

# *Real Estate: Private Equity Investment in Shanghai*

*by Peng (Peter) Liu and Terence Loh*

## **Executive Summary**

In this case study, you are a consultant engaged to assess whether to invest in Project Innov Star, a Class A office project in Zhangjiang Shanghai, which currently is stalled. The hold up, and thus the opportunity to invest, arises due to a difference of opinion between the two partners. The majority investor (80%) seeks to sell its share, while the 20-percent minority investor would be willing to complete construction with a new partner, or might be open to selling the entire project. Your analysis will yield one of three recommendations: (1) pass on the investment, (2) purchase the majority, 80-percent share, or (3) purchase the entire project and engage a new construction partner. As part of the analysis, you are required to determine the value of the project, which is essentially the value of the land.

Your analysis should include, but would not be limited to the following:

- Property and market analysis;
- Current estimate of land value for Project Innov Star;
- Analysis and discussion of relevant property and investment metrics for the potential investment, such as assumptions used to run cash flow model. For real estate private equity investment in China, investors typically require an after-tax before-fee return (hurdle rate) of 25% IRR internal rate of return and at least 2x multiple on invested capital (MOIC).
- Sensitivity analysis on financial returns such as maximum acceptable price for the land and assumptions on future projections.

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## ABOUT THE AUTHORS



**Peng Liu** is the Singapore Tourism Board distinguished chair professor in Asian hospitality management at Cornell University's School of Hotel Administration and associate professor of real estate and finance at SC Johnson College of Business, Cornell University. Dr. Liu is an active researcher, and an editor of the *Journal of Real Estate Portfolio Management*, the official journal of the American Real Estate Society.

Liu's research focuses on the interaction between financial market and real economy, with a broad interest in real estate, hospitality management, securitization and REITs, commodity pricing, and market analysis in retail, airline, hotel, and recreational industries. Liu has published extensively in top-tier journals, including *Review of Financial Studies*, *Management Science*, *Real Estate Economics*, *Journal of Real Estate Finance and Economics*, *Journal of Banking and Finance*, *Journal of Empirical Finance*, among others.

Liu worked for Goldman Sachs Asset Management in New York City and held the position of senior consultant at Deloitte Consulting in Beijing. Prof. Liu is also a respectful securitization expert in China. He currently serves as the expert advisor to Shenzhen Security Exchange, China Insurance Asset Management Association and the Global Asset Allocation and Securitization Forum.

Liu has received the William N. Kinnard Scholar Award and 2018 Best Real Estate Portfolio Management paper award from the American Real Estate Society, the Homer Hoyt Post-Doctoral Honoree from the Weimer School of Advanced Studies, 2019 Rising Star in Real Estate Award from Shanghai Real Estate Finance Forum, and numerous research awards. He was named teacher of the year at the U.C. Berkeley's master program in financial engineering. Prof. Liu also taught the executive programs (EMBA) at top university in China including Tsinghua, Zhejiang, Shanghai Jiaotong, and Hong Kong Chinese University.

Liu earned a PhD co-majoring in Finance and Real Estate from Haas School of Business, U. C. Berkley and MA in Financial Economics from Peking University and a BS in Engineering from Tsinghua University, China.

**Terence Loh** is Senior Vice President, CDIB Capital. Terence has 24 years of investments experience. Prior to joining CDIB Capital, he was an Executive Director at CDH Investments, where he was responsible for investments and capital raising for their real estate funds.

Previously, Terence was a Vice President and Acquisitions Officer at JP Morgan Asset Management. Terence has also held management positions at Perry Capital, Lehman Brothers Real Estate Partners and AIG Global Real Estate. Terence started his career at GIC Real Estate.

Terence graduated with distinction from the Nolan School of Hotel Administration at Cornell University and earned a Master of Business Administration degree from Cornell Johnson Graduate School of Management at Cornell University. Terence is a past vice president of Cornell Hotel School Hong Kong and Macau chapter, and currently serves on the board of Cornell Club of Hong Kong and the Advisory Board for the Cornell University School of Hotel Administration Center for Real Estate and Finance (CREF).



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## 1. Assessing an Investment Opportunity

It is currently June 2014. Terence Loh walked into his office at a leading real estate private equity firm in China. He was energized by a site visit to a stalled office building construction project called Project Innov Star with the chairman of Tecpark, the minority partner who owns 20 percent of the project and is also the developer of the project. The chairman reached out to Terence in hopes that Terence's firm will replace the existing 80-percent majority investor and still allow Tecpark to develop and manage the project. Terence collected his thoughts before considering his next steps.

### 1.1 Project Innov Star

Project Innov Star is an office business park development located in Zhangjiang Shanghai, where two shareholders have irreconcilable differences and the majority shareholder wants to exit in 2014. The two shareholders acquired the land in 2012, with the intention of starting construction by 2013 and completing construction by 2015. As of 2014, the project is twelve months behind schedule. If construction does not begin by December 2014, the construction planning permit will expire and the developer will need to restart the permit application process, which could take an additional twelve to eighteen months. Tecpark Holdings, the minority shareholder which owns 20 percent and is also the development partner on the project, is in desperate need to find a like-minded investor to replace the majority shareholder. The majority shareholder, which owns 80 percent of the project, wants to sell their equity stake. However, given that this project is nominally under construction,

it is a fairly illiquid investment that is unlikely to attract many buyers. Plus, any investor stepping into the deal would have to be wary of any prior undisclosed disputes between the two initial investors. The potential investment strategy is the following:

- Acquire at least 80 percent, or, if possible, 100 percent of the project;
- Complete construction within 24 months;
- Lease the building to 80- to 90-percent occupancy; and
- Sell the building to a core buyer who wants stabilized income.

The property is owned by a special purpose vehicle (SPV) in the British Virgin Islands, which allows flexibility to buying and selling real estate projects in China and also reduces the tax expenses to 10 percent of capital gains. The construction and building management, however, remains under China's jurisdiction.

## 1.2 Development Partner

Tecpark Holdings is a niche developer focused on developing office business parks in China. Since their inception in 2007, Tecpark has completed five projects totaling 243,000 square meters and has two more projects under construction totaling 148,900 sq.m. In addition, Tecpark has strong relationships with high quality tenants, such as SAP, IBM, SHARP, and Alcatel-Lucent. Tecpark's experience in office developments and their strong tenant relationships should allow the project to be built on-time, within the budget limit, and leased quickly.

