

## *Original Paper*

# Infrastructure REITs Empower “New Infrastructure” during the COVID-19 Pandemic: A Chinese Case Study

Zhang Wenwen<sup>1</sup>

<sup>1</sup> Fudan University, School of economics, China

Received: October 6, 2022

Accepted: October 17, 2022

Online Published: October 20, 2022

doi:10.22158/sssr.v3n4p42

URL: <http://dx.doi.org/10.22158/sssr.v3n4p42>

### **Abstract**

*In 2020, the COVID-19 pandemic accelerated the development of new infrastructure in China. Thus, the term “new infrastructure” appeared for the first time and frequently in official documents at the national level, having become a kind of prescription for China’s move away from policies focused on controlling the disease towards those that promote the resumption of economic growth. The financing of this new infrastructure depends on innovative financial instruments, namely real estate investment trusts (REITs). The focus in this article is on the ways in which REITs make new infrastructure possible using as a case study the country’s first domestic REIT designed for the purpose, the China United Fund-Zheshang Asset Management, Shanghai-Hangzhou, Huizhou- Hangzhou Expressway Asset Support Special Plan, which was successfully issued on the Shanghai Stock Exchange on September 24, 2019. The analysis presented here indicates that infrastructure REITs have laid much of the foundation for economic growth in China and provides a basis for some suggestions for making the most of this financial instrument.*

### **Keywords**

*“New Infrastructure”, Infrastructure REITs, Case Study*

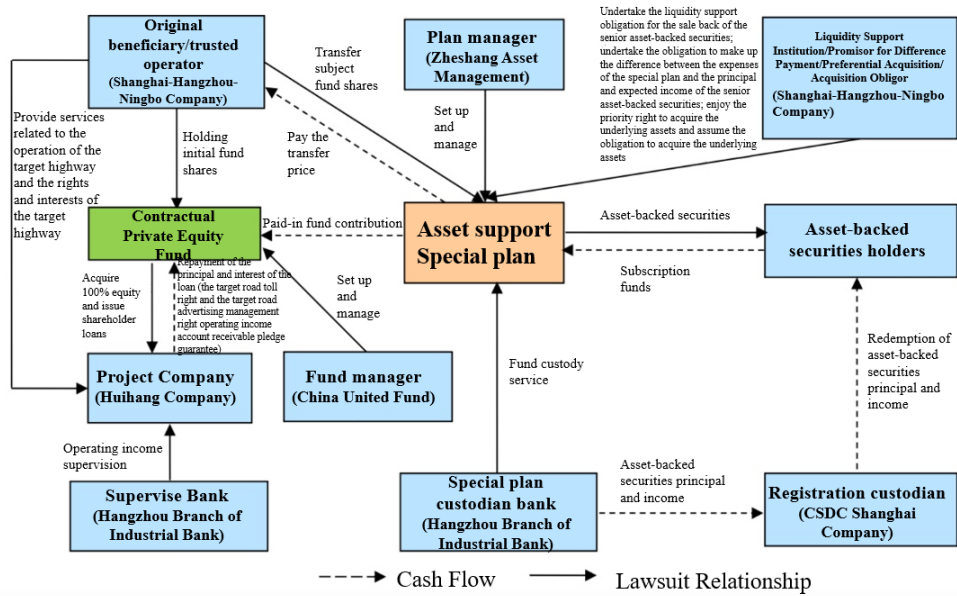
### **1. Introduction**

Infrastructure REITs have been a frequent topic of discussion since 2019, being regarded particularly favourably when exit channels such as PPP have encountered bottlenecks. Also, the development experience of infrastructure REITs in countries such as the United States and India has inspired confidence in their development in China. The country’s first domestic infrastructure REIT product, the China United Fund-Zheshang Asset Management-Hangzhou-Anhui-Huihang Express Asset Support Special Plan (hereafter simply “Special Plan”) was successfully issued on the Shanghai Stock Exchange on September 24, 2019. The product scale was 2.013 billion yuan. China Chengxin

Securities Ratings assigned an AAA rating to the priority asset-backed securities; the issuance rate was 3.7%, having reached a new low for similar products that also represents the capital market's full valuation of the Hangzhou-Anhui company and recognition of the quality of the underlying assets.

Back to December 2018, China's Central Economic Work Conference announced an ambitious proposal involving investment, technological transformation and modernization of equipment in the manufacturing industry, acceleration of the pace of 5G commercialization, and construction of new types of infrastructure, such as artificial intelligence, industrial Internet. The investment in transportation, logistics, and municipal infrastructure was intended to compensate for the shortcomings in the construction of rural infrastructure and public service facilities and provide for the expansion of capabilities to handle natural disasters (Note 1). Consequently, "new infrastructure construction", as a new term, began to appear in documents issued by the central government and was referred to simply as "new infrastructure". Compared to previous infrastructure construction, the term "new infrastructure" specifically refers to infrastructure that is technology-driven, industrial upgrading, under the cooperation between the government and the market, under the combination of virtuality and reality, as well as with demanding threshold of entrance and high value added. By 2019, the new infrastructure not only frequently appeared in the official announcements, but also was fully reflected in the practical level. After the outbreak of COVID-19 pandemic, "new infrastructure" has become a hot topic. On the one hand, the central government attaches great importance to "new infrastructure" in order to stabilize and further empower the domestic demand and labor market. Thus, on March 4, 2020, the Standing Committee of the Political Bureau of the Central Committee of the Communist Party of China (CPC) declared that it was necessary to increase the availability of public health services and emergency supplies and to accelerate the construction of such new infrastructure as 5G networks and data centres. On the other hand, local authorities have been planning to launch a series of new infrastructure projects. Recently, 13 provinces and municipalities, including Beijing, Hebei, Shanxi, Shanghai, Heilongjiang, Jiangsu, and Fujian, issued a list of key project investment plans for 2020, with the combined planned investment in eight of these provinces, including for new infrastructure, to total 33.83 trillion yuan (Note 2).

