2021 with its total output value increasing from RMB730.4 billion in 2016 to RMB1,328.0 billion in 2021, representing a CAGR of 12.7%. Among all of the subsectors, civil building construction holds the dominant market position, attributing to 69.1% and 70.1%, respectively of the total output value of the construction industry in 2016 and 2021. The outperformance of the growth rate of civil buildings in Hunan Province is mainly due to the rapid development of the prefabricated

# **INDUSTRY OVERVIEW**

buildings which is mainly driven by supportive government policies such as the Planning of the Distribution of Residential Industrial Production Bases in Hunan Province (湖南省住宅產業生產基 地布點規劃 (2015-2020). As for outperform of Industrial Construction market, with the gradual completion of the new market, industrial buildings will enter the stock market, thus industrial building maintenance is a big market opportunity in the future.

In the construction market of Hunan Province, the majority of the construction projects are accomplished under the PC model, which accounted for around 77.8% in 2016. Compared with the EPC model, the property owner separates the design services from procurement and construction services under the PC model. For large scale construction projects whose property owner has higher requirement on the project quality, the EPC model is more preferable than the PC model as the potential risk could be transferred to the general contractors. This is because the EPC model could minimise the risk taken by the property owner, improve the project coordination efficiency and reduce the project construction period. For the general contractors, more coordination and management responsibility indicate higher project quotation for EPC projects. Besides, under the premise of the safety and quality of the project, the EPC model allows the general contractor to accelerate the project schedule and reduce construction costs through optimised project management abilities. As such, the EPC projects generally retain higher gross profit than PC projects. It is common in the construction industry that the engineering units and construction units with corresponding qualification jointly bid and cooperate for EPC, according to the Administrative Measures for the EPC activities of Building Construction and Municipal Works Construction Projects ( $\overline{FFE}$   $\overline{E}$   $\overline{R}$   $\overline{T}$   $\overline{R}$   $\overline{R}$  from 2022 to 2026 because of the establishment of a series of the supportive government policies.





Source: F&S estimate as at 30/09/2022

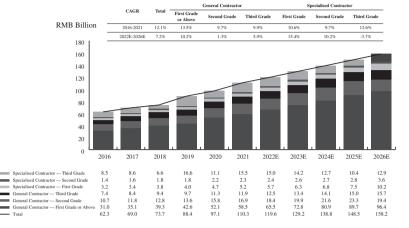
*Note:* The market size of prefabricated steel building construction market is determined by prefabricated ratio, new floor area of prefabricated building and unit prefabricated steel building construction price.

With the introduction of a series of supportive policies and government subsidies in recent years, the output value of prefabricated steel building construction in China has increased from RMB32.9 billion to RMB764.8 billion from 2016 to 2021, representing a CAGR of approximately 87.6%. In the future, considering the ongoing government supportive policies and the increasing maturity of the market in the next five years, the market size of prefabricated steel buildings in China is projected to reach RMB3,247.7 billion in 2026. Hunan Province, as one of the seven pilot districts for prefabricated steel building development in 2019, plans to cultivate more than 5 large-scale construction general contractors for prefabricated steel building and complete more than 10 demonstration prefabricated steel building projects from 2019 to 2021 according to the Prefabricated Promotion of Steel Building in Hunan Province (湖南省推進鋼結構裝配式住宅建設試點方案) issued by Hunan Province Department of Housing and Urban-Rural Development and approved by MOHURD. As such, it is estimated that the

# **INDUSTRY OVERVIEW**

prefabricated steel building market in Hunan Province is projected to reach RMB114.2 billion in 2026, representing a CAGR of 32.3% which is much higher than the average growing speed of China due to the strong policy support.

## Overview of the Construction in Zhuzhou Total Output Value of Construction and its Growth Rate in Zhuzhou, 2016-2026E

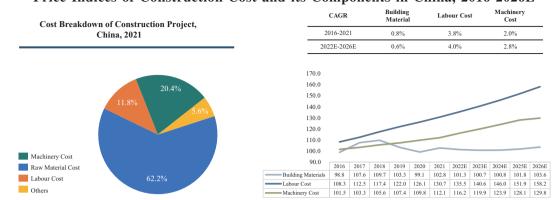


#### Source: F&S estimate as at 30/09/2022

As encouraged by the expansion and development of central city areas, and the improvement of old city areas proposed in the Outline of the Thirteenth Five-Year Plan for National Economic and Social Development of Zhuzhou (株洲市國民經濟和社會發展第十三個五年規劃綱要), the construction output value in Zhuzhou witnessed rapid growth from RMB62.3 billion in 2016 to RMB 110.3 billion in 2021 with a CAGR of 12.1%. General contractors of first-grade and above hold the dominant market position in Zhuzhou, which witness the most rapid growth speed at a CAGR of 13.5% from RMB31.0 billion to RMB58.5 billion between 2016 and 2021.

