RETURNS ON CHINESE RESIDENTIAL DEVELOPMENT PROJECTS
A PRACTICAL INVESTMENT EVALUATION PROCEDURE DEVELOPED FOR THE ANALYSIS OF
CHINESE RESIDENTIAL DEVELOPMENT PROJECTS BASED ON MODERN FINANCIAL
ECONOMIC NORMS

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Submitted to the Department of Urban Studies and Planning in
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MASTER OF SCIENCE IN REAL ESTATE DEVELOPMENT

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Abstract
Since late 1990s, Chinese real estate has been experiencing rapid growth, especially in the commercial
housing sector. This phenomenon is mainly supported by China’s housing privatization policy
implemented in the mid-1990s and its strong GDP growth for the past 15 years. Chinese citizens are now
able to purchase their housing units directly from the market with financing offers from major domestic
banks. These days, real estate development—residential development in particular—is perceived in China
as one of the proven vehicles “to get rich overnight.” An increasing number of companies, including some
large international real estate developers, are participating in the Chinese real estate development market.
New players entering the market have been escalating the competition, which requires real estate
developers to be highly objective and practical when evaluating their residential real estate development
investments.

After describing and criticizing the current methods of calculating residential real estate development
returns in China, I argue in this thesis that, based on modern financial economic norms, a practical
investment evaluation procedure can be developed for analyzing Chinese residential development projects.

The new procedure is a practical application of a fundamental principle in finance: the NPV
investment decision rule. This rule requires that, in order to make sound investment decisions, investors
should maximize the NPV across all mutually exclusive alternatives and never choose an alternative in
which NPV<0. The new real estate development investment evaluation procedure encompasses four steps:
(1) projecting cash flows; (2) calculating the present value of the stabilized property; (3) calculating the
present value of total development costs; and (4) calculating the expected return on development
investment, or calculating the maximum land purchase price.

I use the Hainan Luxury Vacation Home Development in Haikou, Hainan, China, as case study to
demonstrate the fundamental differences between current practices and the proposed procedure. My
intention is to thoroughly clarify how applying the NPV rule takes into account some of the unique
features of real estate development investments, such as time-to-build, intensive use of debt financing, and
phased risk regimes.

In the final part of the study, I conclude that current practices of real estate development return
calculation fail to reflect these unique features of development investments. With the application of the
NPV rule, the proposed financial procedure makes real estate development evaluation analysis more
practical. The new procedure is a simple yet powerful financial analytical tool that enables developers to
comprehensively exam the expected return on their development investments. I also recommend that,
because the procedure is based on fundamental principles of modern finance, it should become the
standard way of evaluating real estate development investments.

Thesis Supervisor: Professor David Geltner
Title: Professor of Real Estate Finance
To

My Parents, My Wife, and My Son
Acknowledgments

I have been most fortunate to have Professor David Geltner as my thesis advisor. He provided sharp advice on how to approach the problem at the very beginning of my study. His penetrating comments have led to revisions and clarifications of the real estate financial theories applied here, which greatly improved this thesis. He was also helpful in narrowing down the area of study during my thesis preparation. Professor Geltner has been most gracious with his support, for which I am greatly indebted.

During my initial case study and data collection in China, many people provided me with useful information. I give special thanks to Liu Hongyu, Professor at Tsinghua University; Chen Feng, Chairman at Hainan Airline Group; Lim Mingyan, CEO at CapitalLand (China) Holdings, Ltd.; and Wu Yong, CEO at Anhui Worldbest Real Estate Development Co., Ltd.

Many of my friends have contributed ideas to this study. I especially thank Zhang Jie and Li Weijian in China, Berni Ai-kou in California, and Wallace Cheng in Hong Kong, without whose knowledgeable help I could not have written this thesis.

My underlying gratitude also goes to my parents, who have given me financial and moral support for many years, making it possible for me to study in the United States. Finally, I thank my wife Alice Wang, who has shared with me the seemingly endless hours of writing. Without her full support, I would never have been able to complete this work.
# Table of Contents

Abstract .......................................................................................................................... 2  

Acknowledgments ........................................................................................................... 4  

Chapter 1: Introduction ................................................................................................ 7  
  An Overview of the Residential Real Estate Market in China ................................... 8  
  China’s Housing Privatization Policy and Its Impact on Residential Real Estate .......... 8  
  The Process of Purchasing a Housing Unit in China ................................................. 10  
    The Characteristics of Land Ownership in China .................................................. 10  
    The Housing Mortgage System ............................................................................. 11  
    The Developers’ Role in the Housing Mortgage System ........................................ 12  
  The Typical Process of a Residential Development in China ................................. 13  
    The Typical Business Structure of a Development Company in China .................. 14  
    Land Acquisition ...................................................................................................... 15  
    The Government Approval Process ........................................................................ 16  
    Project Financing ...................................................................................................... 17  
    Design and Construction .......................................................................................... 18  
    Unique Risks in the Chinese Real Estate Development Investment Market .......... 19  

  A Brief Introduction to the Hainan Luxury Vacation Home Development Project ........ 23  
  Current Practices of Return Calculations ................................................................... 24  
  Problems with Current Return Calculation Practices ................................................. 26  
    The Time Factor in Investment Outflow During the Development Phase ................ 27  
    Debt Financing for the Construction Phase ............................................................ 27  
    The True Value of the Finished Development Project ............................................ 28  
    Entrepreneurial Cost in Real Estate Development .................................................. 28  

Chapter 3: Residential Development Return Calculation Based On Modern Financial Economic Norms ................................................................. 30  
  The Modern Theory of Financial Analysis of Real Estate Development Investments .... 30  
    The Basic NPV Rule .................................................................................................. 30  
    The Application of the NPV Rule in Real Estate Development Investments ............ 31  
    The Benefits of Applying the NPV Rule ................................................................. 34  
    The General Procedure for Evaluating Residential Development Investments ....... 36  
    Step 1: Projecting Cash Flows .................................................................................. 36  
    Step 2: Calculating the Present Value of the Stabilized Property ............................ 37  

5
Step 3: Calculating the Present Value of Total Development Costs ...................... 38
Step 4: Calculating the Expected Return on Development Investment
or Calculating the Maximum Land Purchase Price........................................... 39
An Application of the New Financial Evaluation Procedure............................ 40

Chapter 4: Summary ...................................................................................................... 44

Appendix A: A Case Study—The Hainan Luxury Vacation Home Development,
Haikou, Hainan, China........................................................................................................ 46
Background Information.............................................................................................. 46
Project Description........................................................................................................ 46
Revenue and Cost Analysis........................................................................................... 49
Project Pro-Forma......................................................................................................... 51

Appendix B: Provisions On The Administration Of The Development
And Operation Of Urban Real Estate........................................................................ 52

Bibliography ...................................................................................................................... 61

Websites Visited ........................................................................................................... 61

Interviewees .................................................................................................................... 61
Chapter 1: Introduction

Since the late 1990s, China’s real estate industry has been experiencing rapid growth, especially in the commercial housing sector. For example, the total gross floor area (GFA) of commodity housing sold was 93 million square meters during the first eight months of 2002, an increase of 22.3% from the same period in 2001. Even conservative estimates suggest that there will be growth in housing of about 15% for the next few years. China expects to build between 486 million and 549 million square meters of floor space annually in the first twenty years of the twenty-first century. In 2001 alone, $59.4 billion was spent on urban housing. Numerous Chinese real estate developers are accumulating extreme wealth in the lucrative residential real estate market.

Table 1: The Sales Record of National Commodity Housing Units (January–August 2002)

<table>
<thead>
<tr>
<th></th>
<th>Total GFA Sold (mil sq M)</th>
<th>Sales Value (USD billion)$^4$</th>
</tr>
</thead>
<tbody>
<tr>
<td>Commodity Housing</td>
<td>93.00</td>
<td>259.88</td>
</tr>
<tr>
<td>Growth Rate</td>
<td>22.30%</td>
<td>25.30%</td>
</tr>
</tbody>
</table>


This chapter is intended to provide general background information on the residential real estate market and the overall mechanisms of residential real estate development.

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$^4$ Unless otherwise noted, the currency conversion rate used throughout this paper is USD 1 = RMB 8.3.
An Overview of the Residential Real Estate Market in China

Compared with the United States and other developed markets, China’s real estate industry is immature. Although there are problems, ranging from the not-so-transparent laws and regulations, to the bureaucratic agencies, to the complicated taxation system, China has made huge progress since it opened its doors to the outside world in the late 1970s and embraced a market-oriented economy after being ruled under a centrally controlled system for almost thirty years. Few people in China would have thought about owning their homes ten years ago. Now, with private home ownership approaching 73% in urban areas, China is perhaps the most successful country in the world in terms of having developed a private housing market in such a short period of time.

Much of today’s active residential real estate market is a result of the implementation of the housing privatization policy initiated by the central government in the late 1990s.

China’s Housing Privatization Policy and Its Impact on Residential Real Estate

Until 1999, most people in China’s urban areas had lived under a welfare housing system in which the government provided nearly free housing for them. All employees from government agencies, academic and public institutions, and state-owned companies received allocated housing from the government or their work units. In March 1998, Chinese Premier Zhu Rongji introduced a package of reforms, including a series of housing reforms that were intended to stimulate the domestic economy. He declared that subsidized housing traditionally available to Chinese workers would be phased out and that workers would be encouraged to buy their own homes or pay rent closer to real market prices. The reforms called for workers to use their savings,
along with the one-time housing subsidies they received, to purchase their own houses. The government announced in August 1999 that all vacant residential housing units built after January 1, 1999, were to be sold, not allocated. Since then, the private housing market has experienced tremendous growth.