Infrastructure construction has contributed greatly to the process of China's urbanization and has achieved considerable development. The domestic investment and funding structure has resulted in the fact that the financing of infrastructure involves mainly land and debt financing. Local governments and urban investment enterprises, while building and accumulating considerable infrastructure assets, also bear a heavy debt burden, which leads to the implicit debt pressure of local governments. A new wave of public fundraising using these instruments was set in motion on April 30, 2020, when the China Securities Regulatory Commission and the National Development and Reform Commission jointly issued the Notice on Promoting the Relevant Work of Real Estate Investment Trust Funds (REITs) in the Infrastructure Sector detailing the requirements for a pilot infrastructure project (Note 3). Figure 1 shows the issuing scales and number of REITs by industry in China.



**Figure 1 Structure of the Special Plan**

The research questions of the case study is first, how the newly issued REITs are applied in the context of China’s state-owned enterprises, and second, how the newly issued REITs are different from or in common with the prevailing REITs in other countries. In addressing the first question, it’s important to establish systematically the connotations and industrial chain of the “new infrastructure”; further, there is need for precision regarding the definition, scope, and deployment of infrastructure REITs in the context of China’s state-owned enterprises. For the second question, the classification method based on legal carrier, that divides REITs into corporate type and contractual type, is mainly discussed to clarify the nature of the differences. The case study presented here concerns the first infrastructure REITs in China, those launched in 2019. The analysis of this case, including the document announcing the publicly funded infrastructure REITs, takes into account the role of these first REITs as a foundation for the new infrastructure.

**2. Literature Review**

(1) Relevant research on the international REIT market

i. Research on the financial model

The financing model includes both direct and indirect financing. The research on direct financing has shown that the bond issuance announcements for REITs, especially those involving short-term debt, have had the desired effect (Howe & Shilling, 1990). Thus, Tang, et al. (2016) analysed normal and tight credit market conditions in Japan and found that debt announcements had a positive impact on earnings. Likewise, in studies of the indirect financing of REITs, strengthening connections with banks made it easier for REIT companies to obtain loans during funding difficulties.

## ii. Research on earnings

Regarding the benefits of REITs, scholars have tended to focus on income performance, influencing factors, and income distribution. Research comparing the returns of REITs and other securities has yielded inconsistent results. Liu, Hartzell, and Hoesli (1997), for example, concluded that the returns of REITs correlated strongly with the volatility of stock indexes. Basse, Friedrich, and Bea (2009), on the other hand, focusing on the 2008 financial crisis, concluded that the income relationship among financial assets was not stable.

Turning now to influencing factors, at the macro level, currency shocks have a negative impact on the returns of REITs during a recession or worldwide financial crisis (Anderson, Boney, & Guirguis, 2012). On the micro level, the earnings and long-term performance of REITs on the date of their initial public offering are affected by structural changes in REITs and, for a company, factors such as financial status, capital fluctuations, and accounting measurement impact the rate of return of REITs (Chan, Chen, & Wang, 2013).

The dividends from REITs have attracted the interest of many scholars. Thus, Bradley et al. (1998) found that the proportion of REITs in the distribution of profits correlated negatively with the fluctuations in their returns. On the other hand, Devos, Spieler, and Tsang (2014) found that the distribution of profits by REITs was related to their yield to maturity and scale as well as the historical performance and future growth of the company.

### (2) Relevant research on domestic REITs

Chinese scholars only recently began studying REITs, mainly in the form of basic research into definitions, meanings, and models (Ren & Xia, 2015). In the earlier literature, a study by Li (2005) compared the development of REITs in China and the United States and reached the conclusion that, in both countries, the trusts have served as an important tool for improving the financial system and were deserving of greater attention. At the same time, the different institutional backgrounds and economic foundations of the two countries resulted in the development and maturity of REITs along different paths in terms of product design and regulatory requirements. Wang and Hu (2005) analysed the organization, product characteristics, and policies of the factory REIT market in Hong Kong and concluded that it had lessons for the mainland Chinese market. From another perspective, researching the management of risk associated with REITs, Xu et al. (2006) emphasized the need for trust companies to establish sound corporate governance structures and comprehensive risk-management mechanisms under the guidance of what was then China Banking and Insurance Regulatory Commission and relevant government departments. From a slightly different perspective, Li (2009) compared the historical development and advantages and disadvantages of the main financing models of REITs across developed countries and regions and called for an analysis of the choice between public and private financing of Chinese REITs. Responding to this call, Chen and Liu (2013) analysed the impact of China's taxation policies on the development of REITs and concluded that double taxation was reducing the actual benefits of REITs and thus their attractiveness as financial products and further development.