Any financial investor replacing the current majority partner would have the choice to either (1) acquire the majority stake and continue working with Tecpark or (2) acquire 100 percent of the project, including Tecpark's 20-percent share. However, as a financial investor owning the entire project, you would then need to find a developer to build the project, with the caveat that the developer replacing Tecpark may not be as knowledgeable about Project Innov Star as Tecpark. That said, since the project is a fairly straight forward 11-story office development, it may not be difficult to find a replacement developer. Needless to say, Tecpark prefers to find financial investors who would replace only the current majority partner, so Tecpark can continue to build the project and earn a developer fee (as well as profit sharing if the project achieves a certain return threshold).

## 2. Challenges

Terence has several concerns about the project. For starters, the project is located outside of Shanghai's sprawling central business district, which boasts significant supply and a worrisome vacancy rate close to 20 percent. In general, Shanghai's office market is witnessing a significant increase in supply, and the adage of "build it and they will come" may not apply to projects located a distance from downtown. In addition, there is a risk that the majority shareholder wants to sell their equity stake on an "as is" basis. Consequently, you will need to conduct thorough due diligence to uncover any hidden issues. In that regard, there is a risk that the majority shareholder is aware of issues that could derail the project and wants to exit before it is too late. Finally, there is concern that domestic capital is

flowing out of China to overseas real estate at the moment, and there might be less appetite among domestic core buyers for Project Innov Star once it is completed. International core buyers who want to purchase completed Chinese real estate are still in their infancy stage, as many of them consider China to be an emerging market that does not meet the requirements of core real estate market. As a financial investor, one needs to consider how to exit an investment and ensure there is sufficient liquidity when selling the asset once completed.

Therefore, you would need to "work backwards" to find out how much you will be willing to pay for the land based on current market conditions in order for you to achieve the hurdle rate. As a consultant, you need to advise Terence on whether he should pursue the project.

A decision to bid should be supported by a detailed property and market analysis, including current market dynamics and forecasts. Any bid recommendations should be accompanied by a maximum bid price, detailed analysis of how that level was determined, and a discussion of the associated sensitivities. A sensitivity analysis would include a relationship between two factors such as various terminal capitalization rates and pricing. Data tables are recommended to demonstrate the analysis. In addition, a scenario analysis may be appropriate to discuss best case, base case, and worst-case outcomes. This should provide Terence a terminal price value to provide a better understanding of the deal.

A decision to pass should also be supported by detailed property and market analysis. That analysis must include reasons why a bid would not make sense even at a minimal level.

Also needed is an evaluation of the potential risks involved with both options and the means to mitigate those anticipated risks.

If you choose not to proceed, you will need to provide a qualitative rationale as well as quantitative reasons. You will need to calculate the returns and support why this project does not meet the hurdle rate. For example, you could take a bearish view that with double the office supply coming online in 2019, rents and occupancy would underperform, meaning that the project would not to meet the 25-percent IRR and 2x MOIC required for the hurdle rate.



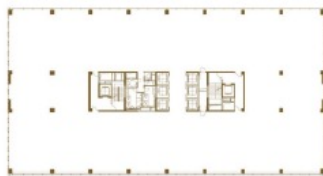
## Site Plan and Renderings



Innov Star's column-free large-bay floor layout combined with handover conditions of the highest market standards offers corporate tenants a ready-to-use light and spacious office space.



- ▶ Floor plate of Building A is approx. 2,850 sq.m. Building B approx. 1,650 sq.m
- ▶ Floor efficiency ratio when renting the whole floor is above 75%
- ▶ 100mm raised access floor
- ▶ Quality suspended ceiling system
- ▶ Net ceiling height 2.8m or above



### BUILDING A

- ▶ Floor plate: approx. 2,850 sq.m
- ▶ Reserved partial space for IT room, with floor loading of 8.0KN/sq.m



### BUILDING B/C

- ▶ Floor plate: approx. 1,650 sq.m
- ▶ Reserved partial space for IT room, with floor loading of 8.0KN/sq.m

## 3.0 Asset Overview

As it stands, Project Innov Star is currently a development site for an office building situated in the ZhangJiang Hi-Tech Park in Shanghai. As shown earlier, when completed, the project will feature three 11-floor office buildings which will be developed to Class A office specifications offering a total above-ground gross floor area (GFA) of 62,000 sq.m. Building A will be 28,000 sq.m., while buildings B and C will each be 17,000 sq. m. The three buildings sit on a 21,500 square meter parcel. The project also includes 24,000 underground GFA, facilitating 533 underground parking spaces and a staff cafeteria. Therefore, the total GFA is 86,000 square meters. Site pictures and project renderings are shown at left. Permissible use for the land is industrial or office, and land-use rights expire in 2055.

The building is reasonably well located. It is in an infill location that is a five-minute walk from the Line 2 subway station (Guanlan station). It is 30 minutes away from Lujiazui, Shanghai's financial center, and 25 minutes away from Pudong International airport. The site is located adjacent to several other office buildings anchored by IT companies. A middle ring road is scheduled for completion by 2015, and this should improve transportation. Tecpark Holdings has already pre-leased 5,000 sq.m. of the GFA at 3.80 RMB/sq.m /day with a chip manufacturing company.

## 4. Construction History and Current Status

A developer needs to obtain four certificates to begin construction on real estate development projects in China, as explained in greater detail below. The certificates are (1) the right to build, (2) land-use planning approval, (3) a construction planning permit, and (4) the final construction permit. Typically, it would take around 9 to 12 months to obtain these four certificates. When developers acquire land, they usually negotiate with government to obtain land use rights, which allows them to build the specific type of building intended for the property.

(1) Land-use rights include the rights to use the land, but rarely to own it. In China, the land is typically a leasehold, where the land owner leases the land from the government on a long-term basis. Such leases typically run for 70 years for residential properties and 40 years for commercial land. Project Innov Star holds a land lease of 50 years.

(2) Land use planning approval conveys the right to develop the project to industrial or office use. This approval is fairly administrative. Given that the land owner will build on the land for its stated use, this approval would be granted.

(3) For the construction planning permit, the land owner or developer would need to submit design drawings to the local planning department, which would determine the development's impact on its neighbors and whether its design is consistent with the permitted land use. As part of the land-use rights, there will be clear instructions on the floor area ratio (FAR), height of the building, amount of green space, minimum parking spaces, and ingress and egress restriction, among other specifications.

(4) For the final construction permit, the developer would submit final project design drawings and the selection of general contractor to build the project. In some cases, a feasibility study and environmental impact study may also be required.