Actual investment in China's real estate development in 1999 was reportedly at 401 billion Ren Min Bi (RMB) (about U.S. $48.43 billion), up about 10% from 1998. From January to November 2000, the total investment in the residential real estate sector reached RMB 374.4 billion (about U.S. $45 billion). Meanwhile, 410 million square meters (4.41 billion square feet) of residential housing were built in 1999, an increase of 19.6% from the previous year. China Securities, a Chinese magazine, reported that China would build 486 million to 549 million square meters (5.23 billion to 5.91 billion square feet) of new residential houses every year during the first twenty years of the twenty-first century. In 2000, commercial housing construction increased 17.9%, finished construction area increased 22.3%, sales volume increased 38.8%, and housing purchases increased 44.5% over the same period in 1999.

Xie Jiajin, the director-general of the Department of Housing and Real Estate in the Ministry of Construction, reported at the January 9, 2001, National Housing Reform Conference that over 80% of the allocated public housing in China had already been sold to workers or employees. A

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new property ownership structure, which is dominated by private ownership along with other types of ownership forms, has taken root in China.

A study completed by Sinomonitor magazine and the British Market Research Bureau (BMRB) indicated that, from 1999 to 2002, the percentage of homeowners in China’s urban areas rose 23 points, from 50% to 73%.\(^7\) There is no doubt that housing reform in recent years has boosted home purchases and construction in China.

### The Process of Purchasing a Housing Unit in China

#### The Characteristics of Land Ownership in China

Under the 1982 Constitution, urban land in China is owned by the State, and the collectives own the rural land. Since the local and central governments administer the rural collectives, it can be construed that all land ownership is under control of the State. However, an amendment to Article 10 of the Constitution, adopted on April 12, 1988, states that land-use rights may be transferred in accordance with the laws. Based on that statement, a land-use right becomes divisible from land ownership, thus making land-use rights likely to be privatized.\(^8\) Individuals can hold long-term leases for land use. They can also own buildings, apartments, and other structures on land, as well as own personal property.

Real estate sales in China take place in the form of a transfer of rights to use land. To obtain land-use rights, the land user must sign a land-grant contract with the local land authority and pay

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\(^7\) Zhongguo Jingji Shibao (China Economic Times), October 11, 2000.

a land-grant fee up front. The grantee will enjoy a fixed land-grant term and must use the land for
the purpose specified in the land-grant contract. Depending on the type and purposes of land use,
the maximum term of a land grant ranges from 40 years for commercial use, to 50 years for
industrial use, to 70 years for residential use. In fact, transfer of a land-use right has accounted for
most of the business activity in the primary real estate market in China.

A substantial tax advantage is available for Chinese citizens in the high-income bracket who
own their homes. People in this category are a small percentage, but are still comparable in
numbers to the entire population of Canada. Some people are buying additional homes just so
they can continue receiving the tax benefit.

The Housing Mortgage System

The current housing mortgage system in China just started in the late 1990s. Several cities
have enacted legislation and regulations to provide guidelines for mortgage processing of real
property. For instance, in Guangzhou, the local government published regulations handling
mortgages and required domestic mortgage lenders to be licensed by a government bank.

The maximum period of home loan repayment is thirty years. Prospective homebuyers are
normally required to pay down 20% of the purchase price from their own savings. It is not
unusual to see buyers put down as much as one-third or one-half of the cost of a new home in
cash, mainly thanks to the high saving rate among the population (about 45% in 2001) and limited
financing resources.
The biggest provider of home mortgage loans in China is the China Construction Bank (CCB). The housing loans made by the four state-owned commercial banks totaled RMB 355.6 billion (about USD $43 billion) in 1999. Of this total, RMB 217.2 billion (about USD $26.3 billion) went to real estate developers, and RMB 126 billion (U.S. $15.2 billion) went to the mortgage loan sector, accounting for about 35% of the country’s overall real estate loans in 1999. From January to November of 2000, home mortgage loans totaled RMB 296 billion (about U.S. $36 billion). Since the market is so new, most homebuyers do not have significant collateral to back up a loan, so most banks require borrowers to have a guarantor. Foreign lenders are not allowed into the home loan area at this time. But this will change after China’s accession to the World Trade Organization (WTO).

In addition to bank loans, city workers may also borrow money from the housing provident funds (Zhufang Gongjijing) if their companies or work units are participants of the funds. Employees may contribute 4% to 8% of their salaries into a fund. The employers then pay a matching 5% of payroll. The interest rate in the provident funds is usually lower than the rates offered by banks. By September 2000, 67.77 million employees nationwide had joined housing provident funds.

The Developers’ Role in the Housing Mortgage System

Developers play a crucial role in China’s housing mortgage system. In most cases, lending banks require developers to guarantee the loan obtained by individual homebuyers. In the event of

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default, developers are obligated to buy back the property at pre-agreed prices in order to be released from the guarantor status. Developers then have the opportunity to resell the property under default to a new homebuyer at the market rate.

With this arrangement, developers reach agreements with lending banks on the housing mortgage terms for their entire development project before they start selling housing units on the market. Individual homebuyers do not usually have the option to choose their own lending banks. As Wu Yong, CEO at Anhui Worldbest Real Estate Development Co., Ltd., pointed out during an interview with this writer, one of the major challenges that lending banks face today is identifying qualified developers to whom they can lend their money. Due to the excessive amount of capital looking for profitable investment, most successful residential real estate developers in China with good track records have no problem with finding lending banks for their projects.

**The Typical Process of a Residential Development in China**

Before we focus on evaluating financial returns in residential development projects, it is important to understand how a residential development is typically carried out in China. This section covers six major issues that residential developers have to face in each of their projects: (1) the typical business structure of a development company in China; (2) land acquisition; (3) the government approval process; (4) project financing; (5) design and construction; and (6) unique risks in the Chinese real estate development investment market.
The Typical Business Structure of a Development Company in China

Similar to the practices in the U.S. real estate development industry, a project-based business entity is formed for each development project. This business entity is usually registered, with its legal liability limited to the amount of registered capital.

The forms of ownership can be State-owned enterprises (SOEs), public enterprises, private enterprises, or any combination of the three in a joint venture. Most large real estate developers in China today are SOEs that are backed by State funds. In order to improve their operating efficiency, some of the SOEs are changing into enterprises that are collectively held by a group of individuals. This is achieved by the SOEs issuing stocks to their current employees or to outside private enterprises.

There are only a few publicly owned real estate development companies in China. Shenzhen Wanke Real Estate Development Co., Ltd., is one of the most successful public residential real estate development enterprises. It is similar to a public real estate investment trust (REIT) in the United States.

Thousands of private real estate development companies exist in China’s real estate market. As the market is getting more and more regulated by the government, many of the private developers are experiencing difficulties in accessing investment funds and acquiring land at attractive prices. On the other hand, a few private developers have achieved huge business success by offering high-quality building products.
Land Acquisition

In precise terms, when purchasing a piece of land in China, developers are paying for the land-use rights rather than for land ownership. As stated earlier, all land ownership is under control of the State. There are two forms of transferring land-use rights in China: allocated land-use rights and granted land-use rights.

Many SOEs own allocated land-use rights. With a minimum annual usage fee that varies in different regions, SOEs virtually enjoy free use of the land. There is normally no expiration date in a land-use rights contract. Allocated land-use rights are generally not transferable. Local governments reserve the power to cancel allocated land-use rights without compensation to the granted entities. Although this form of land acquisition minimizes the land cost to real estate developers, it presents high development risks—in particular, to small-scale residential developers. In the past, this form of land acquisition also encountered problems when rights holders needed financing for their projects. To avoid development risks associated with allocated land-use rights, some developers managed to convert allocated land-use rights to granted land-use rights after paying the land grant fee to the local governments.

Developers can acquire granted land-use rights by signing legally binding contracts with local governments. There are fixed terms in each contract. Developers need to pay an agreed land grant fee to local governments. Granted land-use rights are transferable if one pays the transfer tax. The granted land-use right may also be mortgaged. If the government decides to cancel the granted land use right, the granted entities have to be compensated, based on the market value of the
In summary, the process of land acquisition in China is rather complicated under the current Chinese legal system. The process not only affects project financing, but also presents different levels of development risks. Under a recent government regulation called the “Regulation on Tender, Auction, and Listing of Land,” which was implemented on July 1, 2002, more and more developers today own granted land-use rights.

The Government Approval Process

A typical residential development project needs fifteen approval stamps from various government agencies. This process is not only time-consuming but also costly in many cases. Because of the still underdeveloped legal system in China, real estate developers face both obstacles and opportunities in the process of getting their development projects approved. Many local developers manage to maximize their land value by closely working with local government agencies. Getting a development project fully approved at the budgeted cost is one of the key upfront risks that each developer has to manage in the Chinese real estate development market.

Floor area ratio (FAR) and infrastructure readiness are the two major issues that developers have to face. Because many local government agencies lack specific knowledge about real estate economics, the FAR number is usually arbitrary and can be changed if the developer is able to present a convincing case, especially in smaller cities. Getting a higher FAR is one of the major ways that well-connected local developers maximize their development profits. The local
government and the developer usually share infrastructure costs related to a development project. The local government appoints qualified construction companies to build infrastructures for the development project. In many situations, infrastructure construction is delayed by lack of materials, scheduling conflicts, and other problems, which hurts the profitability of a development project.

**Project Financing**

Financing a residential development project is becoming more and more regulated by the government. Recent government policies have favored large real estate developers. Under the current banking rules, developers do not have access to bank loans if they have less than 30% of their development costs covered by equity.

Furthermore, tight pre-sales policies prevent undercapitalized developers from starting a project. Current regulations require that the structural roof of a building be completed before any legally binding pre-sales activities can take place.

Typically, there are two mechanisms to finance a residential development project in China. The first is land collateral financing. Lending institutions usually offer financing at a loan-to-value ratio (LTV) of 50%. For example, if the appraised value of a piece of land is $1,000,000, a developer should be able to get $500,000 from a lender to cover part of the construction cost. The land is then used as the collateral. In this case, the land-use right has to be granted through open bidding. If the land-use right is allocated to a developer, he or she may not
be eligible for this type of financing.