### 3. The Anhui-Hangzhou Expressway (Zhejiang Section)

China's infrastructure REIT products are in the exploratory stage. Different from commercial property REITs with respect to ownership, liquidity, valuation, and income from the underlying infrastructure assets, infrastructure REITs have a relatively simple structure, taking the form of "Public Offering of Fund + ABS", that is, to issue fund shares in the public market, and buy asset-backed securities to purchase the real estate. Drawing on international experience, China's issuance of infrastructure REIT products can achieve the effects of revitalizing existing assets, broadening financing channels, reducing local government leverage, and promoting economic upgrading and transformation. This is the direction of policy encouragement. At the same time, infrastructure REITs meet the investment demands of long-term funds and appeal to a wide range of investment groups and a broad market generally.

#### (1) Case introduction

The Special Plan named the Zhejiang Hangzhou-Anhui Expressway Co., Ltd. (hereafter "Hangzhou-Anhui Company") as the original stakeholder and the Hui-Hangzhou Expressway (Zhejiang Section) under the Hangzhou-Anhui Company as the underlying asset. China United Qianyuan Real Estate Fund Management Co., Ltd. ("Zhonglian Fund") and Zhejiang Zheshang Securities Asset Management Co., Ltd. ("Zheshang Asset Management") joined forces to provide the funding. The cornerstone investor was Industrial Bank Co., Ltd. Hangzhou Branch.

#### (2) Case analysis

##### 1. Underlying assets and stable cash flow

The international experience and the characteristics of domestic infrastructure assets suggest that the types of basic assets suitable for the current Chinese market are (1) municipal roads, highways, bridges, and other transportation-related works; (2) public utilities, such as water treatment, environmental remediation, communications, and water and gas supply; and (3) commercial hubs such as ports, docks, and airports. The cash flow associated with these infrastructure assets during their operation is very stable, so fluctuations in the economic environment have relatively little impact on this income. The asset cash flow is naturally defensive, so infrastructure REIT products are especially favoured by institutional investors with a focus on long-term, stable investment returns. Because the rate of return on highway assets is relatively high and the cash flow forecast is quite stable, these are also the preferred type of assets for REITs.

The asset that entered the pool under the Special Plan was the Zhejiang Section of the Huihang Expressway, managed by the Hangzhou-Anhui Company. The source of revenue consists of tolls and leasing business. In 2020, the tolls are about 451.88 million yuan, accounting for 98.94% of the total revenue, the gross profit rate is about 9.18% in 2020, 26.7% in 2019, and 36.96% in 2018; the leasing business generated 4.71 million yuan. The toll charge period ends in 2029 to 2031 separately for different subsections. Up to now, the Zhejiang Section of the Expressway has 15 toll stations in total. The Huihang Expressway, with a total length of 82 kilometres, officially opened to traffic in 2004. The

entire line was constructed in accordance with expressway standards, with four fully enclosed lanes. As a section of the G56 Hangrui Expressway of the national expressway network, this expressway is an important part of the “Hengba” Hangzhou-Wuhan Highway in the Anhui Province expressway network. The sustainability of the revenue comes both from the tourism resources locating closely along the Expressway, as well as an important transportation center, connecting the provinces of Zhejiang, Anhui and Jiangxi. The rapid development of the social economy in the affected area, especially in the tourism industry, and the rapid increase in domestic car ownership point to growth in target road traffic and, therefore, toll revenue.

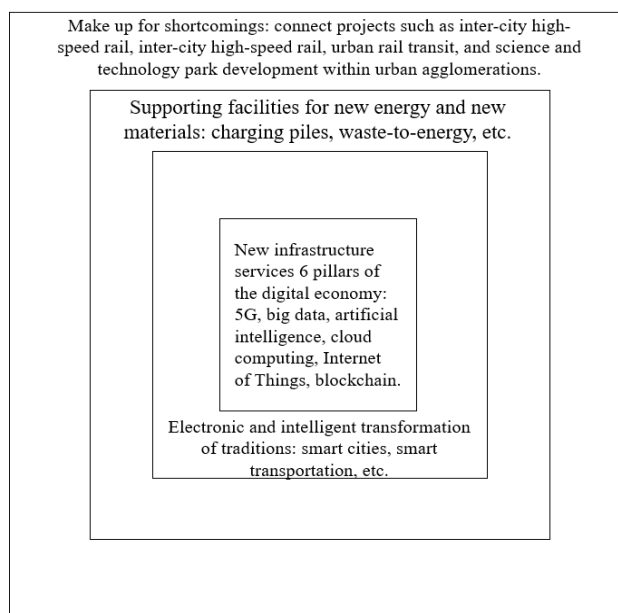
In the duration period of the special plan, the coverage multiple of the net cash flow from the project company’s operations to the fund, the special plan’s taxes and fees, and the principal and interest of the priority asset-backed securities is 1.21 times or more. The redemption of the principal and interest of the current-term asset-backed securities provided better protection. This asset had a relatively high rate of return and a relatively stable cash flow forecast, making it ideal for REITs. Many domestic public infrastructure projects have involved the establishment of fairly complete user-payment mechanisms that provide a stable cash flow, which can help promote the associated REITs. Some may question why REITs is more ideal for the asset than a toll revenue bond. First, the Huihang Expressway has already been in a mature state of operation, and the asset itself bears the nature of market-recognized credit, so there is no need for the government to issue a toll bond. (A recent example of governmental toll bond is the construction of a subsection in Zhoushan of the Shenhai Expressway in 2017. Different from the Huihang Expressway, the construction of the subsection was new to launch.) Second, the scrutiny of the operation and mandatory dividend of REITs will effectively reduce information asymmetry of it as an investment. Third, with expectations of increasing return, REITs will provide more benefit than bonds for its investors, which will more efficiently promote the issuance and purchase.