The project began pre-development in late 2013, but halted construction in March 2014 due to the aforementioned differences between the two shareholders. At the moment, the project has received three of the four required certificates, but it has not received its final construction permit. Nevertheless, the project was able to obtain permission to dig trenches and complete support piling of the foundation. In terms of investment risk, the project is considered to be relatively low risk, since it has received three of the four certificates. However, the pause in construction raises concern regarding a potential issue with obtaining the final construction permit. The original plan was to start con-

struction by 2013 and complete construction by 2015. As mentioned earlier, it is now 2014 and the project is twelve months behind schedule. If construction does not begin by December 2014, the construction planning permit will expire and the developer will need to restart the permit application process, which could take an additional 12 to 18 months. Initial development and cost estimates, inclusive of contingencies, are shown below. The construction cost is ¥ 6,000 per square meter on Total GFA (above-ground and below-ground GFA). Note that while the per-meter construction cost is based on total GFA, the rents are based on above-ground GFA and do not include below-ground GFA. Tenants are billed separately for underground parking.

## 5. Recommendations

### 5.1 Financing Recommendation

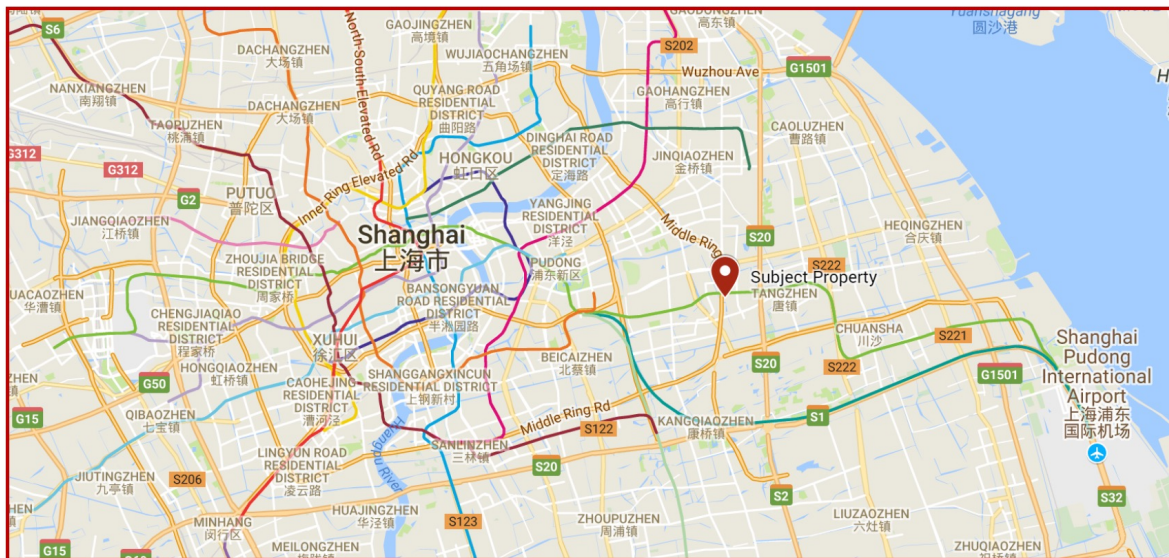
Identify and discuss potential sources of financing for this deal. To keep the analysis simple, you may assume that only equity and bank financing are used to develop the project. The land will be purchased with equity and the remaining development costs such as construction costs, soft costs, construction management fee, and contingency are funded by bank financing.

### 5.2 Asset Plan Recommendation

Assuming that you decide to continue with the investment, outline your plan for the asset. This would include a timeline that covers the period from now until the expected investment exit. For a project of this nature, the timeline would be about 48 to 54 months. It will typically take 24 months to complete development, 12 to 18 months to lease the building to the planned stabilized occupancy of 80 to 90 percent, and 12 months to dispose of the asset. For the exit strategy, you would need to consider potential buyers that would acquire the asset once it is stabilized.

### 5.3 Partnership Recommendation

Recommend whether the fund should go with Tecpark as a partner. If your recommendation is affirmative, you should determine whether the terms of the agreement should be further negotiated. If not, should you propose to buy Tecpark's 20-percent share of the joint venture? Consider other key issues that may be important for this project. ■



## 1.1 Shanghai Office Market Overview

Project Innov Star is located in a growing area in Shanghai, which is the largest city in China and is considered the financial center of China. The Shanghai real estate market has grown significantly since China reopened its real estate market after ascending to the WTO in 2001. For example, the stock of Gr-Class A international office buildings in Shanghai has increased from less than 2 million square meters in 2004 to 7 million sq.m in 2014. During the same ten-year period, the city experienced rapid economic and population growth. For the ten years, Shanghai's GDP grew from USD98 billion to USD384 billion, and population grew from 16 million to 24 million, thus supporting the substantial office stock growth. However, by 2020, the office stock is expected to double the 2014 figure, expanding to 14 million sq.m. The question is, if the supply is going to double, will there be double the demand to support it? Will

Shanghai's GDP and population growth continue to support such rapid growth in office supply? Jones Lang Lasalle argues that the demand will come primarily from Shanghai's pilot Free Trade Zone (FTZ), as well as financial and professional service firms. Established by the government in 2013, the FTZ would occupy four specific Shanghai submarkets and encourage investments in the following six areas: financial services, shipping services, professional services, commercial trade services, cultural services, and social services. The official launch of the FTZ is a signal of the government's continued commitment to continue with financial and service sector reform. It is expected that the zone will allow for experimentation with pilot reforms in financial deregulation, RMB convertibility, and interest rate reform. This will benefit the whole city's financial services industry and spur greater demand for professional services. Interestingly, Zhangjiang is part of the FTZ and could benefit from this new policy.