According to the Action Plan of Zhuzhou for the Integrated Development of Changsha-Zhuzhou-Xiangtan City Cluster (長株潭城市群一體化發展株洲市行動方案) proposed in 2019, the government of Zhuzhou would vigorously promote the civil building and construction of infrastructure to facilitate integrated transportation the development of the Changsha-Zhuzhou-Xiangtan City Cluster. Benefiting from this plan, the construction output value in Zhuzhou is expected to grow from RMB119.6 billion to RMB158.2 billion at a CAGR of 7.2% from 2022 to 2026. Also, along with the continuous enhancement of the construction capability of construction enterprises, the construction output value of first-grade general contractors or above is estimated to show an upward trend, rising from RMB65.5 billion to RMB96.4 billion at a CAGR of 10.2% from 2022 to 2026.

In Zhuzhou, there are only 4 construction companies with first-grade general contractor qualifications among the total number of 251 as of 30 September 2022. Among those qualified construction companies, Zhongtian Construction, the principal operating subsidiary of our Group, is the only company that is accredited as High and New Technology Enterprises (高新技術企業).



## Price Trend of Project Price and Operation Cost Price Indices of Construction Cost and its Components in China, 2016-2026E

Source: National Bureau of Statistics of China and F&S estimate as at 30/09/2022

*Note:* The base year in the index is 2014 when index equal to 100. The price indices of construction project and its related cost (raw materials, labour cost and machinery cost) reflects the price trend of construction project investment and its cost in the fixed asset investment. Raw materials in the construction project includes steel, concrete, wood, chemicals, electricity and other direct materials.

For a construction project, the majority of operation cost is attributable to the raw materials such as steel, concrete, wood, chemicals, electricity, and other direct materials which accounted for 62.2% of the total project cost in 2021, followed by the machinery cost which accounts for 20.4% of the total construction cost. The machinery cost could be even higher for the transportation infrastructure construction projects and municipal works construction projects because of the increasing demand for equipment. With the increasing production efficiency, the growth speed of the price index for building materials is expected to experience a slight decrease from 2022 to 2026 at a CAGR of 0.6%. According to the National Bureau of Statistics of China, the CAGR of the total number of employees in the construction industry is 3.8% from 2016 to 2021, which is much slower than the CAGR of 8.7% of the construction industry in terms of the output value. The inconsistency of the rapidly growing construction demand with the labor supply market drives up the labor cost. The average wages of the workers in the construction industry in the urban area is approximately RMB51,256 per year in 2021 and is expected to increase in line with the increase of the nominal GDP per capita from 2022 to 2026 assuming that the labor demand and supply situation remains stable. Due to the technical upgrade of construction equipment, the price of machinery cost is also expected to increase during the same period.

The fixed asset investment price index indicates the average price changes of the fixed asset investment. Steel and concrete are the two major raw materials used in the construction industry. According to the National Bureau of Statistics of China, the price of the steel and concrete has witnessed an increase at a CAGR of 7.6% and 6.2%, respectively, from 2016 to 2020 despite a sudden drop in 2016 due to the implementation of a "decapacity" policy by the PRC government. "Decapacity" Policy refers to the Opinions of the State Council on Resolving Excessive Production Capacity in the Iron and Steel Industry (《國務院關於鋼鐵行業化解過剩產能實現脱困發展的意 見) by which the PRC Government imposes stricter environmental law enforcement measures, for example, comprehensively investigating the conducts of the steel enterprises in relation to environmental protection, penalising steel enterprises that do not meet environmental protection standards in accordance with the law, and further improving the online system for monitoring major pollutants emitted by all steel enterprises. The PRC Government also strictly enforces safety production supervision and law enforcement, comprehensively investigates the safety production situation of the steel industry, promptly publishes the "blacklist" to announce poor production safety records of steel enterprises and investigates and penalises steel enterprises that do not meet the safe production requirements in accordance with the law. As a result, those underperformers that cannot meet the environmental and safety requirements will be punished, such as monetary punishment and suspension of operation, which lead to their withdrawal from the market so as to alleviate the problem of overcapacity of the iron and steel industry in China. There is no evidence that the market supply of raw materials has experienced the shortage situation in the past 5 years. In the future, under the assumption of the stable growth construction demand, it is expected that the supply of those raw materials will be sufficient in the market and the price of steel and concrete will experience a stable increase in consistent with the inflation rate.