## 2. Limited period

The Chinese government’s Administrative Measures for Infrastructure and Public Utilities Franchising stipulates that the term of infrastructure franchising depends on such factors as industry characteristics, product requirements, project cycle, and investment recovery period and establishes 30 years as the maximum period. Thus, the expressway toll rights are time-limited. As has been seen, the asset that entered the pool under the Special Plan was the Anhui Section of the Huihang Expressway under the management of the Hangzhou-Anhui Company. In accordance with the government’s administrative measures, the period of operation for the toll rights is 30 years, from October 1, 2004, to year between 2029 and 2031, for different subsections. Should toll collection cease and the site be removed, the operating section would be taken back without charge and placed under the management of the Department of Transportation of Anhui Province. The term of the single product is 15 years, the expiration date for which falls within the operating period. After the period expires, the infrastructure is to be handed over to the government without charge.

### 3. Transaction characteristics

We conclude the Figure 2 from Structure of the Special Plan State Report [20] (Note 4). Figure 2 shows the Structure of the Special Plan. Most toll roads in China are operated by state-owned enterprises. Therefore, the issuance of toll-road REIT products involving the transfer of the project company's equity constitutes a state-owned asset transaction of enterprises. According to the relevant provisions of the Measures for the Supervision and Administration of Enterprise State-owned Assets Transactions, the transfer of property rights shall in principle be carried out openly through the property rights market (See Figure 2). However, in this project, the controlling shareholder of the original equity holder, Zhejiang Transportation Investment Group Co., Ltd., has drawn attention to the facts that the project company's equity is being transferred to a private equity fund, that the project company is still within the scope of the Hangzhou-Anhui Company's consolidated statement, and that the latter company is responsible to purchase the underlying assets, such as the equity or the senior asset-backed securities, at the agreed price upon entering the disposal period of the special plan, which means that the project transaction is essentially a financing activity that includes the transfer of the underlying equity and additional repurchase. Thus, the non-disclosure agreement regarding transfer is applicable, and, though the transfer of equity in state-owned enterprises involved in similar projects necessitates entry transactions, it is still necessary to follow the opinions of the relevant state-owned assets supervision unit or department. Accordingly, there would be essentially no transactions of this type to support Chinese infrastructure, most of which is state-owned and subject to many restrictions on the transfer of franchise rights.



**Figure 1. The Connotations and Extension of “the New Infrastructure”**

#### 4. Credit-enhancement measures

The projected income of some infrastructure REITs can be so low as to invite concern that it is insufficient to cover financing costs. Moreover, local governments may have limited financial resources and tend to be reluctant to support product debt repayment. So, most infrastructure REITs have set up credit enhancement measures so as to make up the difference in financing. Under the Special Plan, in order to guarantee the redemption of the income and principal for holders of senior asset-backed securities during the period, Zhejiang Hangzhou-Anhui Expressway Co., Ltd. supports the provisions of the Special Plan Difference Payment Agreement, assuming the obligation to compensate for the corresponding difference between the expected return and principal for each period of the priority asset-backed securities. As the only expressway operating company in Zhejiang Province that is listed on the Hong Kong Stock Exchange, Hangzhou-Anhui Co., Ltd. has continuously increased the scale of its road-property operations, and its toll revenues have been growing annually. The firm's debt level is reasonable, and its solvency is quite strong. This difference-payment agreement backs up the promise, providing a strong guarantee of the expected return on the priority asset-backed securities under the Special Plan and the redemption of the principal.

#### 4. The Connotations of “New Infrastructure” in China

##### (1) Defining “new infrastructure”

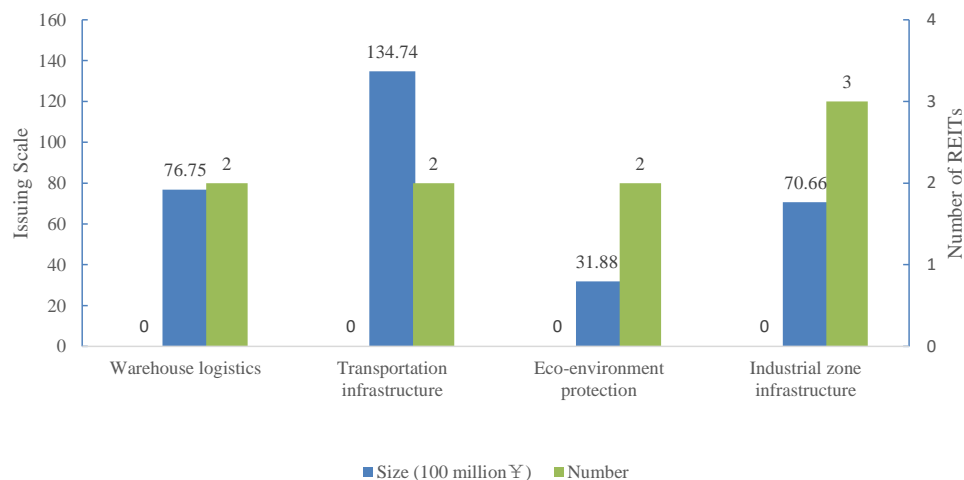
The scope of new infrastructure has not been clearly defined in relevant government documents, and the official media and financial industry in China have different understandings of the concept. According to an article in Xinhua News Agency's “Outlook” magazine titled “New Infrastructure Brings New Opportunities,” the term mainly refers to the combination of traditional civil infrastructure and technologies enabling smart functions, such as 5G, artificial intelligence, industrial Internet and Internet of things. (As stated in the scope of the Journal, Civil infrastructure systems support transportation; energy production and distribution; water resources management; waste management; civic facilities in urban and rural communities; communications; sustainable resources development; and environmental protection. These physical, social, ecological, economic, and technological systems are complex and interrelated. Increasingly, inter- and multidisciplinary expertise is needed not only to design and build these systems, but to manage, sustain, enhance, and transform them as well.) This infrastructure helps bring to traditional industries the tools of networking, digitization, and intelligence. In physical terms, it involves a fresh round of network construction involving optical fibre broadband, the narrow-band Internet of Things, etc. Data and information related services, such as big data centres, cloud computing centres, and information and network security, will also become the core of China's “new infrastructure”.

