

Risk and Return of Property Investment in China - A Case Study of Guangzhou

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1. Investment Opportunities in China Properties

A structural change in the property market is anticipated as a result of a vastly growing pension fund industry in China, and as there is a renewed interest in Hong Kong and China properties from foreign funds since early 1998. Both domestic and foreign funds will need to find investment opportunities in real property. Foreign funds look at real estate as a long-term investment. They adopt serious and professional approaches in selecting projects, and they want to associate themselves with professional, reliable and respectable consulting firms.

The Ninth Five-Year Plan (1996-2000) projects a major boost in the construction industry. The average annual construction volume reaches \$187 billion per year during the plan period (Chen, 1998). The large demand, coupled with the lack of construction credit, poses great opportunities for foreign institutional and private investors. According to Chen (1998), working capital for construction represents only about 8-10% of construction gross output value. Investment funds based on initial cost estimates are usually insufficient, and construction triangular debt accounts for a large portion of China's total triangular debt. As a result of the central government's strict monetary policy since late 1993, construction loans in China have been difficult to obtain. It was not until late 1997 that limited construction financing became available again. Pre-selling was the only way to finance a construction project, and any thing larger than 15% internal rate of return for real estate development would be attributed to "luck" (HKUST/CEIBS, 1998).

Some investments in China properties will come in the form of REITs. An US\$ 300 million real estate investment fund was set up by the property consultancy, Brooke Hillier Parker, to finance the development of a US\$ 370 million 62-storey AVIC Plaza project in Shenzhen, China (*Asian Wall Street Journal*, June 9, 98 and *South China Morning Post*, June 9, 98). The REIT was to be listed on the London stock market. The balance of the project was to be financed by bank borrowings. The REIT was considered by the consultancy chairman to be the first for office development, though there had been funds to raise money for infrastructure projects. Furthermore, this REIT was meant to be the first in a series to come as there was perceived to be a need to create an investment vehicle alternative to direct investment for

Hong Kong and the region. An investment return of 20% was expected. This expectation is indeed the theme of this article - is 20% too much or too little to expect? With this renewed, if not increasing, demand of property investment in China comes the corresponding demand of professional property consultancy service.

2. Determining the Risk Premiums

Property consultants, most of them coming from Hong Kong and undertaking feasibility study on property investment and development in China, have faced the problem of ascertaining appropriate discounting rates in their DCF or IRR analyses. The discounting rates should accurately reflect the opportunity cost of capital and consequently the systematic risk of the project. Quite often, determination of the discounting rates, or the "hurdle" rates, has been based nothing more than intuition. However, "hurdle" rates lead to incorrect investment decisions because high return projects are by definition more favoured than low return ones. The pitfall is that the absolute expected return of a project may look very high, but it is still not high enough to compensate for the high risk that has to be borne. Or conversely, a project may be expected to generate very modest return, but this return is already higher than its riskiness. In other words, the expected return of a project must be commensurate with its risk, or more precisely, its systematic or market risk.

A more educated guess that takes into account the risk class of the project could be based on the CAPM methodology, involving historical risk and return analyses plus some future projections based mainly on economic fundamentals. This study is focused initially on a preliminary analysis of risk and return of property investment in Guangzhou in its different sectors, to be followed by a risk segregation into its systematic and unsystematic components. If appropriate discounting rates can be established and properly adjusted for risk (in a CAPM beta sense), then investors could make decisions to invest or not to invest by substituting the rates into the DCF equation to arrive at the NPV of the project. Under such circumstances, a positive NPV would indicate that the project could go ahead. Successful completion of the project is anticipated to bring in value to the owners. Therefore, it is important to set risk-adjusted discount rates for particular projects, or at least particular categories of projects. Information concerning the risk class of the property sectors is crucial to a rational decision-making process. This process could be further enhanced with testing the sensitivity the NPV to such assumptions as cash flows, and the influence of certain intangible unmeasurable factors.