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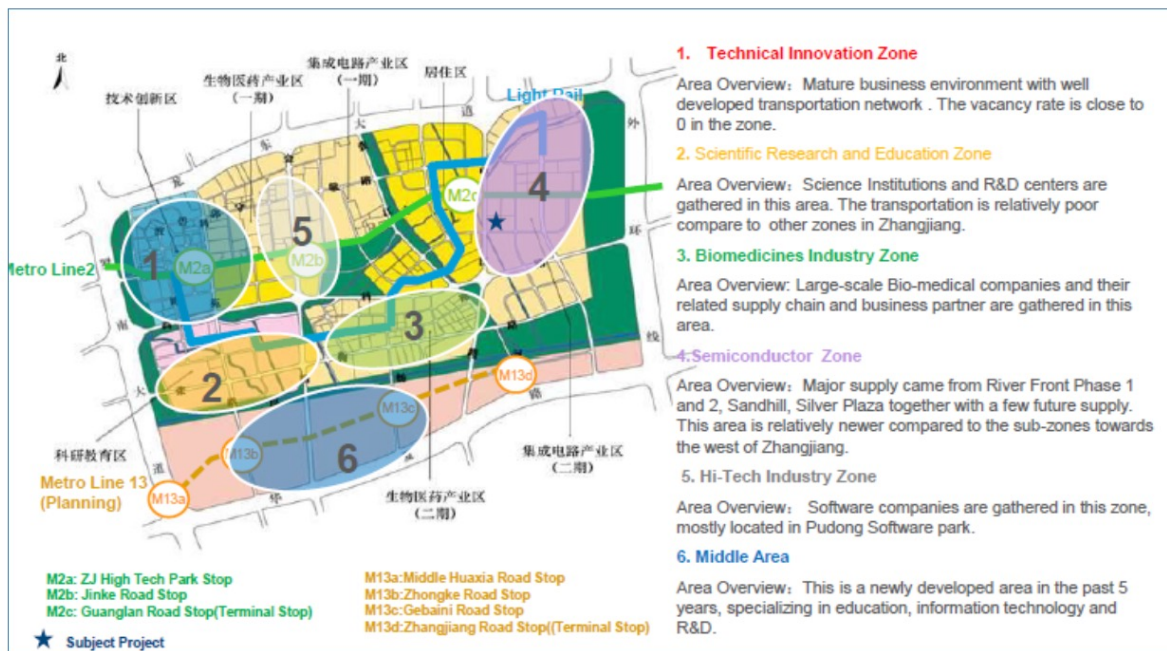


## 1.2 Zhangjiang Hi- Tech Park

Zhangjiang Hi-Tech Park is located in Pudong District on the eastern side of Shanghai, China. As stated above, Shanghai is the financial capital of China, with more than 24 million people, of whom 6 million live in Pudong. Pudong, also known as East Bank of Huangpu River, was previously farmland. It developed into a financial capital in the late 1990s, after the Central Government of China announced an effort to develop the "new Pudong." Created in 1992, Zhangjiang was part of this initiative to create growth opportunities for (1) high value-added manufacturing, research, and development centers, and (2) development in the five primary industries outlined below. Zhangjiang is a planned 25-square-kilometer business park located in Pudong, with direct access to the airport, harbor, railway, and commercial center. Zhangjiang has established itself as a destination business-park office market that has attracted

investments in office space by such foreign companies as IBM, Sony, and Lenovo. Zhangjiang became the R&D center for many multinational companies, including General Electric, Novartis, Honeywell, and DuPont. In addition, Zhangjiang also encouraged incubators of various types to facilitate independent innovation.

Zhangjiang's five primary industries are: information technology, pharmacy and biotech, green technology, civil aviation research and development, and high-end automotive industry support. Despite the fluctuations of the overall economy during the most recent financial crisis, the Zhangjiang government retains its quality tenants through strategic tax rebates and staff training allowances.





## 2.1 Shanghai Supply and Demand

Project Innov Star is an office business park development that can be more narrowly classified as part of the business park segment, due to its decentralized location and tenant mix. Overall, Shanghai business park has around 7 million square meters of gross floor area. Its 25-percent vacancy rate has declined to 15 percent since 2011. Zhangjiang had the largest stock of business park space in Shanghai—1.7 million sq.m with a vacancy rate of 12.5 percent (lower than the overall Shanghai business park vacancy rate of 15 percent). It is important to note that the vacancy rate in the office business

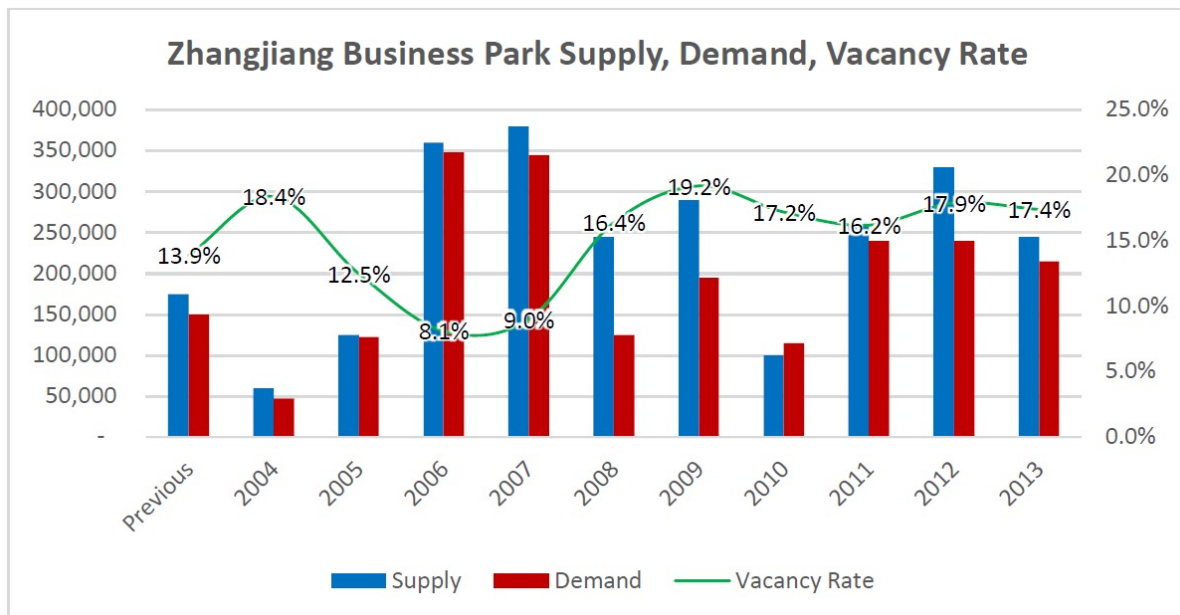
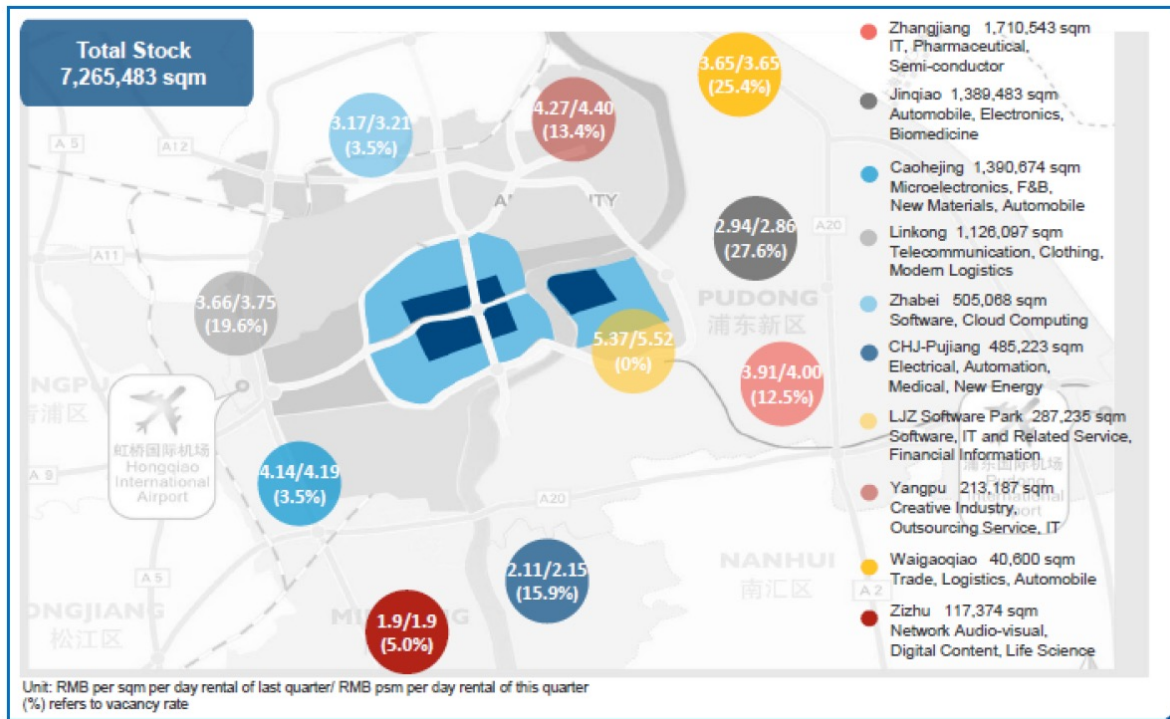
park is synthetically high at 15 to 20 percent, since a majority of the buildings are built and owned by the local government, also known as state-owned enterprises. These buildings tend to be lower quality with lower rents and are less well managed than those in Class A office business parks, which are well built to higher specifications and managed by international property management companies. The projects which are owned by state-owned enterprises don't have financial motivation to increase the building value by increasing rents or occupancy.