From Figure 3, in the definition used by official media outlets, “new infrastructure” refers to construction relating to technology, especially 5G, UHV, intercity high-speed rail, intercity rail transit, new energy vehicle charging stations, big data centres, artificial intelligence, the industrial Internet, and



so on. This definition thus covers many key industries that employ many Chinese citizens, such as communications, energy, transportation, and digital services. Generally speaking, the official media definition of “new infrastructure construction” is broader than that used by government authorities, so this definition is more commonly used.

From the perspective of industry, new infrastructure generally includes both broad-based and narrowly-defined initiatives (Ren, 2020, Note 5). The latter mainly include supporting upgrades of core areas of the technology industry, such as 5G base stations, industrial Internet, artificial intelligence, smart healthcare, network security, cloud computing, and so on. Broadly-defined initiatives tend to address shortcomings in overall systems with respect to transportation (e.g., rail), energy (e.g., nuclear power), environmental protection (e.g., recycling), and facilities such as hospitals, nursing homes, stadiums, and so on. New infrastructure, as both limitations on China’s current development and the country’s future, can effectively stimulate current development and provide momentum for long-term development (See Figure 3).



**Figure 3. The Issuing Scale and Number of REITs by Industry**

## (2) The industrial chain of new infrastructure

In the Table 1 (Note 6), the industrial chain of new infrastructure has been concluded as follows:

**Table 1. The Industrial Chain of New Infrastructure**

Industry	Description
5G	From the perspective of the industrial chain, the upstream involves mainly the supplier of components, which will benefit directly from the increase in the scale of industry investment, and the upward cycle will be more resilient. The middle of the industrial chain involves mainly the communication equipment industry, whose industry concentration and discourse power are gradually improving. It is the core part benefiting from the new infrastructure. The lower reaches of the industry chain include mainly operators, who are the core participants across the 5G industry chain and, therefore, have the greatest say in it. Accordingly, the operators' capital expenditures determine the market space in the upper and middle reaches of the industrial chain.
UHV	From the perspective of its industry chain, UHV includes (1) UHV DC transmission lines, for which the key pieces of equipment are converter valves, converter transformers, control devices, DC field equipment, and so on, and (2) UHV AC transmission lines, for which the key pieces of equipment are assemblies of electrical appliances, transformers, reactors, and so on. In terms of application, UHV is mainly part of ultra-long-distance and ultra-large-capacity power transmission projects, such as the Southwest Large Hydropower Base and the Northwest Large Coal Power Base.
Intercity high-speed railway and rail transit	The upstream of the industrial chain involves mainly design consulting and raw materials, the midstream mainly construction and equipment manufacturing, and the downstream operation and maintenance. The industry includes urban rail operations and passenger and freight transportation.
Charging pile	The upstream of the charging pile market involves equipment manufacturers and various products; the middle reaches involve operators of large charging stations; and downstream applications involve all kinds of electric vehicles.
Big data centre	For the big data Centre (IDC) industry chain, the upstream involves the construction of computer rooms, including land and buildings, electricity, networks, power equipment, IT equipment, refrigeration equipment, and so on; the midstream involves a stable and efficient IDC computer room and an information system that provides services; and downstream companies use the computer rooms, including cloud computing companies, large and medium-sized internet companies, financial companies, small and medium-sized internet companies, and other companies.
Artificial intelligence	Artificial intelligence relies on chip and module providers with a basic layer as the core technology. Deep learning, natural language interaction, pattern recognition, intelligent vision, human brain engineering, machine vision, and other underlying technologies have entered the accelerated maturity stage, providing strong technical support for artificial intelligence. The technology layer is the core of the data transmission, operation, and storage process, involving infrastructure operators; the downstream application layer is the core, focusing on service providers of service robots, medical robots, intelligent security, unmanned driving, and industrial eyes.

---

**Industrial Internet** The upstream involves smart hardware and the midstream an industrial internet platform. The edge layer (i.e., industrial big-data collection), IaaS layer (mainly involving data storage, cloud computing, and related equipment such as servers and storage), PaaS layer (providing various development and distribution application solutions, such as virtual servers and operating systems), and SaaS layer (mainly application solutions for scenarios such as industrial APP). The downstream involves industrial enterprises in application scenarios, including high energy-consuming equipment (e.g., ironmaking blast furnaces and industrial boilers), general power equipment (e.g., diesel engines, large and medium-sized motors, and large air compressors), new energy equipment (e.g., wind power, and photovoltaic equipment, high-value equipment (e.g., engineering machinery, CNC machine tools, and gas turbines), and instrumentation and other special equipment (e.g., smart water meters and smart gas meters).