3. Property Performance in Guangzhou

Data

Transaction data on various property sectors have been provided by Pearl River Hang Cheong Real Estate Consultants Limited (PRHC). This is a 50/50 joint venture set up in August 1993 between Hang Cheong Surveyors Limited in Hong Kong and Guangzhou Pearl River Enterprises Holdings Company. Among the many consultancy projects PRHC carries out is the development of computerized real-estate-databank information systems for the Guangzhou City Real Estate Transaction Bureau and Marketing Management Department. Since the early nineties, information concerning a representative portion of all property transaction has been captured and stored in the system. All pre-sale transactions in Guangzhou are indeed recorded since 1993, and there are about 160,000 transaction records. This service is provided virtually free initially to the Guangzhou government to build *guanxi*.

Since then, PRHC has gained competitive advantage by being the only property consulting firm to gain direct access to the government's property data.

Risk and Return

Table 1 below summarizes the annual returns (capital gains only) of various property sectors in Guangzhou, and of stocks in Shenzhen and Shanghai. Figures are not strictly comparable, as statistics are computed from data covering different time spans. Due to lack of data, annual rates of capital gains are missing for the first 6, 11 and 3 quarters for "super A" office, industrial property and "grade A" office respectively. In the summary table are average returns, standard deviations and coefficients of variation for various sectors. Standard deviations show the volatility of returns, whereas reciprocals of coefficients of variations give risk-adjusted returns over the respective periods. It should be noted here that total returns should include capital gains *as well as* rental or dividend yields. However, there is no record on such yields. Returns include capital gains only. The results will be interpreted in the context of the limitation as posed by the absence of rental or dividend yields.

(unit: % except for CV)

Year-Qtr	Property Investment					Stock Investment	
	Residential Property	Office (Super A)	Industrial Property	Office (Grade A)	Total Property Market	Shenzhen Stock Exchange	Shanghai Stock Exchange
1993-3	132.74				168.53	-6.0	26.8
-4	-19.66				0.47	-1.2	6.8
1994-1	-20.53				-1.31	-43.6	-23.9
-2	-2.31			35.97	7.86	-54.2	-53.4
-3	-26.06			-11.27	1.68	-26.0	-11.1
-4	-6.10			-6.24	-1.31	-41.0	-22.3
1995-1	-15.30	-1.31		9.04	-14.32	-23.9	-8.2
-2	-22.24	-6.84		-26.81	-30.28	4.1	34.4
-3	-16.25	-24.40		14.99	-30.85	-29.2	-8.7
-4	-10.36	-26.79		23.55	-17.59	-19.5	-14.3
1996-1	-11.29	-4.81		-11.66	-7.38	-17.3	-14.0
-2	-1.27	-18.85	50.87	6.43	0.88	53.6	27.5
-3	-8.63	10.14	6.95	-2.34	-11.41	100.3	21.2
-4	-12.66	30.49	2.70	-4.33	7.66	189.1	65.1
1997-1	-5.25	6.65	-32.30	8.56	-10.59	289.2	121.9
-2	-1.95	26.33	-8.23	23.79	-1.74	122.2	55.5
-3	15.76	25.63	45.16	-14.42	4.49	24.0	25.3
-4	8.94	-2.32	4.12	-18.90	-21.08	16.5	30.2
1998-1	-0.31	28.60	81.69	-19.90	-0.38	-13.1	0.7
Average	-1.20	3.27	18.87	0.40	2.28	27.58	13.66
SD	34.11	20.11	37.10	17.96	41.89	89.18	39.39
CV	-28.50	6.15	1.97	44.48	18.37	3.23	2.88
Risk-Adjusted Returns	-0.04	0.16	0.51	0.02	0.05	0.31	0.35

SD: Standard Deviation, CV: Coefficient of Variation

Table 1 - Performance of Guangzhou Property and Shenzhen & Shanghai Stock Investment in China, 1992-98

The table shows that in terms of risk-adjusted returns, industrial property is the best performer. Industrial property yields capital gains more than three times the second runner-up - "super A" office. However, Guangzhou property market as a whole yields only one-sixth of the risk-adjusted returns as Shenzhen stock market, thus reflecting the superiority of stock over property investment in Southern China.