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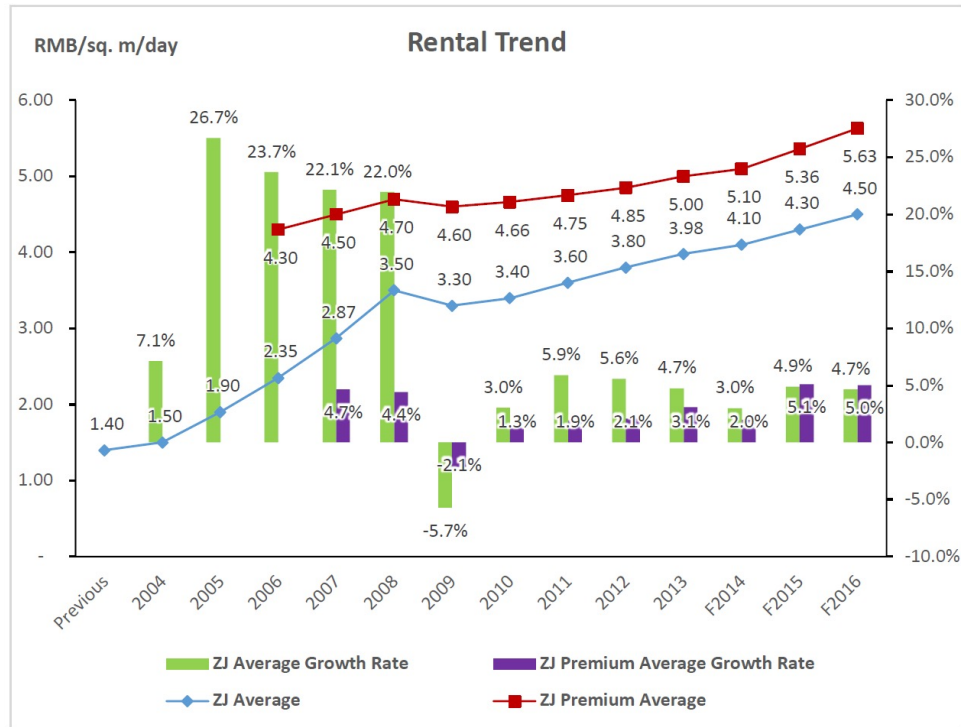


## 2.2 Zhangjiang Supply and Demand

Since 2004, the annual vacancy rate at Zhangjiang has been around 15 percent, but this is partly a function of the state-owned projects, which may not be well managed. Zhangjiang's Class A projects have a 5-percent vacancy rate, given the lack of high-quality business space. Monthly absorption for high-quality, well-located Class A office business space is between 3,000–5,000 per sq.m per month.