---

## **5. How China's REITs are Different from and in Common with Existing REITs in Other Countries**

Some of the infrastructure REITs that invest in specific assets, such as Japan's infrastructure fund, Australia's LIF (listed infrastructure fund), are classified as a single category by national regulators, while some are not. No matter whether the infrastructural REITs are singled out or not, we find that generalized infrastructure REITs, including the so called "New Infrastructure" in China, follow the same regulations and policies as real estate REITs, and the differences mainly come from the assets themselves. Real estate REITs or infrastructure REITs can be divided into two categories according to the legal carrier: one is corporate type, such as the United States, Japan and Europe; One is contractual type, such as Australia, Singapore and Hong Kong: This is caused by the difference of legal starting point of REITs. REITs can also be divided into two types according to their background: REITs in the United States and Australia are spontaneously generated in the market, while REITs in other markets are promoted by the government. The first classification produces different management modes, product forms and tax policies, etc. The second classification corresponds to different policy objectives.

### **(1) Discussion based on legal carrier classification**

According to the legal carrier classification, China's infrastructural REITs belong to the contractual type. First, due to China's current situation, establishing contractual funds can avoid the regulations of China's current corporate law and the tax law. Without the support of relevant tax laws, income of corporate REITs will be drastically affected since profits can be divided only after taxation. Second, as China's market economy is far from perfect, the level of corporate governance is inferior to the level of corporate governance in developed countries. Managers often make adverse selection due to information asymmetry, that is, out of their own interests, they do not choose the way that can create more value for shareholders, thus damaging shareholders' rights and interests. Third, funds established in China, based on China's current laws, whether open or closed, are contractual, which provides rich operating experience for the development of REITs in China. In order to better protect the rights and

interests of investors, in the long run, we can expect the corporate type be selected and REITs funds in China can be listed and traded like REITs funds in the United States.

Here we want to make some additional comments on the tax and law issue in China's REITs. One of the tax problems China's infrastructure REITs are facing is that the tax burden of China's domestic infrastructure industry is relatively high. The establishment, operation and exit of infrastructure REITs involve multiple taxes, which is detrimental to inspire the huge potential of China's private sector investment. By comparing the related government documents in China with the current regulations in developed country markets, we can find that in the field of infrastructure REITs in China, the drawbacks mainly include the following aspects: first, China's tax authorities are short of tax practice activities and related experiences regarding asset management industry products. Lack in clear evidence of tax collection and management makes it impossible for the tax law to be operated in practice. Although supported by some local governments' tax reduction policies, infrastructure REITs in China is facing huge uncertainty generated from consultation and trial-and-error procedure. Second, tax neutrality is the basic feature of many infrastructural REITs. Tax preference is one of the fundamental characteristics of success in infrastructure REITs in some developed countries. However, tax preference policy for infrastructural REITs in China is incomplete. Third, for a long time, as China's trust law is imperfect, China's trust industry is mostly regulated by the low-level regulations and temporary measures promulgated by the People's Bank of China. At the same time, the promulgations of some policies and laws can only be seen as the amend after serious incidents in trust business.

## (2) Discussion based on policy goals

Most countries and regions launch REITs in order to achieve certain policy goals. In mature markets, policy objectives can be generally divided into two categories. One is aimed at developing financial markets. For example, The United Kingdom, Singapore and Hong Kong launched REITs under the goal of building financial centers, aiming to increase the abundance of market products and attract global issuers and investors. One is to promote the development of the real economy. American's real estate REITs appeared under the background of welfare society and economic stimulus, while infrastructure REITs came out due to the spontaneous demand of market. Japan launched REITs to support the real estate sector, and launched infrastructure REITs in line with the new energy industry policy. In Germany, the target was to boost the property market and revive assets to raise fiscal revenue.

In Hong Kong, Singapore, Japan and other emerging markets (from the perspective of REITs), such businesses are directly begun by the government. In Hong Kong, the listing of The Link Real Estate Investment Trust was promoted by the Hong Kong Housing Authority. In Singapore, Temasek Holdings, the largest shareholder of Capital and Group (publisher of Kamo Trust), is a sovereign investment company 100% owned by the Singapore government. In Japan, Japan's infrastructure REITs was launched in the context of promoting new energy policies. The introduction process of Asian REITs is generally highly administrative. Like most Asian countries, the birth of China's infrastructural REITs has distinct administrative objectives. When discussing the targets and future development of China's

infrastructural REITs, we should exceptionally focus on its local government and SOE (state owned enterprises), which will be illustrated in the following part.