The second type of project financing is housing mortgage financing. As stated, developers can start pre-selling a building when the building’s structural roof is completed. Then they can get both the down payment from homebuyers and the balance from the lending institutions upon the close of escrow. This enables developers to complete building construction without additional equity.

Housing mortgage financing is the most widely used type of financing today because it gives more leverage to the developers. For example, the typical construction cost of a simple family house in China is about $460 per square meter. Developers can have the structural roof completed at a cost of $96 per square meter before they legally start pre-sales activities. Assuming that the cost of land is $80 per square meter of GFA, this gives an effective financial leverage ratio of nearly 62% to the project.\(^{11}\) Developers can achieve an even higher leverage if they manage to get the land-use right at a lower cost.

**Design and Construction**

As the commercial housing market is still relatively young and immature in China, there is a high demand for quality residential design professionals. With fast-growing competition, design quality becomes one of the critical success factors in residential development. Today’s Chinese homebuyers are looking for well-landscaped community living environments, open floor plans,

\[\frac{(460 - 96 - 80)}{460} = 61.7\%\]

\(^{11}\) It is calculated as
and efficiently integrated building systems. Good design also helps keep building construction costs down.

There are two unique characteristics of China's construction industry. The first characteristic is the short construction period. Due to low labor costs and 24-hour construction days, buildings in China are usually put up relatively faster than they are in the United States. The construction of a 450-unit 10-story apartment building can be completed in only nine to twelve months in China.

The second characteristic is the financial leverage of construction costs. Most construction companies have to start construction work with their own working capital. Although the government has been trying to prevent it, developers today are still able to find construction companies that are willing to finance as much as 80% of the total construction cost.

Construction management is critical to building quality. Many developers hire third-party professional construction management consultants to oversee the construction process.

Unique Risks in the Chinese Real Estate Development Investment Market

Compared to the U.S. residential real estate development investment market, there are several unique risks that China's developers have to manage: (1) risks from new unexpected government regulations related to residential real estate development; (2) location risks; (3) risks in the current housing mortgage system; and (4) risks of playing in a highly speculative real estate market.

Risks from New Unexpected Government Regulations Related to Residential Real Estate
Development. Because the Chinese real estate market is fast-growing and immature, one major risk that developers have to manage is the numerous new regulations initiated by various levels of government. For example, between April and August 2002, there were nine newly implemented government policies that affected the real estate development industry.

Table 2: Government Policies Issued Between April and August 2002

<table>
<thead>
<tr>
<th>Implementation Date</th>
<th>Policy Title</th>
<th>Issuing Department</th>
<th>Effect</th>
</tr>
</thead>
<tbody>
<tr>
<td>April 2, 2002</td>
<td>Circular on the Regulation and Standardization of Tender Fee</td>
<td>Development Planning Commission</td>
<td>Regulates tender fee</td>
</tr>
<tr>
<td>April 12, 2002</td>
<td>Circular on the Issue of Computation of Fees for Property Rights Registration</td>
<td>PMCC</td>
<td>Regulates registration fee</td>
</tr>
<tr>
<td>May 1, 2002</td>
<td>New Edition of Code of Measuring Practice (in Real Estate Properties)</td>
<td>PMCC</td>
<td>Standardizes common area computation</td>
</tr>
<tr>
<td>May 1, 2002</td>
<td>Circular on the Issue of Calculation of GFA and Property Ownership Registration</td>
<td>PMCC</td>
<td>Standardizes common area computation</td>
</tr>
<tr>
<td>May 1, 2002</td>
<td>Guidelines on the Implementation of Furnished Commodity Residential Property</td>
<td>PMCC</td>
<td>Encourages the delivery of furnished residential units</td>
</tr>
<tr>
<td>May 13, 2002</td>
<td>Circular on the Issue of Strengthening the Management of the Housing Provident Fund (HPF)</td>
<td>State Department</td>
<td>Strengthens the management of the HPF</td>
</tr>
<tr>
<td>June 24, 2002</td>
<td>Circular on the Establishment of a Monitoring System for the HPF</td>
<td>PMCC</td>
<td>Monitors the HPF</td>
</tr>
<tr>
<td>July 1, 2002</td>
<td>Regulation on Tender, Auction, and Listing of Land</td>
<td>Ministry of Land Resource</td>
<td>Starts open bidding for land-usage rights</td>
</tr>
<tr>
<td>August 1, 2002</td>
<td>Circular on the Management of Printing of Property Ownership Certificate</td>
<td>PMCC</td>
<td>Standardizes the issuance of property ownership certificates</td>
</tr>
</tbody>
</table>

Source: Centaline Research Department, 2002.

PMCC: The Peoples’ Republic of China Ministry of Construction.
**Location Risks.** In China, a development project could lose its location premium even before its completion, for two major reasons. The first reason is that China is urbanizing very rapidly. Since the late 1980s, the central government has been investing tremendous amounts of capital into infrastructures throughout the country. Creating better local transportation systems, including highways, bridges, and subways, is one major component of China’s infrastructure development. A developer’s expected return could be hurt if, for example, the local government decides to change the location of a new highway, placing it right next to the new apartment building that the developer is putting up. All the units affected by the new highway construction will have to be sold at discounted prices.

The second reason is that developers usually have very little control over what will happen on adjacent sites. In a fast-growing city in China, small- to mid-scale residential developments can easily be adversely affected by a new larger-scale development nearby.13

**Risks in the Current Housing Mortgage System.** As discussed earlier, developers in China are required to be the guarantors in the current housing mortgage system. With no established individual credit system, Chinese banks approve a mortgage application solely based on the income and employment history provided by the applicant. Since fraudulent documents are very easy to produce in China, the residential mortgage default rate is increasing, especially among second-home buyers. It has been estimated that 15% of China’s population currently own at least

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13 Small- to mid-scale residential developments are defined here as ones whose sites occupy less than half of a typical Chinese urban city block.
two residential properties.\textsuperscript{14} The risk of mortgage default, should they fail to rent out one of these, certainly exists. This puts developers at a higher risk of buying back the defaulted properties and reselling them at discounted prices in an underdeveloped second-hand housing market.

\textbf{Risks of Playing in a Highly Speculative Real Estate Market.} Due to the lack of comprehensive real estate market data in China today, developers are making their development decisions based on speculation and personal experience. As China’s residential real estate market is still experiencing double-digit growth, new players enter this market every day. Due to the fact that it takes time to construct buildings, the risk of missing the housing sales-price target is relatively higher than in more mature real estate markets such as the U.S. residential real estate market.

Chapter 2: Current Practices of Residential Development

Return Calculations

This chapter examines the current practice of calculating investment returns for residential development projects in China. To make a clear and consistent argument throughout this chapter and the next, the writer will introduce an actual case study to clarify how the numbers work. This case reflects the typical feasibility analysis process that many residential real estate developers use to make their business decisions. After demonstrating how the investment returns are calculated by today’s developers, I will argue that the current practice does not reflect some of the fundamentals associated with investment in residential real estate development projects. A more practical and scientific approach is required in the feasibility analysis of residential development projects in China, in order for developers to make more objective and competitive business decisions.

A Brief Introduction to the Hainan Luxury Vacation Home Development Project

This project is located in Haikou, Hainan, China. Hainan is an island at the very southern end of China. Perceived as the Hawaii of the Orient, it attracts over 11 million tourists from all over the world each year. Haikou is the capital city of Hainan Province. The available site is part of the CrownePlaza Hainan Spa and Beach Resort developed in early 2002 by the Anhui Worldbest Real Estate Development Co., Ltd. The resort, which is managed by the Six-Continent International
Hotel Management Group, is right on the beach with world-class amenities.

With a total area of 109 mu (approximately 18 acres), the site will be developed into a residential complex of (1) 55-unit luxury single-family vacation homes with a total GFA of 17,000 square meters, and (2) 133-unit vacation townhouses with a total GFA of 34,000 square meters. The entire complex will take about three years to complete, from the start of development planning to the end of sales. The targeted buyers are high-income individuals living and working in Beijing, Shanghai, and Hong Kong.

The current standard overall cost is $422 per square meter for luxury single-family house construction and $373 per square meter for townhouse construction. In Hainan, the high-end vacation home market is growing fast. A few comparable developments in the past couple of years have had a huge success in sales. The current sales price is $964 per square meter for luxury single-family vacation homes and $723 per square meter for townhouses. Complete information on this project can be found in Appendix A.

**Current Practices of Return Calculations**

There are two means that are widely used by Chinese real estate developers in their financial feasibility analysis for residential development projects. The first means is to calculate the overall expected return of a project. In the Hainan case, the total development cost is $24,661,152 with a

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15 The current standard overall cost is the hard cost in development. For budgeting purposes, the overall soft cost is approximately 15% of the hard cost, excluding development fees.
contingency of 8%. The gross income from sales is $38,921,500 with 5% vacancy. For SOE developers, who virtually obtain the allocated land-use rights for free, the total expected return for this development is about 58%. For developers who have to pay for the granted land-use rights at the pre-agreed price of $36,345 per mu, the expected project-level return is 36% over the entire development period. This represents an annualized project-level expected return of 10.8% over the entire development period, which is just above the hurdle rate of return that developers in China expect when using this return calculation method.