Further, property investment in Guangzhou appears to have performed far less well than in Hong Kong. Chiang and Ganesan (1996) report that for the period between 1984 and 1996, the average of annual capital gains for the four property sectors (office, retail, industrial and residential) range between 14% and 21%. This range is much better than the -1% - 19% in the case of Guangzhou properties. Further, the coefficients of variation range between 0.8 and 1.3 only in the case of Hong Kong, much less than the -28.5 - 44.5 of Guangzhou properties. Though the periods are not entirely comparable, it is unlikely that performance of property investment in Hong Kong would become much less superior if comparisons are made on the same time basis. It is because property prices in Hong Kong have been escalating since 1996 until towards the end of 1997. Furthermore, property sectors in Hong Kong went into recession right Margaret Thatcher's visit to China in the early eighties. Property market did not begin to pick up until the late eighties. It implies that if indeed comparisons are made for the period between 1992 and 1998, superiority of property investment performance in Hong Kong over Guangzhou would be more marked than now.

Property investment in Guangzhou do not even give investors enough protection against inflation. Between 1992 and 1997, annual inflation rates, as measured by retail prices index, range between -0.6% (in 1997) to 25.1% (in 1993) with an average of 10.7%. This inflation average is far larger than the average annual capital gains of Guangzhou property investment in all but the industrial property sector.

Thus, the historical performance of property investment in the case of Guangzhou has been discouraging. Returns of the property sectors have been very volatile and, perhaps with the only exception of the industrial sector, very disappointing. Though there has been strong demand of space in all sectors, it appears that there has also been too much supply due to overbuilding (Hui, Chiang and Tang, 1997). Returns from property investment, if any, are not enough to compensate for the risk taken. In fact, potential investors may have found the China market too volatile and information too scanty to make calculated and educated guess that they'd better avoid the market at all, at least for the time being. Take as an example, a US private international investment firm was reported to have set aside \$2 billion to invest in Asia within about two years, with about half of that targeted on Hong Kong (*South China Morning Post*, August 30, 98). As regards China mainland properties, the company had considered only those that had a link to Hong Kong. Such markets as Hong Kong and Singapore were preferred for their sound physical and administrative infrastructure. That reflects what China mainland has to improve their infrastructure to attract more institutional property funds. Compared with other financial sectors of the world, there are simply too many unsystematic risks, as the following section will demonstrate.

Segregation of Risks

The Chinese property and stock sectors are compared with the Dow Jones Global Indexes of the World, the US, the Americas, the Europe and the Asia/Pacific. The following Table 2 shows the systematic and unsystematic components of the total risks, together with average

returns, and the Beta values with respect to the Dow Jones Global Indexes of the World being assumed to be the "market" surrogate. The aim is to show that from the point of view of a global stock investor; property investment, perhaps particularly in China, has its own distinct set of characters that need be further understood because literally 99% of the risk is unsystematic.

(unit: % except for Beta)