Infrastructure investment serves as an important engine of China's economic growth. After years of construction, a large amount of capital has been accumulated in transportation, water conservancy, environmental protection, municipal administration and other fields, and high risks have been accumulated due to the heavy-asset operating mode. In the meantime, new projects are faced with large fund gap, affecting overall operating efficiency. After the pandemic and depression period, the country needs infrastructural construction again, and this time, it is necessary to change the high-debt pattern from the local government level. When discussing the debt problems of local governments in China, some viewpoints tend to focus only on the total amount of debt. What should be paid more attention to is the total interest of debt. For example, although the U.S. government debt ratio is high, the interest rate on its government debt is very low, which is well below the world average. One reason behind this is that the United States avoids the banks by securitizing debt through the bond market. China has a huge financial system, but its efficiency needs to be further optimized. Policy-based spreads, in particular, allow banks to protect profits during periods of drought, but raise costs for local governments. For comparison, China's interest rate on loans is around 6%, while the interest rate on U.S. government debt is less than 2%, meaning the U.S. government has three times as much debt capacity as China given other conditions constant. For projects with good credit and long cycle such as infrastructure construction, if financing is carried out through REITs, the financial cost borne by the lender can be significantly lower than the cost paid by the bank loan. This is an obvious reason why China's government want to speed up China's infrastructural REITs. Infrastructure REITs can not only significantly reduce the financial cost borne by the local governments, but also optimize allocation of resources and improve efficiency. Because REITs are priced through the market, the level of its interest rate is related to the quality of each project. This adjustment can also, to some extent, curb the impulse of some local governments to blindly go into debt to carry out performance projects for the political interests of local bureaucrats. After all, without enough economic benefit, REITs products cannot be accepted by the market.

As discussed above, China's government aims at promoting direct financing and reducing rigid payment in infrastructural industry, thus resolving financial risks. As a direct financing tool, whether REITs can be accepted by the market with the support of policies depends on whether REITs can match the supply and demand of funds in a simple, direct and effective way. China's infrastructure financing market has a long-term dislocation of sponsors: private sector enterprises have motivation but no projects, while local governments and state-owned enterprises have projects but no financing motivation. The logic behind this phenomenon is clear: local governments and SOEs lack motivation to securitize high-quality projects, not only because such financial tools are cumbersome and costly, but also because selling high-quality assets affects the profitability assessment of SOEs. If a SOE wants to take out a high-quality asset for financing, the enterprise will face the risk of falling revenue and

earnings after the asset is released from the balance sheet. As a result, it is hard for SOEs to decide to sell good assets, even if they can be invested in better projects, but it takes years for new projects to make profits. Second, high-quality projects also undertake the compensatory role. The real pain points for state-owned enterprises and local governments are projects that have no or poor cash flow, such as building roads and bridges in remote areas, building new parks that temporarily have no people, and building office buildings for innovation bases. Therefore, for a long time, the practical way for local governments and state-owned enterprises to develop infrastructure is to mix good and bad projects and increase the size and rating of the debt platform, thus reducing the overall financing cost by improving the credit condition of the main body. However, under this circumstance, the assets of SOEs cannot be effectively revitalized, the value of the properties cannot be effectively revealed, and the efficiency of asset use cannot be improved, not to mention the appreciation of state-owned assets. Promoting infrastructural REITs is in line with the reform in China's SOEs. First, to meet the need of issuance of infrastructural REITs, state-owned enterprises have to complete asset sorting, asset integration, asset repositioning, asset transformation and asset upgrading (if necessary) for their stock assets. Second, the financing obtained by using REITs can be used to repay the stock debts of state-owned enterprises, thus effectively reducing the ratio of assets to liabilities of state-owned enterprises, and realizing the purpose of deleveraging. Third, REITs can help SOEs to transform to light-asset type, as well as provide financial support for industrial layout to realize integration of upstream and downstream.

## 6. Policy Suggestions

On April 30, 2020, the China Securities Regulatory Commission and the National Development and Reform Commission jointly issued the Notice on Promoting the Pilot Work of Real Estate Investment Trust Funds (REITs) in the Infrastructure Sector, a document that detailed the requirements for the pilot projects of publicly offered infrastructure REITs. In addition to the policy directions provided by these latest policies, the argument here is that, given the need to develop infrastructure REITs, the focus should be on creating favourable conditions for them. The following three policy suggestions can facilitate efforts to create these conditions.

The first suggestion is to improve the legal framework relating to REITs. In the United States, Singapore, Hong Kong, and other jurisdictions in which REIT products have been launched, their investment scope, financing, and distribution ratio are governed by clear and detailed special regulations. Accordingly, the existing Securities Law should be revised taking into account lessons learned from the use of REITs in other countries and the actual situation on the ground in China, with REIT products being included as a new class of securities consistent with special regulations for the purpose. The comprehensive regulations need to cover the raising of capital, management and investment guidelines, information disclosure, and tax incentives for REIT products.

The second policy suggestion is to clarify the transfer of REITs. At present, the policies and procedures for the transfer of equity, assets, and operating rights of domestic infrastructure projects remain unclear,

a situation that is obviously not conducive to the orderly transfer and effective valuation of infrastructure assets. The National Development and Reform Commission, in its Guiding Opinions on the Development of Government and Social Capital Cooperation and Notice on Accelerating the Use of the PPP Model to Revitalize the Stock Assets of Infrastructure, mentioned relevant content but did not specify the operational process. These issues need to be further addressed at the policy level.

The third policy suggestion is for the implementation of a registration system for publicly offered infrastructure REITs. Compared with industrial listed companies in the field of market competition, infrastructure REITs have a high degree of standardization, and the cash flow of basic assets and dividend rate fluctuate very little, so they can play an important role in stabilizing the capital market. Therefore, the China Securities Regulatory Commission could facilitate the use of these REITs by establishing a section on the Shenzhen Stock Exchange dedicated to them in order to simplify the procedures for their establishment, issuance, and listing, including a streamlined registration system. In the domestic capital market, numerous listed companies already focus on electricity, highways, ports, airports, the water supply, and sewage treatment. Through a series of conversion and processing steps, these companies can be transformed into standardized, publicly traded rights and interests, that is, into financial products of the infrastructure-REIT type. The implementation of a registration system for infrastructure REITs on the Shenzhen Stock Exchange would greatly enhance the capacity of the capital market to serve the real economy.