The second means of financial feasibility analysis for development investment is to calculate the expected return on initially invested capital. In most development projects in China, developers try to minimize their initial equity investment to 30% of total development cost, inclusive of land acquisition cost. As stated in Chapter 1, once the developers are entitled to the granted land-use rights, they can get a loan from lending banks at 50% LTV. Due to the relatively high land-cost-to-construction-cost ratio, the pre-sales of some of the housing units and the

\[
16 \quad \text{The total development cost is calculated as} \quad \frac{(422 \times 17,000 + 373 \times 34,000) \times 1.15 \times 1.08}{24,661,152} = 57.8\% \\
17 \quad \text{The gross income from sales is calculated as} \quad (964 \times 17,000 + 723 \times 34,000) \times 95\% = 38,921,500 \\
18 \quad \text{The total expected return is calculated as} \quad \frac{(38,921,500 - 24,661,152)}{24,661,152} = 57.8\% \\
19 \quad \text{This price was pre-negotiated with the local land bureau, which was authorized by the State to grant land-use rights to individual developers. The negotiation occurred prior to the implementation of a new government regulation that requires all State-controlled land-use rights to be granted through an open bidding system after July 1, 2002.} \\
20 \quad \text{The expected return at project level is calculated as} \quad \frac{(38,921,500 - 24,661,152 - 36,345 \times 109)}{24,661,152 + 36,345 \times 109} = 36\% \\
21 \quad \text{Most residential developers in China expect an annualized development return of 10% to 12% over the entire development period. For projects with over $100 million gross income from sales, the annualized development return over the entire development period could sometimes be as low as 5%}.
22 \quad 10.8\% \text{is calculated as} \quad (1 + 36\%)^{1/3} - 1 \\
23 \quad \text{The low cost of labor is the main reason for the high land-cost-to-construction-cost ratio.}
deferred payments on construction costs, developers are usually able to carry out an entire project with about 30% of the total development cost after land acquisition. In the Hainan case, assuming that the site acquisition cost is $3,961,605, the developer could then get a loan of $1,980,803 for the construction. If the developer manages to complete the entire project with a total equity investment of $7,398,346, the return on initial capital investment could be 133.7%, calculated as follows:

\[
\frac{(38,921,500 - 24,661,152 - 405,173 - 3,961,605) - 7,398,346}{7,398,346} = 133.7\%
\]

in which $24,661,152 is the total development cost; and $405,173 is the interest payment on a $1,980,803 3-year interest-only construction loan with an interest rate of 6.4%. The loan is amortized annually.

Most residential real estate developers using this return calculation method expect their initial capital investment to be doubled over the entire development period.

Problems with Current Return Calculation Practices

Although the two return calculation methods described above are widely used by residential real estate developers in China, they do not reflect some of the fundamentals embedded in real estate development investment. Compared to investment in existing real estate assets, investment...
in real estate development has its own set of characteristics that developers need to pay attention to when analyzing their projects’ financial feasibility and desirability. These characteristics include (1) the time factor in investment outflow during the development phase; (2) debt financing for the construction phase; (3) the true value of the finished development project; and (4) entrepreneurial cost in real estate development.

**The Time Factor in Investment Outflow During the Development Phase**

Most development projects in China take at least two years to complete. In current methods of analyzing financial feasibility, time value has not been taken into consideration by developers. Due to the nature of construction, the equity investment outflow occurs over time. In the Hainan case, equity investment will be drawn over five quarters instead of being drawn 100% at the beginning of the project. (For details, see the project pro-forma analysis in Appendix A.) Spreading out the equity over time will affect the opportunity cost of capital (OCC) in calculating returns, which will be discussed in detail in Chapter 3.

**Debt Financing for the Construction Phase**

Even when there is no construction loan, a financing effect exists in almost every development project. Especially in China’s real estate market, most developers try to defer construction payments to contractors as much as they can during the construction phase, in order to minimize out-of-pocket equity investment. This financing effect increases the financial leverage in development investment. Construction companies in turn charge around 2% of the
contract amount to reflect this financing effect. Because contractors are normally the senior lien holders according to Chinese regulations, the risk of their not getting paid by developers is minimal. In the Hainan case, the development costs, especially the hard costs, are spread out over nine quarters. Starting from the sixth quarter, revenues from pre-sales can cover development cost payments. (For details, see the project pro-forma analysis in Appendix A.)

The True Value of the Finished Development Project

The two return calculation procedures described above fail to evaluate the true value of the finished development project, which is the underlying asset value that developers create through the development process. Therefore, the two procedures, according to Geltner and Miller, “cannot possibly compute the NPV [net present value] of the project, either explicitly or implicitly. As a corollary, they fail to provide or even allow for an estimation of the expected return for the development project.”

Entrepreneurial Cost in Real Estate Development

None of the procedures described above take entrepreneurial cost into account. Real estate development is a complicated business practice with high risks, as discussed previously. Although most developers in China are not just fee-for-service providers, there is a high entrepreneurial cost that should be included in a project’s soft costs. In Western practice, this ranges from 5% to

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10% of the total hard costs. Once the entrepreneurial costs are included in the project budgets as the developers’ fees, they become almost guaranteed income for developers, so long as they meet job performance requirements. In the Hainan case, the developer’s fee will be between $1,072,224 and $2,144,448. Developers’ fees are usually paid in installments over the entire development period.

To solve all the problems discussed above, a new financial analysis procedure for evaluating residential real estate development investment will be introduced in the next chapter.
Chapter 3: Residential Real Estate Development Return Calculation Based on Modern Financial Economic Norms

In order to address the issues in current practice of evaluating residential real estate development investment, a new financial evaluation procedure is developed in this chapter. This procedure is based on the NPV rule that is an important part of the modern financial economic norms. In the first part of this chapter, the writer introduces the NPV theory and its application in real estate development investments. In the second part of this chapter, a general procedure for evaluating residential development investment is proposed based on the application of the basic NPV rule. In the last part of this chapter, the writer uses the Hainan case to demonstrate how the new procedure could be applied in practice.

The Modern Theory of Financial Analysis for Real Estate Development Investment

The Basic NPV rule

According to the modern financial theory, the NPV of an investment project is defined as “the present dollar value (PV) of what is being obtained (the benefit) minus the present dollar value of what is being given up (the cost).” Therefore,

\[ NPV_{\text{investment}} = PV_{\text{benefit}} - PV_{\text{cost}} \]  

(1)

The fundamental ideas behind this numerical expression are: first, a dollar today is worth

29 Geltner and Miller, Commercial Real Estate, p. 774.
30 Geltner and Miller, Commercial Real Estate, p. 226.
more than a dollar tomorrow, and second, a safe dollar is worth more than a risky one.\textsuperscript{31} As one of the most important concepts in finance, NPV helps investors to decide whether a project is worth more than it costs at the expected rate of return.

To make good investment decisions, investors should follow two NPV investment decision rules: (1) maximizing the NPV across all mutually exclusive alternatives, and (2) never choosing an alternative that has NPV < 0.\textsuperscript{32}

When calculating the NPV for an investment project, one needs to discount all cash flows to the present time (time 0) at the expected opportunity cost of capital (OCC), or, sometimes, it is called the expected rate of return (E\textsubscript{r}). Given all cash flows, one can calculate the NPV when E\textsubscript{r} is obtained, vice versa.

\textbf{The Application of the NPV Rule in Real Estate Development Investment}

Like its essential function in evaluating other forms of investments, the NPV rule can be applied to real estate development investments to help developers and investors make capital budgeting decisions. This rule ensures that, at the micro level, financial decisions are in the interest of the investors. Due to the fact that most Chinese developers are also investors in real estate development projects, they need to consider both financial feasibility and financial desirability.\textsuperscript{33} When an investing developer is the landowner at the same time, the NPV rule helps decide if undertaking the proposed development projects now could maximize the wealth of the investors.

\textsuperscript{31} Stewart C. Myers, Richard A. Brealey, Principle of Corporate Finance, 2003, p. 25.
\textsuperscript{32} Geltner and Miller, Commercial Real Estate, p. 227.
\textsuperscript{33} Geltner and Miller, Commercial Real Estate, p. 785.
landowner. When all the project cash flows are estimated, the NPV rule gives developers the expected rate of return from the real estate development projects.

When the NPV rule is applied in real estate development investments, each variable in the equation represents the present value of a specific component of the project cash flows. \( PV_{\text{benefit}} \) represents the present value of the time \( t \) property value \((t = 1, T)\), discounted back to time zero at the rate of \( E_{[rv]} \). So,

\[
PV_{\text{benefit}} = \sum_{t=1}^{T} \frac{V_t}{(1 + E_{[rv]})^t}
\]

in which \( V_t \) is the property value or the gross revenue received at time \( t \), \( E_{[rv]} \) is the expected return (going-in IRR\(^{34}\)) from investing in an un-levered stabilized property that is comparable to the one that is under development. In development projects, without complete pre-leasing or pre-sales arrangement, \( E_{[rv]} \) could be higher than the going-in IRR to reflect the speculative risk in real estate development projects.

\( PV_{\text{cost}} \) consists of two major components. The first component is the land value paid at the beginning of the development. The second component is the present value of the total development costs \( PV_{\text{development-cost}} \) occurred over development period. \( PV_{\text{development-cost}} \) can be calculated as follows:

\[
PV_{\text{development-cost}} = \sum_{i=1}^{T} \frac{L_i}{(1 + E_{[rd]})^i}
\]

\(^{34}\) IRR: Internal Rate of Return.
in which, $L_t$ is the total development costs occurred at time $t$, $E_{[rd]}$ is the OCC for development cost cash flows or the expected return on development financing. In latter case, $E_{[rd]}$ should be smaller than the actual borrowing rate that a lending bank charges. With the two components, $PV_{(Cost)}$ is calculated as:

$$PV_{(Cost)} = PV_{development-cost} + V_{(land)} = \sum_{t=1}^{T} \frac{L_t}{(1 + E_{[rd]})^t} + V_{(land)}$$

in which, $V_{(land)}$ is the land value at time zero. Therefore, the NPV for real estate development investments is computed as follows:

$$NPV_{(investment)} = \sum_{t=1}^{T} \frac{V_t}{(1 + E_{[rev]})^t} - \sum_{t=1}^{T} \frac{L_t}{(1 + E_{[rd]})^t} - V_{(land)}$$

In an efficient capital market, Equilibrium exits across the markets for stabilized property ($V_t$), development debt ($L_t$), and developable land ($V_t - L_t$). Otherwise, superior risk-adjusted returns (ex ante) could be made through investing in some combinations of stabilized property, development debt, or developable land. Presumably, equilibrium across markets drives market prices in these asset classes to be such that superior returns are not possible. Thus, the above relationship tends to hold. As a result,

$$\sum_{t=1}^{T} \frac{V_t - L_t}{(1 + E_{[rev]})^t} = \sum_{t=1}^{T} \frac{V_t}{(1 + E_{[rev]})^t} - \sum_{t=1}^{T} \frac{L_t}{(1 + E_{[rd]})^t}$$

in which $E_{[rev]}$ is the capital market’s required expected return to investments with risk comparable to that in the construction phase of a development project. The right-hand-side of the equation (6)
is, in some sense, the more fundamental side of the equation. The variables on the right-hand-side are more empirically observable in a more stable way; thus, represent "inputs" or "exogenous" variables. \( E_{rc} \) varies from project to project even if \( E_{rv} \) and \( E_{rd} \) are the same, simply due to differences in \( V(T) \), \( L(T) \), and \( T \), which change the degree of the effective (operational) leverage in a project. \( E_{rc} \) reflects the degree of the effective leverage that affects the risk in a development project.