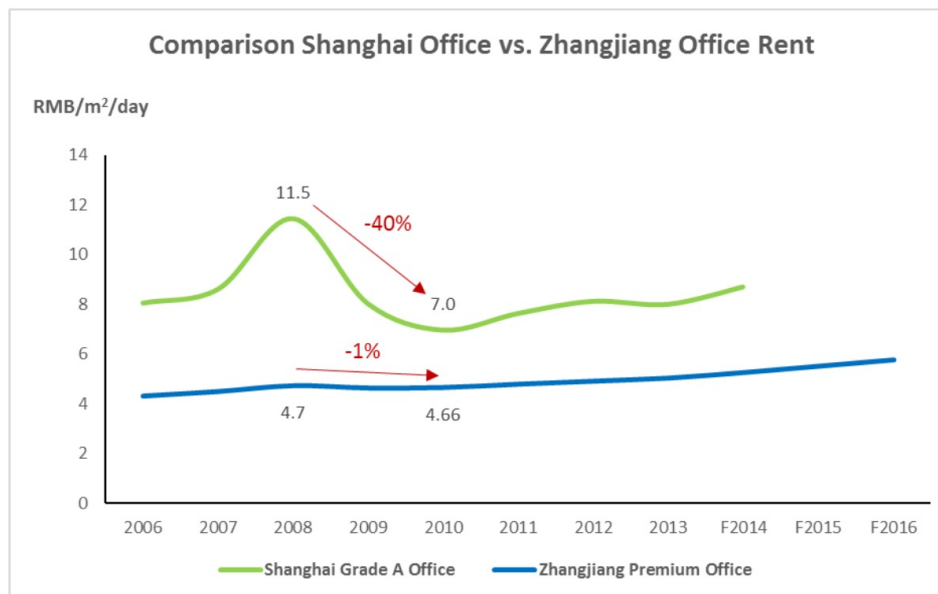
## Rents Historical and Forecast



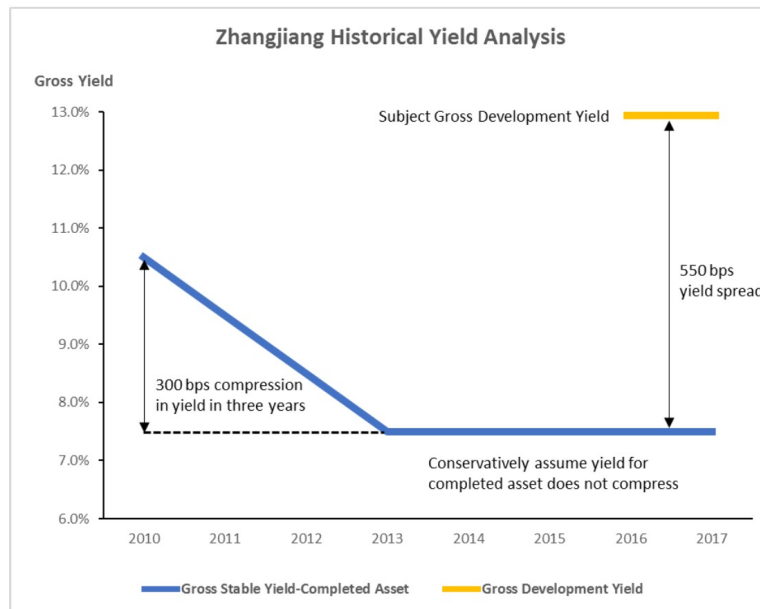
The chart above shows the rental rates (RMB/sq.m /day) from 2004 to 2014. The top (red) line shows the rents for the Class A, and the blue line is for Zhangjiang average rents (including Class A and lower quality projects).

In terms of office rents, Zhangjiang is a resilient market, as it is a destination business park, where suppliers and customers want to be near each other. During the financial crisis, Class A office rents declined by 40 percent, but rents in Zhangjiang

only declined 1 percent. This is evidence that the Zhangjiang market is strong and tenants tend to be “sticky,” even in adverse situations like the financial crisis. While vacancy rates did increase during the financial crisis, this was primarily due to new supply being added (and absorbed) rather than tenants moving out of Zhangjiang. Separately, the carparks for Class A buildings typically rent out at RMB400-450 / parking space/ month.



## Cap Rate and Yield Analysis



Gross yield is calculated as gross revenue / asset price, and net yield is calculated as net operating income / asset price.<sup>1</sup> The following exhibit presents a chart displaying gross yields in the Zhangjiang region for the past four years. As shown in the following chart, gross yields for office business parks in Zhangjiang have been declining from 10.5 percent in 2010 to 7.5 percent in 2013. Interestingly, the exit cap rates have been compressing steadily over the past few years, but a key decision point involves whether to underwrite further cap-rate compression. The decline in gross yield is driven primarily by increased interest from investors for office space in business parks, thus driving up the prices and causing yields to decline. As of 2013,

Class A income-producing office space in business parks in Zhangjiang is trading at 7.5 percent compared to 4.0 percent for Class A downtown office buildings, translating to a spread of 350 basis points. However, an increasing number of investors are recognizing that the risk profile for Class A office business park space is similar to that of Class A office buildings, and the 350 bp spread should narrow. The difference between gross yield and net yield is 10 percent, since in Zhangjiang, property owners do not have to pay property tax (which is 12.5 percent of gross revenue). In other words for Zhangjiang, a 7.5-percent gross yield in 2013 would translate to 6.75 percent after taxes ( $0.9 \times 7.5\%$ ). However, in the downtown CBD, property owners would have to pay 12.5 percent of gross revenue as property taxes, thus making Zhangjiang more attractive.

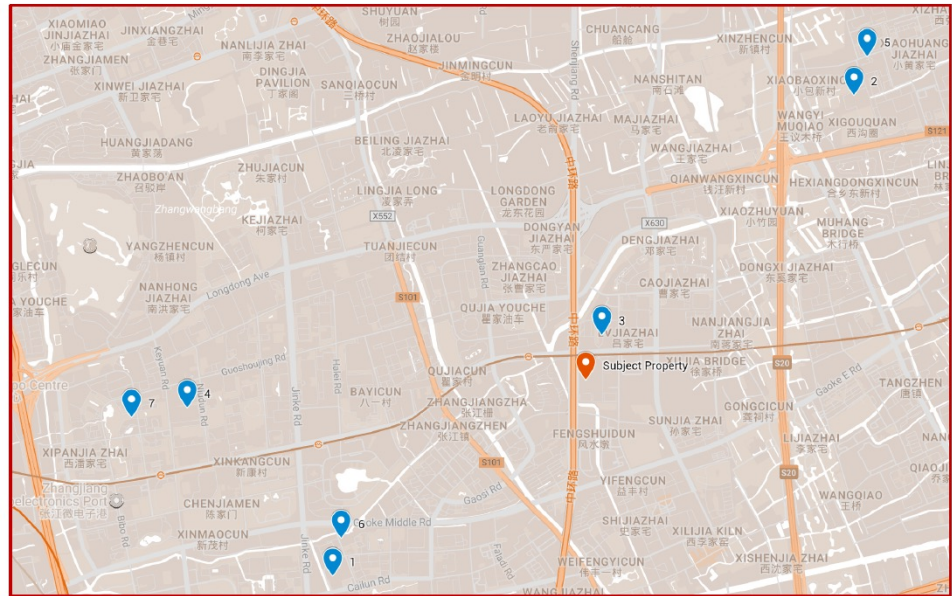
<sup>1</sup> Outside of China, the investment community typically uses net yield and not gross yield as a valuation metric.



## Analysis of Comparable Projects Sales

As stated elsewhere, the exit strategy for this project is a sale to a core buyer who wants stable long-term leases in a well-built, well-located business park in Shanghai. The ultimate sale could be made either to domestic or international core buyers. Domestic core buyers are typically Chinese insurance companies and banks, which want to invest in stable income to match with their liabilities. International core buyers entering China's real estate market are still in their infancy stage, as many of them consider China to be an emerging market that does not meet the requirements of core real estate market. The China REIT market has not been established in the same way as it has developed in Singapore and Hong Kong, so selling to a Chinese REIT is not an option. Singapore and Hong Kong REITs are potential buyers, on the other hand, but many of them have difficulty with finding yield-accretive properties to acquire in China, since most of the leveraged yield on costs is higher than costs of debt. For example, Shanghai business park properties are trading at 5 percent, but the local cost of debt in China is 6 percent, so it turns out that the project yield is lower than cost of debt, and REITs can only generate positive returns by assuming capital appreciation or aggressive rental growth.