#### Data Availability Statement

- Some or all data, models, or code that support the findings of this study are available from the corresponding author upon reasonable request.
- All data, models, and code generated or used during the study appear in the submitted article.

#### References

- Anderson, R. I., Boney, V., & Guirguis, H. (2012). The Impact of Switching Regimes and Monetary Shocks: An Empirical Analysis of REITs. *Social Science Electronic Publishing*, 34(2), 157-182. <https://doi.org/10.1080/10835547.2012.12091332>
- Bradley, M., Capozza, D. R., & Seguin, P. J. (1998). Dividend Policy and Cash-Flow Uncertainty. *Real Estate Economics*, 1998(4), 555-580. <https://doi.org/10.1111/1540-6229.00757>
- Chan, S. H., Chen, J., & Wang, K. (2013). Are REIT IPOs Unique? The Global Evidence. *The Journal of Real Estate Finance and Economics*, 2013(4), 719-759. <https://doi.org/10.1007/s11146-013-9428-x>
- Chen, J. Y., Liu, J. Y., Liu, S., et al. (2014). Keywords: Real Estate Trust Investment Fund. *Modern Business*, 2014(9), 81-83.
- Chen, Q., & Yang, S. G. (2009). The international experience of REITs development and China's path selection. *Financial Research*, 2009(09), 196-210.

- China United Fund-Zheshang Asset Management, Shanghai-Hangzhou, Huizhou- Hangzhou Expressway Asset Support Special Plan State Report, Shanghai Stock Exchange, 2019.
- Crocker, H, Liu, et al. (1997). International Evidence on Real Estate Securities as an Inflation Hedge. *Real Estate Economics*, 1997(2), 83-101.
- Devos, E., Spieler, A., & Tsang, D. (2014). Elective Stock Dividends and REITs: Evidence from the Financial Crisis. *Real Estate Economics*, 2014(1), 33-70. <https://doi.org/10.1111/reec.12007>
- Howe, J. S., & Shilling, J. D. (1990). REIT Advisor Performance. *Real Estate Economics*, 18(4), 479-500. <https://doi.org/10.1111/1540-6229.00533>
- Iii, W. G. H., & Wu, Z. (2010). Banking Relationships and REIT Capital Structure. *Real estate economics*, 38(2), 257-284. <https://doi.org/10.1111/j.1540-6229.2010.00267.x>
- Jones Lang LaSalle. (2017). China's Real Estate Finance: Tradition and Innovation. *Promoting Urban Housing*, 024(008), 88-91.
- Jones Lang LaSalle. (2017). Chinese Real Estate Finance: Tradition and Innovation Chinese Real Estate Finance: Tradition and Innovation. *Urban Housing*, 024(008), 88-91.
- Li, A. M. (2005). Comparison of Sino-US real estate investment trust products. *Academic Research*, 2005(3), 28-34.
- Li, Z. C. (2009). Discussion on the development model of REITs in China. *Economic Research Guide*, 2009(010), 49-50.
- Ren, Y., & Xia, J. (2015). Real Estate Investment Foundation. *Industrial Economic Review*, 2015(3), 72-77.
- Tang, C. K., Mori, M., Ong, S. E., et al. (2016). Debt Raising and Refinancing by Japanese REITs: Information Content in a Credit Crunch. *The Journal of Real Estate Finance and Economics*, 53(2), 141-161. <https://doi.org/10.1007/s11146-014-9459-y>
- Wang, X. J., & Hu, X. Z. (2005). Hong Kong's real estate financing methods and mergers. *Shanghai Economic Research*, 2005(10), 108-113.
- Xu, X. C, Liu, B. J., & Xu, Y. J. (2006). Trust company governance structure and risk control. *Financial Theory and Practice*, 2006(4), 67-69.
- Zhou, Y. (2007). Analysis of the concept of REITs and the international operating system. *Contemporary Economy*, 2007(015), 150-151.
- Zou, J., & Wang, H. W. (2018). REITs: Literature review. *Industrial Economic Review*, 2018.

## Notes

Note 1. Sohu.com, "What is the difference between this round of 34 trillion yuan of "new infrastructure" and the 4 trillion yuan in 2008?" [https://www.sohu.com/a/379157774\\_99957845](https://www.sohu.com/a/379157774_99957845)

Note 2. Sohu.com: What is the difference between this round of 34 trillion yuan of "new infrastructure" and the 4 trillion yuan in 2008? [https://www.sohu.com/a/379157774\\_99957845](https://www.sohu.com/a/379157774_99957845)



Note 3. Sohu.com: What is the difference between this round of 34 trillion yuan of “new infrastructure” and the 4 trillion yuan in 2008? [https://www.sohu.com/a/379157774\\_99957845](https://www.sohu.com/a/379157774_99957845)

Note 4. China United Fund-Zheshang Asset Management, Shanghai-Hangzhou, Huizhou- Hangzhou Expressway Asset Support Special Plan State Report, Shanghai Stock Exchange, 2019.

Note 5. Ren Zeping: Research Report on China’s New Infrastructure. <http://finance.sina.com.cn/china/gncj/2020-03-16/doc-iimxxstf9289680.shtml>

Note 6. Sourced from Wind dataset.