Based on the second half of the NPV rule, when given an expected return (\( E_{rc} \)) on a real estate development investment, developers can decide that the maximum land purchase price (\( \text{MAX}[V_{(land)}] \)) is when:

\[
NPV_{(investment)} = 0
\]

So, \( \text{MAX}[V_{(land)}] \) can be determined as follows:

\[
\text{MAX}[V_{(land)}] = \sum_{i=1}^{T} \frac{V_i}{(1 + E_{rv})^i} - \sum_{i=1}^{T} \frac{L_i}{(1 + E_{rd})^i} = \sum_{i=1}^{T} \frac{V_i - L_i}{(1 + E_{rc})^i}
\]  

(7)

**The Benefit of Applying the NPV Rule**

Applying the NPV rule better reflects the unique features in real estate development investments, which are time-to-build, use of debt financing, and phased risk regimes.\(^{35}\) First of all, it reflects the fact that real estate products take time to build. With the NPV rule, both the benefit and the cost in a development project are measured in present, certainty-equivalent dollars. All cash flows incurred in a development project over time are discounted to one single point of time in order to make "apple-to-apple" comparisons.

\(^{35}\) Geltner and Miller, *Commercial Real Estate*, p. 786.
Secondly, it takes into account the use of debt financing during real estate development process. This benefit is especially important in Chinese real estate development projects. Development projects in China are highly leveraged financially. Although developers can only borrow limited amounts of capital from lending banks these days, the high leverage is achieved by other means, such as delaying payments to contractors at all levels, pre-selling housing units before finishing the construction, and completing a development project in phases. Many developers in China manage to carry out their development projects with the amount of investment equity that is just enough for land purchase. Applying the NPV rule helps effectively measure the financial leverage’s impact on the expected return on equity.

Lastly, the NPV rule more objectively measures investment risks in real estate development investments. Different levels of investment risks exist in development phases, lease-up phases, and stabilized operation phases. Using the correct discount rate in relation to the nature of each set of cash flows makes the return calculation for real estate development investments more realistic.

All of the benefits discussed above are based on one critical assumption, which is that the value of each parameter in the NPV rule application has to be as close to reality as possible. Otherwise, applying the NPV rule will not provide the reliable results that developers need to make business decisions.
The General Procedure for Evaluating Residential Development Investments

This section presents a practical procedure for the application of the NPV rule in residential real estate development investments. There are 4 major steps in this procedure. They are (1) projecting cash flows, (2) calculating the present value of the stabilized property, (3) calculating the present value of total development costs, and (4) calculating the expected return on development investment or calculating the maximum land purchase price. One common element in all steps is to make realistic assumption to avoid garbage-in-garbage-out mistakes.

Step 1: Projecting Cash Flows

Based on the duration of a development project, a complete set of cash flows can be projected on a monthly, quarterly, or yearly basis. The cash flows should be organized in three major categories: revenue, development costs and equity.

The revenue category includes all the incomes received over the entire development period. Most incomes are generated through pre-sale or pre-lease activities, which are allowed at some point before the completion of construction in residential development projects in China. Two critical assumptions have to be carefully made in the revenue projection. One assumption is the time when the pre-sale or pre-lease can start based on the estimated speed of construction and relevant government regulations. According to Chinese laws, developers are not allowed to pre-sell or pre-lease their buildings before the completion of the structural roofs. This is a government regulation that has been implemented since July 2002. The other assumption is the sales or leasing price. Normally, housing units under construction are sold or leased at discounted
prices. The discount rate ranges from 10% to 30%.

The second cash flow category is the development costs including hard costs and soft costs. Hard costs cover all the payments made to construction contractors at each point of time. One difficulty in estimating hard costs is projecting cash outflows related to construction change orders that are universal in every building construction process. One way to manage this issue is to negotiate lump sum contracts with cost savings incentives offered to construction contractors. In soft cost, the financing cost of a construction loan should not be included when there are construction loans involved in order to avoid double counting in the financial costs of a construction.

The third cash flow category is the equity flow. It is essentially the balance between the previous two categories. It indicates either the equity required from investors or profit contributed to investors at each point of time over the development period.

All cash flow projections discussed above are on the before tax basis. Tax implication on real estate development return is beyond the scope of this study. In this study, the writer focuses on the financial analysis of residential development projects at the project level, rather than at the investor level.

**Step 2: Calculating the Present Value of the Stabilized Property**

Equation (2) is used to calculate the present value of the benefit of a development investment \( (PV_{\text{Benefit}}) \). To obtain this value, the cash flow in the revenue category is discounted at the rate of
$E_{[rv]}$, which is the expected return (going-in IRR) on a un-levered investment in a comparable stabilized property.

To estimated $E_{[rv]}$, developers need to find out the net operating income (NOI), the market value (MV) of the comparable stabilized property and the growth rate (g). On for-sale residential properties, NOI is the annual rental income from the comparing property. MV is the observable sales price of the same property. g is the NOI growth rate estimated by developers. $E_{[rv]}$ is then calculated as follows:

$$E_{[rv]} = y + g = \frac{NOI}{MV} + g$$

in which $y$ reflects the yield from the stabilized property and is calculated as $NOI/MV$.

**Step 3: Calculating the Present Value of Total Development Costs**

Using equation (3), developers can calculate the present value of total development costs. Cash flow in development cost category is discounted at the rate of $E_{[rd]}$, which is the OCC for development cost cash flow or the expected return on development financing.

One way to estimate $E_{[rd]}$ is by observing the government announced short term intra-bank borrowing rate. For example, the intra-bank borrowing rate (base line interest rate) announced by Central Bank, China was 1.89% in December 2002.

Theoretically, $E_{[rd]}$ should be very close to short term intra-bank borrowing rate. The reason why the $E_{[rd]}$ is so low is because the development cost outflows are relatively fixed by contract and by pre-specified engineering plans.

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and because the variability and uncertainty that does exist in the construction cost outflows ("volatility") is generally not highly positively correlated with other financial and economic variables, but rather a function of engineering and design factors. Hence, the systematic risk is low.

**Step 4: Calculating the Expected Return on Development Investment or Calculating the Maximum Land Purchase Price**

In this step, the expected return on development investment \( (E_{rc}) \) can be calculated using equation (6). In the equation, \( (V_t-L_t) \) is the time \( t (t = 1, T) \) value in the third cash flow category. In order for a developer to consider a development investment, \( E_{rc} \) has to be greater than what is required by investors. In an efficient capital market, \( E_{rc} \) should be equal to or greater than the capital market’s required expected return to investments with the risk comparable to that in the construction phase of a development project. Maximal land purchase price can be calculated using equation (7).

When the land purchase price is given as \( V_{(land)} \), developers can also calculate the NPV of the development investment \( (NPV_{investment}) \) using equation (5). According to the NPV rule, a developer should undertake a development project only when \( NPV_{investment} \) is maximized. When \( NPV_{investment} \) is positive, \( E_{rc} \) should be calculated using:

\[
NPV_{investment} = \left( \sum_{i=1}^{T} \frac{V_i - L_i}{(1 + E_{(rc)})^i} \right) - V_{(land)}
\]  

(9)

However, when the land purchase price is given as \( V_{(land)} \), the IRR for the development project \( (IRR_{rc}) \) should be calculated using:
In summary, this four-step procedure enables developers to evaluate a residential real estate development investment more practically and objectively. It is consistent with the underlying theory of the NPV rule that is based on wealth maximization principle. It is fairly intuitive and easy to apply in practice. Further more, it explicitly identifies the expected return (OCC) to each risk regime of the investment: from development phase, to lease-up (if any) phase and to stabilized operation. The procedure could also be a financial tool for landowners to calculate the current opportunity value of the land assuming that the proposed development reflects the best use of the land.

This procedure should also be considered to become an industry standard for analyzing real estate development investment returns. Currently, developers are using various ways of calculating returns from development investments, which often creates difficulties in making business decisions.

**An application of the new real estate development investment evaluation procedure**

In this section, the new procedure for real estate development investment evaluation is applied to the Hainan case. Following the same steps introduced above, the developer will be able to objectively evaluate the expected return from this development project.

**Step 1: Projecting Cash Flows**

As shown in the project pro-forma analysis in Appendix A, all cash flows are projected on
quarterly basis. In revenue category, all incomes are from the sales of both single family and townhouse units. Pre-sale activities will start from the first quarter of 2005. It is estimated to take approximately five quarters to sell 95% of the 55 unit single-family homes and eight quarters to sell 95% of the 133 unit townhouses. In development cost category, both the amount and the schedule of each payment are estimated to reflect the leverage effect, especially in hard costs. In the Hainan case, the developer has decided to finance the project through housing mortgage system. Therefore, there is no construction loan borrowed during development period. Before tax Cash Flow (BTCF) in cash flow analysis shows that equity investment is required for the first five quarters. The development project is able to generate profits starting from the second quarter of 2005.

**Step 2: Calculating the Present Value of the Stabilized Property**

In order to make this calculation, the $E_{rv}$ for both single family homes and townhouses needs to be determined. Based on the information provided in the Hainan case and the projection on China’s CPI for 2003 (g=1%), the $E_{rv}$ is 8.2% for single family homes and 7.8% for townhouses. Discounting the quarterly revenues from single-family home sales at the quarterly rate of 2.0%, the developer is able to get the present value of the stabilized single-family properties.