	Stock Investment in China and the World							Property Investment in Guangzhou				
	World	US	Americas	Europe	Asia-Pac	Shenzhen	Shanghai	Residential	Office (A+)	Industrial	Office - A	All GZ
94-1	10.32	-1.49	-1.32	14.19	23.02	-43.65	-23.92	-20.53				-1.31
-2	7.65	-1.77	-2.22	12.84	16.12	-54.17	-53.41	-2.31			35.97	7.86
-3	4.54	0.08	0.57	7.10	7.37	-26.03	-11.13	-26.06			-11.27	1.68
-4	2.55	-2.06	-3.25	-0.33	11.83	-40.98	-22.30	-6.10			-6.24	-1.31
95-1	5.25	11.67	9.41	6.74	-0.24	-23.87	-8.17	-15.30	-1.31		9.04	-14.32
-2	6.64	22.42	20.49	15.19	-11.98	4.08	34.37	-22.24	-6.84		-26.81	-30.28
-3	10.21	26.60	23.50	14.78	-6.64	-29.22	-8.69	-16.25	-24.40		14.99	-30.85
-4	17.16	34.26	32.32	18.01	0.34	-19.48	-14.29	-10.36	-26.79		23.55	-17.59
96-1	17.29	29.40	28.92	16.33	4.33	-17.25	-13.99	-11.29	-4.81		-11.66	-7.38
-2	15.63	23.16	22.62	11.84	9.77	53.61	27.54	-1.27	-18.85	50.87	6.43	0.88
-3	11.32	18.01	17.60	12.14	2.67	100.26	21.19	-8.63	10.14	6.95	-2.34	-11.41
-4	10.57	20.49	20.74	18.95	-9.07	189.07	65.14	-12.66	30.49	2.70	-4.33	7.66
97-1	6.30	16.85	16.93	18.97	-18.94	289.17	121.90	-5.25	6.65	-32.30	8.56	-10.59
-2	18.55	31.24	31.21	26.35	-5.97	122.18	55.46	-1.95	26.33	-8.23	23.79	-1.74
Average return	10.28	16.35	15.54	13.79	1.62	35.98	12.12	-11.44	-0.94	4.00	4.59	-7.77
total risk	4.99	12.52	12.22	6.21	11.13	99.43	44.00	7.58	18.71	27.11	16.66	11.85
Variance	24.91	156.65	149.41	38.55	123.82	9886.42	1935.56	57.53	350.09	734.87	277.41	140.46
co-var/world	24.91	47.05	47.47	21.42	-1.36	54.67	18.45	14.05	-5.95	59.31	26.39	1.05
Beta	1.00	0.30	0.32	0.56	-0.01	0.01	0.01	0.24	-0.02	0.08	0.10	0.01
Systematic risk	4.99	3.76	3.88	3.45	0.12	0.55	0.42	1.85	0.32	2.19	1.58	0.09
Unsystematic risk	0.00	8.76	8.34	2.76	11.00	98.88	43.58	5.73	18.39	24.92	15.07	11.76
Systematic risk as % of total	100.00	30.03	31.77	55.56	1.10	0.55	0.95	24.42	1.70	8.07	9.51	0.74
Unsystematic risk as % of total	0.00	69.97	68.23	44.44	98.90	99.45	99.05	75.58	98.30	91.93	90.49	99.26

Co-var/World: Covariance of returns with the "World", Asia-Pac: Asia Pacific, AL GZ: All Guangzhou Properties

Source of Dow Jones Global Indexes: Alsop, R.J. ed. (1998). *The Wall Street Journal Almanac 1998* (NY: Ballantine Books), p.352

Table 2 - The Systematic and Unsystematic Components of Property Investment in Guangzhou and Stock Investment in the World and China

Table 2 demonstrates when set in the context of the global stock market, property investment in Guangzhou is un-correlated with any of the stock sectors, thus vividly illustrating the peculiarities of property investment in the Southern China city. Except for the case of the residential sector, more than 90% of the risk of investing in Guangzhou properties is unsystematic, that is, can not be diversified away. In view of this large portion of non-diversifiable risk component in the total risk, it can only be expected that their returns would not be commensurable with the systematic risk. Indeed, Figure 1 below shows that returns of all property sector in Guangzhou are below the Security Market Line, if we arbitrarily take the riskless rate of return to be 5%. This is about the average 1-year US treasury yield over the period.