# COMPETITIVE LANDSCAPE OF CONSTRUCTION INDUSTRY IN HUNAN PROVINCE AND ZHUZHOU

Overall Ranking	Company	City	Main Business	Qualification Grade	Revenue (Million)	Market Share
1	Company A	Changsha	Civil Building	Premium	9,570.4	1.1%
2	Company B	Changsha	Civil Building	Premium	5,790.5	0.7%
3	Company C	Changsha	Civil Building	First-Grade	3,612.9	0.4%
4	Company D	Changsha	Civil Building	First-Grade	3,553.0	0.4%
5	Company E	Changsha	Civil Building	Premium	2,429.2	0.3%
6	Company G	Changsha	Municipal Works	First-Grade	2,425.4	0.3%
7	Company F	Changsha	Civil Building	First-Grade	2,228.0	0.3%
8	Company H	Changsha	Civil Building	Premium	2,204.1	0.3%
9	The Group	Zhuzhou	Civil Building	Frist-Grade	1,823.4	0.2%
10	Company I	Hengyang	Civil Building	First-Grade	1,499.8	0.2%
11	Company N	Changsha	Civil Building	First-Grade	1,335.1	0.2%
12	Company M	Chenzhou	Civil Building	First-Grade	1,328.1	0.2%
13	Company J	Hengyang	Civil Building	First-Grade	1,225.9	0.1%
14	Company K	Changde	Civil Building	First-Grade	1,203.4	0.1%
15	Company L	Loudi	Civil Building	First-Grade	1,164.6	0.1%
	op 15 Non-state Owned Construction Companies Others n-state Owned Construction Revenue in Hunan Pr	wince		40,937.0 830,559.5 871,496.4		4.7% 95.3% 100%

Hunan Province Top 15 Non-state Owned Construction Enterprises in terms of Construction Revenue, 2021

*Source:* MOHURD and F&S estimate as at 30/09/2022

According to the National Bureau of Statistics of China, in 2021, there were around 129,000 construction enterprises in China. The top 15 players in the construction industry in Hunan Province only accounted for approximately 4.7% of the total output value of the construction industry in 2021, which implies that the construction industry in China is fragmented. In 2021, our Group ranked ninth in terms of the construction revenue among non-state-owned construction enterprises in Hunan Province, which reached RMB1,823.4 million, placing it ninth among non-state construction businesses in Hunan Province. None of our Group's competitors in the top 15 in Hunan Province is a listed company and all of these companies are principally engaged in civil building construction except for Company G. Our Group ranked fifth among non-state-owned construction enterprises with a first-grade general contracting qualification in Hunan Province whose main business is civil building construction.

#### Zhuzhou Top 5 Non-state Owned Construction Enterprise in terms of Construction Revenue, 2021

	Rank	Company	Main Business	Qualification Grades	Revenue (RMB Million)	Market Share
ſ	1	The Group	Civil Building	First	1,823.4	1.6%
	2	Company O	Civil Building	First	738.4	0.7%
	3	Company P	Civil Building	First	705.1	0.6%
	4	Company Q	Civil Building	Second	657.1	0.6%
	5	Company R	Civil Building	Second	632.3	0.6%
		Top 5			4,556.3	4.1%
		Others			106,314.9	95.9%
		Total Construction Revenue			110,871.2	100%

Source: Zhuzhou Public Resource Trading Centre and F&S estimate as at 30/09/2022

\*Note: Company O, Company P and our Group are general contractors with first-grade qualification and Company Q and Company R are general contractors with second-grade qualification. The main business of Company P also includes real estate development in addition to provision of construction service. None of the above companies is a listed company.

In 2021, our Group ranked the first in terms of total construction revenue among non-state owned construction enterprises in Zhuzhou, which reached RMB1,823.4 million.

# **INDUSTRY OVERVIEW**

## COMPETITIVE LANDSCAPE OF PREFABRICATED BUILDING MARKET IN CHINA

Prefabricated building is a type of building consisting of factory-built components or units to be assembled on-site and can be divided into three major categories including prefabricated concrete building, prefabricated steel structure building and prefabricated timber building based on the types of the main structural component of the building.

#### Top Five Prefabricated Steel Construction Enterprises in China in terms of Prefabricated Building Revenue, 2021

J	Rank	Company	Main Business	Prefabricated Building Revenue (Million)	Market Share
	1	Company S	Prefabricated Steel	413.6	0.05%
	2	Company T	Prefabricated Steel	298.2	0.04%
	3	Hangxiao Steel Structure	Prefabricated Steel	237.0	0.03%
	4	Company U	Prefabricated Steel	187.0	0.02%
	5	Company V	Prefabricated Steel	167.0	0.02%
		Top 5 Prefabricated Steel Construction Participants		1,135.8	0.1%
		Others		763,686.9	99.9%
		Total Revenue from Prefabricated Steel Construction Participants in Ch	nina	764,822.6	100.00%

*Source:* F&S estimate as at 30/09/2022

In 2021, Company S ranked first in the prefabricated steel construction market in China in terms of total revenue derived from the provision of prefabricated steel construction services, which reached approximately RMB413.6 million. The top five players in the prefabricated steel construction market only accounted for 0.1% of the total revenue of the prefabricated building market in 2021, which implies that the market is very fragmented.