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As discussed previously, developers in China can finance their development projects either through collateralized construction loan or through housing mortgage system. In latter case, developers have to be the guarantors of the housing mortgage.

The $E_{rv}$ for single family homes is calculated as: $\frac{NOI}{MV} + g = \frac{(1,800 \times 12)}{(964 \times 310)} + 1\% = 8.2\%$

The $E_{rv}$ for townhouses is calculated as: $\frac{NOI}{MV} + g = \frac{(1,050 \times 12)}{(723 \times 255)} + 1\% = 7.8\%$

Quarterly $E_{rv}$ is calculated as: $\left(1 + 8.2\%\right)^{\frac{1}{4}} - 1 = 2.0\%$ for single-family property and
properties, which is $13,527,836. Repeating the same process, the developer can compute the present value of the stabilized townhouse properties, which is $19,062,917. Therefore, the total present value of the stabilized property in this development is $32,590,753 ($PV_{\text{(stabilized)}}$).

**Step 3: Calculating the Present Value of Total Development Costs**

At first, $E_{rd}$ needs to be estimated. Currently, the intra-bank borrowing rate in China is 1.89%. Based on the level of risk, $E_{rd}$ should be close to 1.89%. In this case, 2.89% is used, which is 100 basis points over the intra-bank borrowing rate. Applying equation (3), the developer is able to compute the present value of total development costs, which is $26,290,540 ($PV_{\text{development-cost}}$). Again, the quarterly $E_{rd}$ needs to be used in this case.

In the calculation, developer's fee is also discounted because, in this case, the fee will be paid in installments as the construction moves forward. So, the present value of the developer’s fee is smaller than the contract amount, which is 5% of the estimated total hard cost.

**Step 4: Calculating the Expected Return on Development Investment or Calculating the Maximum Land Purchase Price**

Based on the meaning of equation (6), it can be re-written as:

$$\sum_{t=1}^{T} \frac{V_t - L_t}{(1 + E_{(rd)})^t} = \sum_{t=1}^{T} \frac{V_t}{(1 + E_{(rd)})^t} \cdot \sum_{t=1}^{T} \frac{L_t}{(1 + E_{(rd)})^t} = PV_{\text{benefit}} - PV_{\text{development-cost}}$$

Therefore, in the Hainan case,

$$(1 + 7.8\%)^{\frac{7}{4}} - 1 = 1.9\% \text{ for townhouse property.}$$

\(^{41}\text{This is an application of Equation (2).}\)
\[
\sum_{t=1}^{12} \frac{V_t - L_t}{(1 + E_{(re)})^t} = 32,590,753 - 26,290,540 = 6,300,214
\]

Solving the equation above for \(E_{(re)}\), the developer can compute the expected return on this development investment, which is 4.3% per quarter (18.4% per annum). This is under the assumption that the developer has to pay the maximal price ($6,300,214) for the site in an efficient capital market. This will make \(NPV_{(investment)}\) equal to zero.

However, as indicated in the Hainan case, the current market value of this site \(V_{(land)}\), which the developer purchased in 1998, is only $3,961,605.\footnote{V_{(land)} is computed as $36,345 \times 109 = $3,961,605.} This gives a positive NPV of $2,338,609. Therefore, the developer should proceed with this development now.

Using equation (10), the developer can compute the IRR for this development investment, which is 7.3% per quarter (32.5% per annum) over the entire three-year development period.\footnote{The IRR for development investment in the Hainan case is calculated as \(\sum_{t=1}^{12} \frac{V_t - L_t}{(1 + IRR_{(re)})^t} = 3,961,605 = 0.\) The value of \((V_t-L_t)\) can be found in project pro-forma in Appendix A.}
Chapter 4: Summary

Helped by a series of government-initiated urban housing reforms and by strong GDP growth nationwide, the commercial housing market in China has been experiencing double-digit growth for the past few years. As a result, residential real estate development in China has been a fast-growing business, with huge amounts of capital invested each year since the late 1990s. With a continuously growing demand, economists have predicted that the domestic demand for commercial housing in China’s urban areas will remain strong for the next eight to ten years.

To gain a sustainable competitive advantage, long-term developers need a practical way to evaluate real estate development projects in China. While enjoying the high returns, developers are facing more and more competition as new players enter China’s housing development market. One of the growing challenges for today’s Chinese developers is to objectively identify feasible development investment opportunities. When making investment decisions about a potential development investment, every developer has to address one fundamental question: What is the expected return on my investment?

The current methods of calculating expected returns for residential developments in China fail to reflect some of the unique features that exist in real estate development investment. These features include time-to-build, development cost financing, and phased risk regimes. Using the ways that development returns are analyzed now, developers could be led to make wrong business decisions. For example, in the Hainan case, the project-level expected return on the development was conventionally calculated as 10.8%. Thus, a developer who wanted a 20% return on
investment would have to walk away from this project. But, is 10.8% the true expected return in the Hainan case?

In order to answer this question, the writer extended a new financial return evaluation procedure that is based on NPV rules, one of the basic principles in modern economic norms. The procedure has four simple steps, as discussed in detail in Chapter 3. This powerful analytical tool enables developers to objectively evaluate the expected returns on their development investments. In the Hainan case, the project-level expected return is actually 32.5%, if one takes into account all the levels of risk embedded in the investment over the entire development period. Therefore, for a developer who want a 20% return from real estate development projects, the Hainan project should be a very attractive deal.

The new procedure not only provides a more objective approach to development return calculation within real estate practice, but also, from a broader perspective, allows investors to compare a real estate development investment opportunity with other forms of investments available to them in China, such as government bonds and stocks. In an efficient capital market, investors often have to choose one type of investment over others, based on the risk-adjusted OCC. Computed with this procedure, \( E_{rc} \) is the capital market’s required expected return from investments with risks that are comparable to those during the construction phase of a development project. Thus, for developers who are seeking equity investments from inexperienced real estate investors, this new procedure is crucial for building a relevant and plausible case.
Appendix A: Case Study—Hainan Luxury Vacation Home Development,

Haikou, Hainan, China

Background Information

Residential Real Estate Market in China

China residential real estate market has been experiencing steady growth since late 2000. The total investment in residential property has reached $59.6 billion, a more than 30% increase over 2001. The total residential GFA under development was about 677 million square meters in 2002. 2002 GDP Growth was 7.5 to 8%.\textsuperscript{44} Current population in China is 1.3 billion.

Hainan Province and Haikou City. Hainan is a 35,000 square meter island at the very southern end of China. The total population is Hainan is 7.11 million. Hainan's major local economy is tourism. Perceived as the Hawaii of the Orient, it attracts over 11 million tourists from all over the world each year. Haikou is the capital city of Hainan. With 245 square meters, its population is about 510,000.

Figure 1: Map of China, Hainan, and Haikou (from left to right).

Project Description

Site information

\textsuperscript{44} The National Bureau of Statistics, 2002.
The site is 100% flat with a total area of 109 mu (approximately 18 acres). It is within the city annexation with all infrastructures in place. From the site, it takes approximately 3 minute to the beach by walk, and by driving, 15 minutes to Haikou Meilan International Airport, 20 minutes to Haikou downtown, and 10 minutes to an 18-hole international golf course. There will be two new bridges built by the end of 2005, which will reduce the travel time from the site to haikou downtown by nearly 50%.

Figure 2: The site

Anhui Worldbest Real Estate Development Co. Ltd. (AWRED) currently owns the site. With its headquarter located in Shanghai, AWRED is an eleven-year old local real estate development company who has developed over 25 projects in China. The company was granted fifty five year land use right of the site in 1998 as part of a large parcel that was planned by AWRED for the CrownePlaza Hainan Spa and Beach Resort. The current market value of the land is $36,345 per mu.

The resort, consisting of one 5-star 1000-room hotel, one SPA house, one international conference center, 2 vacation apartment buildings and other high-standard amenities, was opened to public in early 2002. The resort locates right between the site and the beach. Currently,
Six-Continent International Hotel Management Group manages the resort.

Figure 3: CrownePlaza Hainan Spa and Beach Resort, Haikou, Hainan, China

The Development Program

As approved by the Haikou zoning authority, the site is for a residential development with 55-unit luxury single-family vocational homes totaling GFA of 17,000 square meters and 133-unit vocational townhouses totaling GFA of 34,000 square meters. The average GFA is 310 square meters for each single-family house, and 255 square meters for each townhouse unit.

The development is scheduled to start at the beginning of 2004. The entire complex will take about three years to complete, from the start of development planning to the end of sales. The construction of both single-family homes and townhouses will start after the site improvement is finished, including community infrastructures, major landscaping, and clubhouse (also used as on-site sales office).

Because the development is going to be developed by the AWRED, residents will have full access to all the amenities that belong to the CrownePlaza Hainan Spa and Beach Resort. Each resident will be offered club membership card with a yearly fee. The new complex is planned to
be a gated community with 24-hour security.

The targeted buyers are the high-income individuals living and working in Beijing, Shanghai and Hong Kong. As most buyers will only use their premises couple of months a year, they will be able to rent their units out for about ten months a year. Professional property management company will help homeowners search tenants, collect rents and maintain the properties. Currently, the comparable rental income is about $2250 per month for single family homes. After expenses, homeowners can get $1800 per month. For townhouses, the net operating income for homeowners is approximately $1050 per month.

AWRED has decided to sell all the units as their exit strategy for this project. As a real estate company specialized in residential and recreational property development, AWRED currently doesn’t hold any long-term investment properties. The management team has made their decision to focus their business on development for the next eight years in order to fully take advantage of the fast growing real estate development market.

Revenue and Cost Analysis

Projected Sales Prices

Hainan is still an emerging market for high-end vacation homes. A few comparable developments in the past couple of years have had a huge success in sales. Based on the comparable sales data below, the projected average sales prices are $964 per square meter for luxury single-family vocational homes and $723 per square meter for townhouses. These numbers
reflect the discounts offered to homebuyers during pre-sale period.