The chart below provides comparison ratios for seven other projects not far from Project Innov Star, benchmarking date of acquisition, average selling price in RMB per square meter, gross yield that property was sold for, use of land, quality of building (Class A or B), average rent at time of sale, and buyer. As stated above the square meter figure used here is based on above-ground GFA and not total GFA. We should point out that R&D land has fewer restrictions in terms of leasing out to tenants compared to industrial land, so a project containing R&D land typically sells at a marginally higher price. For simplicity, let's assume that R&D land and headquarters land are the same. The projects in the chart are not 100-percent comparable, so you will need to make an adjustment accordingly. For example, Lotus (1) and (2-5) are not located near the current subway line 2, so they would naturally trade at a lower



price than Innov Star, which is located 10 minutes' walk to the current subway stop. In addition, ChangXing Building is a Class B building and its ASP per square meter would be lower than that of Innov Star.

In addition, please note the following:

- *Above ASP RMB psm* refers to average selling price per square meter based on above ground gross floor area. This is the same as taking the sale price divided by the above ground selling price and not the Total GFA.
- *Rent* equals the estimated average rents and does not take into consideration the latest rent transacted. For example, while the average rent at Sandhill Plaza is RMB4.38/sq.m /day for the entire building, the latest transacted rents are more than RMB5.00/sq.m /day. This means that if all tenants' leases were to expire today and new leases were signed at RMB5.00/sq.m /day, the average rent would be higher than RMB4.38/sq.m /day. However, since many tenants have different lease terms, it is not possible for all the rents to increase to RMB5.00/sq.m /day, even though latest rents were signed at more than RMB5.00/sq.m /day.

**Continued overleaf**

	Project Name	Date	Above ASP RMB psm	Gross Yield	Use of Land	Class	Rent	Buyer
1	Lotus 2	2Q 2014	19,300	7.5%	R&D	A	3.8	Ascends
2	Zhangjiang MicroElectronics	4Q 2013	16,200	8.0%	R&D	B	3.5	WillSemi
3	Sandhill	4Q 2013	19,000	8.2%	Industrial	A+	4.38	MSREF
4	Block 4-11	4Q 2013	20,000	6.0%	Headquarters	B	4	Local End-Users
5	Zhangjiang MicroElectronics	3Q 2013	16,957	7.2%	R&D	A	4	Karl Storz
6	Lotus 1	3Q 2013	23,150	8.2%	R&D	A	3.8	SOE End-Users
7	ChangXing	3Q 2013	20,000	7.3%	Industrial	B	4	Carlyle
<b>Simple Average</b>			<b>19,230</b>	<b>7.5%</b>				

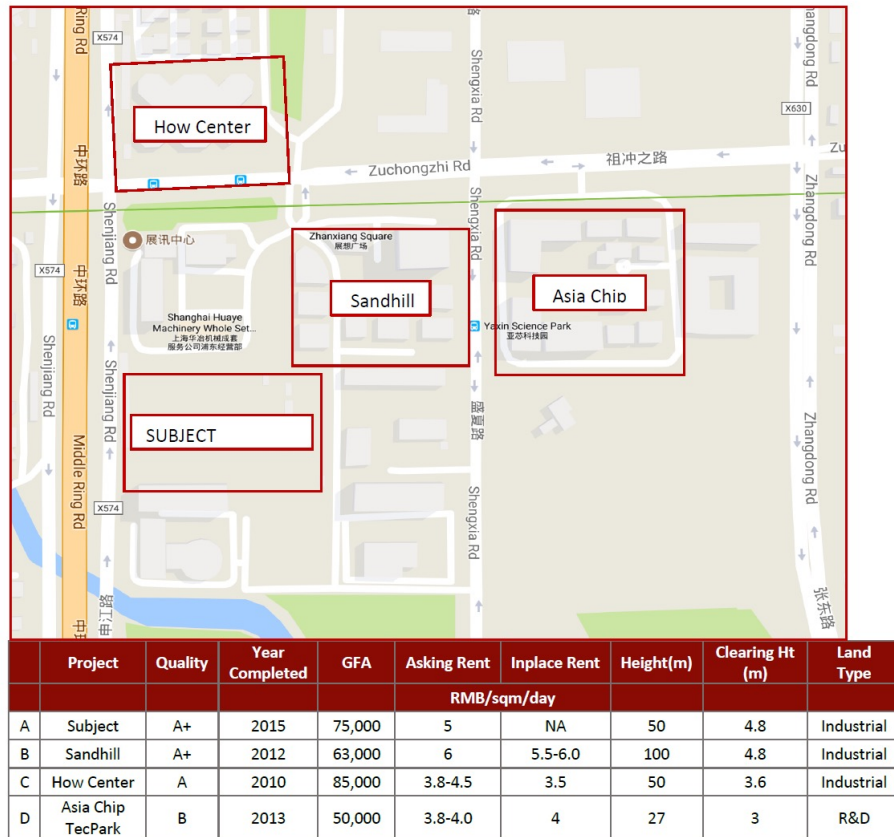
If you want to proceed with investing in this project, your analysis must provide an estimate on how much you are willing to pay for the land. Subsequently, you will take the land costs plus the stated construction costs to derive the total cost of building the project. As a hint, if you want achieve the required hurdle rate outlined above, your total cost of land plus construction costs should be below the average sales comparables of RMB19,230/sq.m. (This is a replacement-cost analysis, in which you are trying to determine whether it is cheaper to build than to buy. If it is cheaper to build and you are able to tolerate development risks, you should build rather than buy.)

Finally, you will need to take a view on the exit price for Project Innov Star four years hence (that is, in 2018). This will be key in determining your hurdle rate, as the biggest driver of the returns is your entry price or total development costs and exit price or sale price. You can start with the average selling price per sq.m from 2013-14 (RMB19,230/sq.m and gross yield of 7.5%), but those figures could be very different in 2018. You can also search the internet to see whether there were other comparable sales between 2015-2017 to further support your exit price comparables.

## Rental Comparables

As part of your analysis, you will also need to forecast rental rates at the subject by analyzing the rented comparables. Adjacent to the building's development site are three comparable properties: Sandhill, How Center, and Asia Chip. These properties are mostly rented by technology companies, with

Sandhill being the newest Class A building and therefore your most direct comparable. The other tables (overleaf) show (1) more detailed rents transacted at Sandhill and (2) rents of other Class A buildings in Zhangjiang, which are achieving average rents of RMB5.37/sq.m /day.