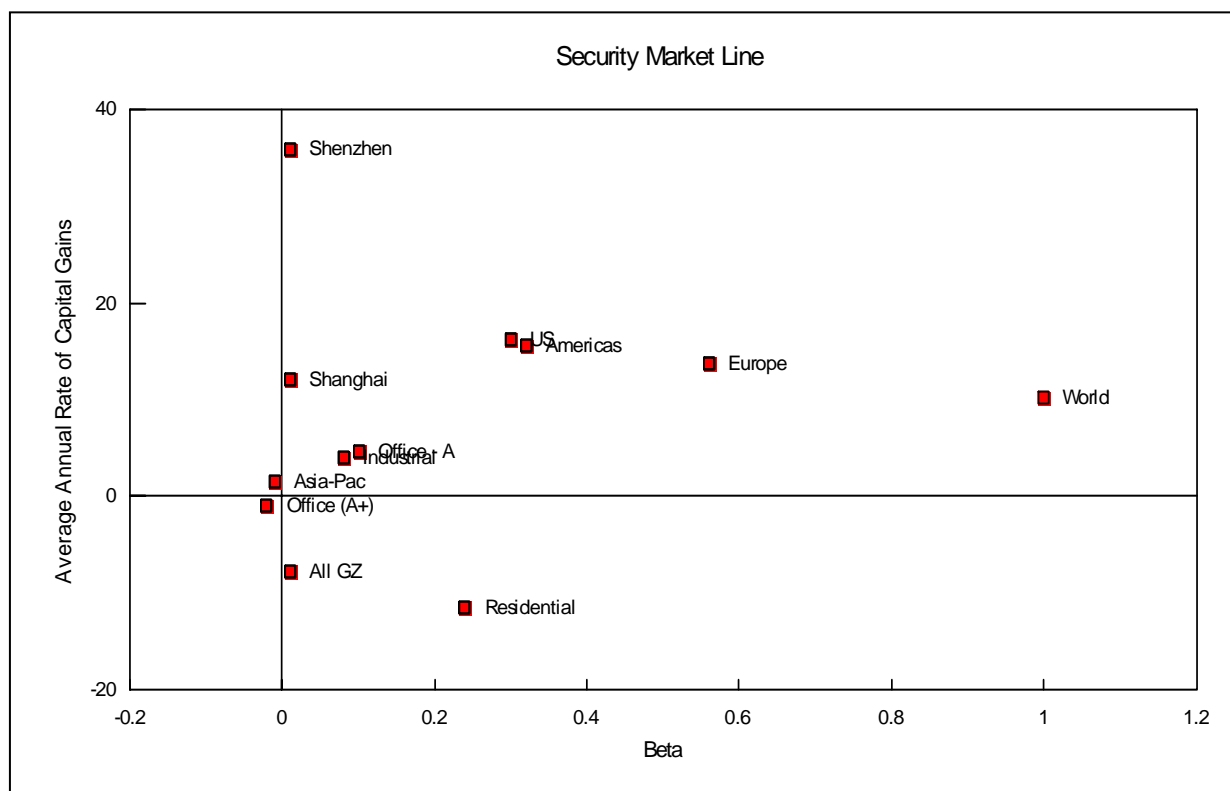


Figure 1 - Security Market Line of Property Investment in Guangzhou and Stock Investment in the World and China

The analyses show that property in all sub-sectors of Guangzhou have been yielding its investors returns less than what the market risk they have taken. Though it has to be admitted that the quantitative analyses have been made on the basis of a set of data that are crude in the sense that they are simple averages of all transactions within their respective sectors. However, before some kinds of property indices are constructed in some ways similar to, say, the transaction-based indices prepared by the Rating and Valuation Department in Hong Kong, this is perhaps the most comprehensive set of data concerning property transaction ever available anywhere in China. Nevertheless, it illustrates that if judged by itself, property investment in Guangzhou yields total-risk-adjusted returns far less than Hong Kong. That implies that if one has to invest in properties in China and if history repeats itself, there are far better opportunities in China Hong Kong than China Guangzhou. But on the other hand, if historical property investment in Guangzhou is judged from the point of view of a global stock investor, there is far too much unsystematic risk. The relatively small amount of systematic risk means that Guangzhou property returns may not be that low as it first appears to be. Furthermore, the low correlation with other assets does provide Guangzhou properties very good potential for inclusion into an otherwise stock portfolio for diversification purpose.

4. Conclusions

Based on the Security Market Line methodology, the CAPM-based discounting rate to be used for different property sectors in Guangzhou can be evaluated. The determination of appropriate discounting rate is crucial to the NPV calculations. Yet, NPV is all but one factor

to consider in investment decision-making. Sometimes, project choice is more influenced by such factors as corporate strategies, resources constraint or a common thread with existing activities than a rational risk analysis. In the case of China, the decision to invest in properties could have easily been the result of herd instinct or benchmarking. The temptation of following the crowd to participate in perhaps the world's largest potential market could just be too great to resist. This is especially so when property investment in China is considered as part and parcel of an internationally diversified portfolio. However, because the cost of information could be prohibitive, decisions could have been wrongly made due to the "gut feel" discounting rates being too high or too low. This study demonstrates how one property consultant firm in Guangzhou has been endeavoring to provide investors more value for their consultancy fees with a rational and systematic approach to risk evaluation.