<table>
<thead>
<tr>
<th>Comparable Project</th>
<th>Date Completed</th>
<th>Sales Price (per m²)</th>
</tr>
</thead>
<tbody>
<tr>
<td>a. Costal Green villa development</td>
<td>July, 2002</td>
<td>$904 - $1,024</td>
</tr>
<tr>
<td>b. Sunny Western Coast Apartment</td>
<td>December, 2002</td>
<td>$481 - $602</td>
</tr>
<tr>
<td>c. Huangjin Coast villa development</td>
<td>March, 2003</td>
<td>$1,446</td>
</tr>
<tr>
<td>d. Vacation villas in Tsingdao, China</td>
<td>June, 2002</td>
<td>$964 - 1,205</td>
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</tbody>
</table>

Figure 4: Sales price comparable analysis

Construction Cost Analysis

The current standard overall hard cost is $422 per square meter for luxury single-family house construction and $373 per square meter for townhouse construction. Detailed soft cost analysis can be reviewed in the project pro-forma below. Development fee is 5% of the total hard cost.

Project Pro-Forma
## Project pro-forma

### Hainan Luxury Vacation Home Development, Haikou, Hainan, China

| Year | Q4 | Q1 | Q2 | Q3 | Q4 | Q1 | Q2 | Q3 | Q4 | Q1 | Q2 | Q3 | Q4 | Q1 | Q2 | Q3 | Q4 | Q1 | Q2 | Q3 |
|------|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|
|       |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |

### Land Area
- **71,706 Sq. M**
- **109 mu**

### Approved Zoning
- **Single Family**
- **Vacancy**
- **Subtotal**
- **Total**

### Approved Zoning Details
- **Land Area:** 71,706 Sq. M (109 mu)
- **Vacancy:** Single Family, Townhouse
- **Subtotal:**
- **Total:**

### Unit Price
- **Single Family:** $964,138
- **Townhouse:** $2,945,000

### Revenue
- **Total Revenue:** $38,301,800

### Development Cost

<table>
<thead>
<tr>
<th>Type</th>
<th>Year 2003</th>
<th>Year 2004</th>
<th>Year 2005</th>
<th>Year 2006</th>
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</thead>
<tbody>
<tr>
<td>Hard Cost</td>
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<td>12,327,836</td>
<td>12,327,836</td>
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<tr>
<td>Soft Cost</td>
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<td>10,062,917</td>
<td>10,062,917</td>
<td>10,062,917</td>
</tr>
</tbody>
</table>

### Total Cost
- **Total Hard Cost:** $22,533,500
- **Total Soft Cost:** $20,364,827

### Notes
- **Net Value of the Land:** $8,360,324
- **Before Tax Cash Flow:** $1,151,111
- **After Tax Cash Flow:** $1,151,111

###キッチンの詳細

###土地面積
- **71,706フット**

###許可区分
- **Single Family**, **Townhouse**

###計画
- **総計:**

###単価
- **単身家族:** $964,138
- **タウンハウス:** $2,945,000

###収益
- **総収益:** $38,301,800

###開発費

<table>
<thead>
<tr>
<th>項目</th>
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<th>2005</th>
<th>2006</th>
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<td>10,062,917</td>
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</table>

###総計
- **総ハードコスト:** $22,533,500
- **総ソフトコスト:** $20,364,827

###注記
- **土地の評価:** $8,360,324
- **課税前のキャッシュフロー:** $1,151,111
- **課税後のキャッシュフロー:** $1,151,111
Appendix B: Provisions on the Administration of the Development and Operation of Urban Real Estate

July 20 1998

STATE COUNCIL OF CHINA (Promulgated on July 20, 1998 by the State Council)

CONTENTS

CHAPTER ONE: GENERAL PROVISIONS
CHAPTER TWO: REAL ESTATE DEVELOPERS
CHAPTER THREE: REAL ESTATE DEVELOPMENT AND CONSTRUCTION
CHAPTER FOUR: REAL ESTATE OPERATION
CHAPTER FIVE: LEGAL RESPONSIBILITIES
CHAPTER SIX: SUPPLEMENTARY PROVISIONS

CHAPTER ONE: GENERAL PROVISIONS

Article One: In order to standardize the real estate development and operation behaviors, strengthen the supervision and administration of urban real estate development and operation activities and promote and safeguard the healthy development of the real estate sector, these articles are hereby formulated in accordance with the Urban Real Estate Administrative Law of the People’s Republic of China.

Article Two: Real estate development and operation referred to in these articles shall mean the behaviors of real estate developers who carry out infrastructure facilities construction, housing construction and transfer real estate development projects or sell or lease commercial housing on the state-owned land within an urban planning zone.

Article Three: Real estate developers and operators shall, in line with the principle of combining economic, social and environmental returns, develop an overall plan, have a rational layout, conduct comprehensive development and construct supporting facilities.

Article Four: The competent construction administrative authorities under the State Council shall be responsible for the work of supervising and administering the real estate development and operation activities throughout the country. The competent real estate development authorities of local people’s governments above the county level shall be responsible for the work of supervising and administering the real estate development and operation activities within their respective administrative jurisdiction. The competent land administration authorities of the people’s government above the county level shall be
responsible for the work of land administration related to real estate development and operation in conformity with relevant laws and administrative regulations.

CHAPTER TWO: REAL ESTATE DEVELOPERS

Article Five: To set up a real estate developer, in addition to the need to comply with the conditions for the establishment of an enterprise as stipulated in relevant laws and administrative regulations, the following conditions shall be met:
(1) The registered capital shall exceed RMB 1 million yuan;
(2) There shall be more than four full-time technical personnel with qualification certificates in the real estate major or the construction engineering major and more than two full-time accountants with qualification certificates; The people’s government at the provincial, autonomous and directly administered municipality level may, in line with local realities, formulate provisions that exceed the conditions contained in the above paragraph regarding the registered capital and technical professionals for the establishment of a real estate developer.

Article Six: To set up a real estate developer involving foreign investment, in addition to the need to comply with the provisions of Article Five of these rules, it shall also be imperative to go through relevant examination and approval formalities according to the provisions of laws and administrative regulations governing foreign-invested enterprises.

Article Seven: To set up a real estate developer, an application for registration shall be filed with the administrative authorities for industry and commerce of the people’s government above the county level. The administrative authorities for industry and commerce shall, within 30 days upon receipt of the application, grant registration if the conditions as stipulated in Article Five of these rules are met; reasons for the refusal of registration shall be explained if such conditions are not met. When the administrative authorities for industry and commerce examine the application for registration for the establishment of a real estate developer, they shall solicit the opinion of the real estate development authorities at the same level.

Article Eight: Within 30 days upon obtaining the business license, a real estate developer shall present the following documentation for recordation purposes to the real estate development authorities where the registration authorities are located:
(1) A copy of the business license;
(2) The articles of association of the enterprise;
(3) The certificate of investment verification;
(4) The identity certificate of the legal representative of the enterprise;
(5) The qualification certificates and employment contracts of its technical professionals.

Article Nine: The real estate development authorities shall, based upon the assets, technical professionals and development and operation performance of a real estate developer, verify and determine the grade of qualification and quality of a recorded real estate developer. The real estate developer shall, in line with the verified and determined grade of qualification and quality, undertake corresponding real estate development projects. The specific methods shall be formulated by the construction administrative authorities under the State Council.

CHAPTER THREE: REAL ESTATE DEVELOPMENT AND CONSTRUCTION

Article Ten: In determining a real estate development project, it shall be imperative to comply with the requirements as contained in the overall plan for land use, the annual plan for land for construction and the annual plan for urban planning and real estate development. If, in compliance with the State’s relevant provisions, the approval of the planning authorities is required, it shall be imperative to make a submission for the approval of the planning authorities and incorporate the project into the annual fixed assets investment plan.

Article Eleven: In determining a real estate development project, it shall be imperative to persist in the principle of combining renovation of existing areas with construction of new areas, attach importance to the development of sections where the infrastructure facilities are weak, traffic is jammed, environmental pollution is serious and dilapidated housing is centered, protect and improve the urban ecological environment, and protect historical and cultural legacy.

Article Twelve: The land used for real estate development shall be obtained by transfer, with the exception of cases whereby the provisions of laws and the State Council permit the adoption of the allocation approach. Prior to the transfer or allocation of the land use right, the urban planning administrative authorities and the real estate development authorities of the local people’s government above the county level shall present their written opinions regarding the following items and form one of the basis for the transfer or allocation of the land use right:

(1) The nature, scale and development tenure of the real estate development project;
(2) The designing conditions for urban planning;
(3) The requirements for the construction of infrastructure and public facilities;
(4) Definition of the property right of infrastructure facilities after completion; and
(5) The requirements for relocation compensation and resettlement of the project.

**Article Thirteen:** For a real estate development project, the equity fund system shall be established; the equity fund shall account for no less than 20% of the total project investment.

**Article Fourteen:** Development and construction of a real estate development project shall be accompanied by an overall plan for supporting infrastructure facilities and such a plan shall be implemented based on the principle of the underground portion having priority over the ground portion.

**Article Fifteen:** The real estate developer shall develop and construct a project in compliance with the purpose of land use and the time limit for development startup as agreed upon in the contract on the transfer of the land use right. Failure to start up the project development one full year after the expiry of the time limit agreed upon in the transfer contract may lead to the imposition of a land idling fee amounting to less than 20% of the payment for the transfer of the land use right; if development fails to start two full years after expiry, the land use right may be taken back without compensation, with the exception, however, of the situations in which delays are caused by force majeure, action of the government or relevant government authorities, or early stage work necessary for starting the development process.