## Zhangjian Class A Office Buildings

No	Building Name	GFA (sqm)	Rents (RMB/sqm/day)	Occupancy	Clearing Height	Comments
1	Sandhill	65,288	5.5	70%	2.8/4.2	One 20-floor office building and 8 villas. Launched on market in 2012Q4.
2	German Center	33,000	5.5	98%	2.7/4.2	Three buildings with 6 or 7 floors. Fully leased out.
3	Zhangjiang Mansion	46,000	5.0	80%	2.7/4.2	One large anchor moved out, leading to 20% vacancy.
4	Chamtime	97,900	5.5	15%	2.8/4.2	Will launch on market in 2014Q3; 15% pre-leased.

### Recent Leasing Transactions

Time	Building Name	Tenant	Industry	Lease Area (GFA, sqm)	Actual Rent (RMB/sqm/day)
Q3 2013 to Q1 2014	Sandhill	Qifeite	Environmental Tech	380	4.7
		Kionix	IT	150	4.7
		Shengbao	Environmental Tech	380	4.8
		Disney	Entertainment Tech	1,363	5.0
		Borouge	Material	7,000	5.5
		Dupont	Chemical	2,727	4.8
		Hua Xia Travel	Entertainment Tech	1,083	6.0
		ADI	IT	5,454	4.5
Average Rent					5.06
Q4 2013	4-11 Block	Nvidia	IT	20,000	4.4
Q4 2013	Chamtime	Ebay	IT	15,000	5.0

## APPENDIX 7

## Financing

Based on your discussion with construction lenders, the project will likely obtain a loan-to-cost ratio of 50 to 55 percent. The loan payment will be interest only at the People's Bank of China's one-year floating rate times 1.10 (roughly 6.0 percent). The term of the loan is ten years. Since you intend to sell the

asset after four years, there is no need to consider obtaining permanent financing for the project once completed. For simplicity purposes, it is assumed that the construction loan is 53 percent of total development costs.



## APPENDIX 8

### Corporate Structure: Special Purpose Vehicle

As indicated earlier, the project is owned by Tecpark and the current majority investor through a special purpose vehicle (SPV), an offshore company domiciled in British Virgin Islands. Should you decide to purchase the majority shareholder's 80-percent share in the joint venture, you will simply acquire the current investor's 80-percent share in the SPV company. There is no additional government regulatory approval needed for you to acquire the offshore shares. Once construction is completed, the base case plan is to sell 100 percent of the SPV that owns 100 percent of the project company to core investors who want to own this stable, completed, income-producing asset in China. The potential buyer would need to acquire 100-percent of the SPV in U.S. dollars, so this might limit the pool of buyers, as Chinese buyers (who might be willing to pay a higher price) may only have RMB and not USD. While it's true that Chinese buyers could potentially convert RMB to USD, this conversion is subject to capital controls. An alternative exit strategy would be to sell either the onshore asset (which would incur high capital gains taxes) or the onshore project company (which would incur the additional 10-percent capital gains tax).

Real estate investments are usually held within SPVs for reasons that include tax benefits, ease of asset transfer, risk isolation, and flexible investment structuring. Being based in the British Virgin Islands brings several benefits, starting with favorable tax treatment. The British Virgin Islands is widely regarded as a tax haven and its citizens are not subject to capital gains tax, gift tax, sales tax, value added tax, profit tax, estate tax, or corporation tax. Due to SPVs' preferable tax treatment, it is advantageous for companies such as yours to hold Chinese assets through an offshore entity.

A second important advantage of using an offshore SPV is the ability to circumvent Chinese policies, notably, taxation. The project will be owned by the offshore SPV, which will be owned by the new buyer. Should that buyer decide to sell the asset, it would simply sell the shares of the offshore SPV. Since the ownership of the property did not change after the transaction (the offshore SPV continues to be the holder of the asset), there would be no need for government approvals of permits or licenses which are both costly and time consuming.

The third advantage of using an SPV is the ability to isolate risk. The SPV is a limited liability entity that only owns one property, the building. The limited liability nature of the SPV protects one from the financial risk of the venture; should the project fail, creditors would not be able to seek reparation from a buyer's other investments or its affiliates.

Last, the SPV allows you to have a flexible investment structure. An SPV can be set up to raise capital by issuing shares and multiple share classes can be created to dictate governance. In addition, SPVs can also be used to raise additional capital at more favorable borrowing rates. Since an SPV is a separate entity, credit quality is based on the collateral of the SPV, and not the credit quality of the sponsoring corporation.

SPVs are extremely useful for companies looking to purchase real estate as an investment vehicle. The tax benefit alone allows a project to reach higher rates of return, since profits and proceeds are either taxed at a low rate or not taxed at all. The SPV also protects the sponsor against recourse if the project fails. In essence, SPVs allow investors to protect against downside risk, while capturing upside potential.

## APPENDIX 9

### Valuation

The majority investor is prepared to sell you their share of the property at a fair valuation. As part of your due diligence process, you need to figure out what is a fair value for the land.

To establish the land value, you'll use a combination of an income capitalization and a sales comparison approach. You will need to work backwards using the income approach to derive what is the maximum you are willing to pay for the land, in order for you to meet the hurdle rate. As a sanity check, you will need to compare your exit price assumptions with the sales

comparables. It's worth noting that you are unlikely to use a replacement cost approach, given that there are no comparable replacement land costs that you can use, since the adjacent area is built out and there is no vacant land. However, you could again work backwards to derive the implicit land value. For example, if the average sale comps for a complete building is RMB19,000/sq.m and if construction costs are RMB7,000/sq.m for similar building quality, the implicit land value is RMB12,000/sq.m (RMB19,000 – 7,000/sq.m).

## APPENDIX 10

### Circular 698 Tax

Developers unfamiliar with China's regulations may not be aware of the capital gains tax known as the Circular 698 tax. This is levied in addition to the business tax and income tax. The Circular 698 tax is applied to a non-resident enterprise transferring shares in an offshore intermediary enterprise that directly holds an equity interest in a People's Republic enterprise. Since you are planning on purchasing the majority share-

holder's shares through an offshore SPV, there will be a tax levied on the property's capital gains. The current Circular 698 tax rate is 10 percent of all capital gains. Thus, two parts of the calculation for the decision on whether to sell the building are a (negotiable) brokerage fee typically equal to 1 percent of the selling price and a (non-negotiable) 10-percent capital gains tax with no depreciation recapture.

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