This risk evaluation approach is however a crucial step to provide professional advice to potential investors of China properties. GDP per capita in China has been growing at enviable speed, from 8,411 Yuan in 1992 to 24,000 in 1997. That is almost threefold increase in six years, or 25% increase per annum on average. If China is to repeat that enviable growth, there has to be a corresponding provision of improved and additional space in the office and industrial sectors to sustain her economic development. Following the reform of the banking sector in China and the Asian financial turmoil, there may perhaps more dependence on private finance initiative as banks may not be as willing to lend as in the past, even if they have the money to do so.

A major source of capital may come from the REITs, of which one example has been quoted earlier in this article. It is reported (*Forbes International*, October 5, 1998) that REITs are gaining acceptance in many places of the world. Many investors find REITs attractive as they are more liquid than direct property investment. Their prices are less volatile than property shares which, in the case of Hong Kong, have often been regarded as surrogate for direct property investment. In addition, REITs offer the advantages of high dividend yields and tax breaks. The *Asian Wall Street Journal* (December 3, 1998) also reports a growing number of Asian-based REITs. REITs have been set up in Thailand and Japan where bans on foreign ownership of such trusts have been lifted. Singapore is planning for initial launch of REITs in 1999. Other than REITs, insurance companies, pension funds and housing and loan groups have stepped up their real estate lending, whilst transactions in commercial mortgage securities diminished. Most pension funds admit that their target real estate allocations are not fully funded (McDowell and Souza, 1997). Many of these institutional investors have begun their international search for investment opportunities, and have considered the Asian and China markets for their portfolios.

However, if China is to get a pie of the institutional investors' money, property consultants need to convince their clients their feasibility studies have been undertaken based on sound and well-established methodology. An understanding into a rational and systematic quantification of risks in the form of discounting rates could very much enhance the identification of the peculiarities of investing in the China markets. Only then could the unique social economy and institutional framework of the China markets be better understood and quantified to facilitate investment-decision making.

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Appendix A - Annual Rates of Capital Gains of Guangzhou Properties

(unit: %)

Year-Qtr	Property Investment					Stock Investment	
	Residential Property	Office (Super A)	Industrial Property	Office (Grade A)	Total Property Market	Shenzhen Stock Exchange	Shanghai Stock Exchange
1992-4	117.74				117.74	-10.9	11.1
1993-1	7.78				8.64	30.8	18.6
-2	-20.11				-2.56	-17.1	8.8
-3	24.15			24.36	16.49	-2.7	-11.6
-4	-24.83			-8.53	-18.53	-6.4	-6.3
1994-1	6.60			10.58	6.71	-25.4	-15.5
-2	-1.80	13.47		8.10	6.50	-32.5	-33.4
-3	-6.03	0.86		-18.85	9.82	57.0	68.6
-4	-4.54	16.03		-3.35	-20.92	-25.3	-18.1
1995-1	-3.85	-25.68		28.60	-7.36	-3.8	-0.1
-2	-9.85	7.12		-27.44	-13.34	-7.8	-2.5
-3	1.21	-18.16	23.44	27.50	8.92	6.8	14.6
-4	2.17	12.37	18.99	3.85	-5.76	-15.0	-23.1
1996-1	-4.84	-3.37	1.36	-8.06	4.12	-1.1	0.2
-2	0.34	-8.69	1.34	-12.58	-5.62	71.2	44.5
-3	-6.34	11.08	-12.49	16.99	-4.34	39.2	8.9
-4	-2.34	33.14	14.25	1.74	14.52	22.7	4.7
1997-1	3.24	-21.02	-33.18	4.32	-13.52	33.1	34.6
-2	3.84	8.16	37.37	-0.31	3.72	-2.3	1.3
-3	10.57	10.47	38.43	-19.12	1.73	-22.3	-12.2
-4	-8.09	3.51	-18.05	-3.59	-13.51	15.3	8.8
1998-1	-5.53	3.98	16.59	3.04	9.17	-0.6	4.1
Average	3.61	2.70	8.00	1.44	4.66	4.67	4.81
SD	27.40	15.21	22.68	15.70	27.42	27.45	22.77
CV	7.58	5.63	2.83	10.94	5.88	5.87	4.73

SD: standard deviation; CV: coefficient of variation