**Article Sixteen:** The real estate project, developed and constructed by a real estate developer, shall conform to the provisions of relevant laws and regulations, technical standards for construction engineering quality, safety standards, construction engineering prospecting, designing and execution, and contractual stipulations. The real estate developer shall be responsible for the quality of a real estate project that it develops and constructs. Prospecting, designing, executing and supervising agencies shall undertaken corresponding responsibilities on the basis of the provisions of relevant laws and regulations or contractual stipulations.

**Article Seventeen:** A completed real estate development project can be delivered for use only after passing the acceptance test; no delivery for use shall be made without the acceptance test or without having passed the acceptance test. Upon completion of a real estate development project, the real estate developer shall file an application for the acceptance test with the real estate development authorities of the local people’s government above the county level where the project is located. The real estate
development authorities shall, within 30 days after receipt of the application for the acceptance test, organize such relevant authorities or agencies as engineering quality supervision, planning, fire prevention and civil air defense to conduct the acceptance test regarding contents involving public safety.

**Article Eighteen:** Upon completion of a cluster real estate development project like a small residential section, a comprehensive acceptance test shall be conducted in line with the provisions of the Article Seventeen of these rules and the following requirements:

1. The situation regarding the implementation of the urban planning and designing conditions;
2. The situation regarding the supporting infrastructure and public facilities as required by urban planning;
3. The situation regarding the acceptance test of the engineering quality of individual engineering projects;
4. The situation regarding the implementation of the relocation and resettlement; and
5. The situation regarding property management. If cluster real estate development projects like a small residential section are developed in phases, the acceptance test may be conducted in phases.

**Article Nineteen:** The real estate developer shall record the main events in the course of construction of a real estate development project in the real estate development project manual and submit it on a regular basis to the real estate development authorities for recordation purposes.

**CHAPTER FOUR: REAL ESTATE OPERATION**

**Article Twenty:** To transfer a real estate development project, the conditions as contained in Articles Thirty-eight and Thirty-nine of the Urban Real Estate Administrative Law of the People’s Republic of China shall be met.

**Article Twenty-one:** To transfer a real estate development project, the transferor and the transferee shall, within 30 days after the completion of the formalities for the change in registration of the land use right, present the contract on the transfer of the real estate development project to the real estate authorities for recordation.

**Article Twenty-two:** When a real estate developer transfers a real estate development project, if the relocation compensation and resettlement have not been finished, the rights and obligations in the original relocation compensation and resettlement contract shall accordingly be transferred to the transferee. The project transferor shall notify the relocated person in written form.
**Article Twenty-three:** A real estate developer pre-sells commercial housing shall comply with the following conditions:

1. It has paid all the fee for the transfer of the land use right and obtained the certificate of the land use right;
2. It has the construction engineering planning license and the execution license;
3. Calculated according to the pre-sold commercial housing made available, it has inputted over 25% of the total investment for construction of the project and determined the execution schedule and the date for completion and delivery; and
4. It has gone through formalities for pre-sale registration and obtained the commercial housing pre-sale permit.

**Article Twenty-four:** When applying for commercial housing pre-sale, a real estate developer shall submit the following documentation:

1. The certificates as stipulated in Sections (1) through (3) of Article Twenty-three of these rules;
2. The business license and the certificate of qualification and quality;
3. The engineering execution contract;
4. The floor-by-floor plane map of the commercial housing to be pre-sold; and
5. The program for the pre-sale of commercial housing.

**Article Twenty-five:** The real estate development authorities shall, within 10 days upon receipt of the application for commercial housing pre-sale, make a reply agreeing or disagreeing to the pre-sale. In case of agreement to pre-sale, a commercial housing pre-sale permit shall be issued; and in case of disagreement to pre-sale, reasons shall be explained.

**Article Twenty-six:** The real estate developer shall not make any untruthful advertisement; in the commercial housing pre-sale advertisement, the document number of the commercial housing pre-sale permit.

**Article Twenty-seven:** In the course of commercial housing pre-sales, the real estate developer shall show the commercial housing pre-sale permit. The real estate developer shall, within 30 days upon the signing of a commercial housing pre-sale contract, go to the real estate development authorities and the land administrative authorities of the people’s government above the county level where the commercial housing is located.
**Article Twenty-eight:** For commercial housing sales, both parties shall sign a written contract. The contract shall stipulate the floor space, usable floor area, price, delivery date, quality requirements, and property management method and default responsibilities for the commercial housing.

**Article Twenty-nine:** Should the real estate developer entrust an intermediary to act as agent for commercial housing sales, it shall issue an entrustment certificate to the intermediary. When the intermediary sells the commercial housing, it shall show to purchaser of commercial housing the relevant certificates for the commercial housing and the entrustment certificate for the commercial housing sales.

**Article Thirty:** The price for the transfer of the real estate development project and for the sales of commercial housing shall be negotiated through consultation between the parties concerned; however, the price for residential housing entitled to the State’s preferential policies shall be the government’s guidance price or the government-set price.

**Article Thirty-one:** The real estate developer shall, when the commercial housing is delivered for use, present the purchaser with the residential quality assurance certificate and the residential use instruction book. The residential quality assurance certificate shall clearly list the quality grade verified by the engineering quality supervisory agency, scope of warranty, period of warranty and the warranty agency. The real estate developer shall undertake the commercial housing warranty responsibilities in line with the provisions contained in the residential quality assurance certificate. Within the warranty period, if the original use functions are affected and losses are incurred to the purchaser due to the warranty of the commercial housing conducted by the real estate developer, the developer shall undertake compensation responsibilities according to law.

**Article Thirty-two:** After commercial housing is delivered for use, if the purchaser thinks that the quality of the major structure is sub-standard, an application may be filed with the engineering quality supervisory agency for re-verification. If verification proves that the quality of the major structure is indeed sub-standard, the purchaser has the right to ask for refunding; if losses have been incurred to the purchaser, the real estate developer shall under compensation responsibilities according to law.

**Article Thirty-three:** The purchaser of pre-sold commercial housing shall, within 90 days upon delivery for use of the commercial housing, go through the formalities for change in the land use right and the registration of house ownership; the purchaser of spot commercial housing shall, within 90 days upon signing of the sales contract, go through the formalities for change in the land use right and the registration
of house ownership. The real estate developer shall assist the purchaser of the commercial housing in going through the formalities for change in the land use right and the registration of house ownership and provide necessary certificates.

CHAPTER FIVE: LEGAL RESPONSIBILITIES

Article Thirty-four: In case of unauthorized engagement in real estate development and operation in violation of the provisions of these rules and without the business license, the administrative authorities for industry and commerce of the people’s government above the county level shall order the termination of real estate development and operation activities, confiscate the illegal gains, and decide at its discretion to impose a fine amounting to less than five times the illegal gains.

Article Thirty-five: In case of unauthorized engagement in real estate development and operation in violation of the provisions of these rules and without the certificate of qualification and quality or in excess of the certificate of qualification and quality, the real estate development authorities of the people’s government above the county shall order a time limit for corrective measures and impose a fine amounting to between RMB 50,000 yuan and RMB 100,000 yuan; if no corrective measures are taken after the deadline, the administrative authorities for industry and commerce shall revoke its business license.

Article Thirty-six: In case of delivery for use of housing which has not gone through the acceptance test in violation of these rules, the real estate development authorities of the people’s government above the county shall order a deadline for the developer to go through the formalities for the acceptance test; if such formalities are not gone through after the deadline, the real estate development authorities of the people’s government above the county shall organize relevant authorities and agency to conduct the acceptance test and impose a fine amounting to between RMB 100,000 yuan and RMB 300,000 yuan. If the acceptance test is not passed, punitive measures shall be taken according to the stipulations of Article Thirty-seven of these rules.

Article Thirty-seven: In case of delivery for use of housing which has not passed the acceptance test in violation of these rules, the real estate development authorities of the people’s government above the county shall order repairs within a deadline and impose a fine amounting to less than 2% of the total building cost of the housing delivered for use; if the act is serious in nature, the administrative authorities shall revoke the license; if losses are incurred to the purchaser, compensation responsibilities shall be undertaken; and, if serious casualties, accidents or other serious consequences have been caused and criminal offices committed, the criminal liabilities shall be investigated and dealt with according to law.
Article Thirty-eight: In case of unauthorized transfer of a real estate development project in violation of the stipulations of these rules, the land administration authorities of the people’s government above the county shall order a termination of the law-breaking activities, confiscate illegal gains and decide at its discretion to impose a fine amounting to less than five times the legal gains.

Article Thirty-nine: In case of unauthorized pre-sale of the commercial housing in violation of the stipulations of these rules, the real estate development authorities of the people’s government above the county shall order a termination of the law-breaking activities, confiscate illegal gains and decide at its discretion to impose a fine amounting to less than 1% of the already collected pre-payments.

Article Forty: When any State authorities employee neglect his duties, play favoritism and commit irregularities and abuse his powers, if criminal offenses are committed, the criminal liabilities shall be investigated and dealt with according to law; if such acts do not constitute criminal offenses, administrative punishments shall be meted out according to law.

CHAPTER SIX: SUPPLEMENTARY PROVISIONS

Article Forty-one: In terms of real estate development and operation on the state-owned land inside the urban planning zone and in terms of the exercise of supervision and administration of real estate development and operation, these rules shall be used as references.

Article Forty-two: The collectively-owned land within the urban planning zone can only be used for real estate development and operation after such land has been appropriated and converted into state-owned land according to law.

Article Forty-three: These rules shall go into effect as from the date of promulgation.
Bibliography


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Interviewees

Chen, Feng, Chairman, Hainan Airline Group
James C. Jao, CEO, J.A.O. Design International Ltd.
John Chen, Vice President, Merrill Lynch (Asia Pacific) Ltd.
Li, Weijian, Former Executive President, Hainan Airline Group
Lim, Mingyan, CEO, CapitalLand (China) Holdings, Ltd.
Liu, Hongyu, Professor, Tsinghua University
Wu, Yong, CEO, Anhui Worldbest Real Estate Development Co. Ltd.
Zhang, Baoquan, CEO, Beijing Jindian Real Estate Investment Group