Beyond Evergrande: Rethinking Real Estate Market in China and the USA for Long Term Growth and Sustainability

By

Jing Yang

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Authored by: Jing Yang
MIT Sloan School of Management
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Certified by: Walter Torous
Senior Lecturer of Center for Real Estate and the Sloan School of Management
Thesis Supervisor

Accepted by: Kelly Nixon
Senior Associate Director, MBA/MSMS Program
MIT Sloan School of Management

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ABSTRACT

The Evergrande crisis has exposed vulnerabilities in China's real estate market, prompting a critical reassessment of financing models, investment strategies, and regulatory frameworks. This thesis conducts a comparative analysis of the real estate markets in China and the United States, drawing insights from the Evergrande debacle and the US subprime mortgage crisis. By examining the evolution of financing mechanisms, investment approaches, land-use policies, and socio-economic factors influencing demand and supply, the research offers a holistic understanding of challenges and opportunities. Through synthesizing lessons from crises in both markets, the study provides recommendations for stakeholders, addressing financing strategies, regulatory reforms, risk management practices, and the pursuit of long-term sustainability. The findings contribute to the discourse on sustainable real estate development, offering valuable guidance for informed decision-making and resilient strategies amidst evolving market conditions and future challenges.

Thesis Supervisor: Walter Torous
Title: Senior Lecturer at Center for Real Estate and the Sloan School of Management

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Chapter 1 Introduction

1.1 Background

The real estate sector stands as a cornerstone of both the Chinese and US economies, playing a pivotal role in driving economic growth, shaping household wealth, and influencing employment trends. Particularly in the current context, amidst the unfolding Evergrande crisis, the significance of the real estate sector becomes even more pronounced, underscoring the need for comprehensive analysis and strategic interventions.

In China, the real estate market has been a primary driver of economic expansion since the inception of market reforms in the 1980s. Accounting for a substantial portion of the GDP, estimates range from 17 to 29 percent, reflecting its profound impact on economic activity. Direct investment in real estate surged to approximately RMB 7.5 trillion (US$1.18 trillion) in 2020, constituting a significant proportion of GDP. Moreover, the construction industry, intricately linked with real estate development, contributed a further RMB 7.3 trillion (US$1.15 trillion) to GDP in the same year.

However, the sector's growth has not been without challenges, as evidenced by the current Evergrande crisis. Evergrande Group, the leading real estate company in China, finds itself entangled in a web of debt obligations, signaling systemic vulnerabilities within the industry. The crisis serves as a stark reminder of the risks associated with high leverage and ambitious investment strategies, prompting a reevaluation of financing models and risk management practices.

In the United States, the real estate and housing market play an equally vital role in driving economic activity and shaping household wealth. Approximately 65% of occupied housing units are owner-occupied, with homes serving as a substantial

source of household net worth. Housing construction provides widespread employment, with fluctuations in the housing market having broader effects on the economy.

At the aggregate level, housing accounts for a significant portion of economic activity, with changes in the housing market exerting profound impacts on GDP. Residential fixed investment, including construction and remodeling, constitutes a substantial portion of GDP, while spending on housing services further bolsters economic activity.

Against the backdrop of the Evergrande crisis and its ripple effects, understanding the dynamics of the real estate sector in both China and the US is paramount. The crisis underscores the interconnectedness of global real estate markets and the imperative of implementing sustainable financing models and risk mitigation strategies. As stakeholders grapple with the fallout from the Evergrande crisis, a comprehensive analysis of the real estate sector's importance in both economies provides valuable insights for navigating current challenges and fostering long-term stability and growth.

1.2 Motivation for research

The recent debt crisis and collapse of China's largest real estate developer, Evergrande Group, has garnered significant attention in the market, highlighting the risks associated with high-leverage financing models. With over $300 billion in liabilities, Evergrande's predicament mirrors the vulnerabilities witnessed in the US market during the 2008 subprime mortgage crisis, underscoring the need to re-examine global real estate financing strategies. Simultaneously, my firsthand experience working at Evergrande Group has compelled me to conduct an in-depth analysis of this case, aiming to provide valuable insights for the real estate markets in both China and the United States.

During my tenure at Evergrande, I witnessed the consequences of a high-leverage financing model and an overly ambitious investment strategy. This experience

highlighted the crucial need to reassess financing methods, especially for Chinese enterprises facing similar challenges. Evergrande's crisis, as I observed, also stemmed from over-investment and diversification, leading to a multitude of projects ranging from real estate ventures to new energy vehicles, football clubs, tourism industries, and financial services. As enterprises encounter the bottleneck stage of rapid development, determining the appropriate financing model becomes paramount.

Moreover, I believe that studying the financing approaches of real estate companies in the United States will provide invaluable insights for Chinese enterprises seeking to navigate their own complexities. Through a comparative analysis of China and the US, this research aims to uncover optimal financing models for stability and sustained growth in the real estate sector post-crisis.

In today's era of economic globalization and increasingly interconnected financial markets, Evergrande Group's debt crisis also offers important lessons and insights for global corporate management and financial risk control. Through this research, I aim to gain a comprehensive understanding of the strategies that can guide enterprises through this critical phase, yielding insights into the necessary reforms in global real estate financing following the crisis. The conclusion will summarize key findings, provide practical recommendations for stakeholders, discuss limitations, and explore future research directions.

1.3 Research objectives, questions, and significance

This research aims to critically analyze and compare real estate markets in China and the USA, focusing on the Evergrande crisis and its implications, identify key risks and mitigation strategies, and develop policy and strategy recommendations for stakeholders to promote long-term growth and sustainability.

The study will address several research questions, including examining the predominant real estate financing and development models, assessing the strengths

and weaknesses of different financing options, exploring risk management strategies, investigating necessary reforms, and providing guidance for investors' decision-making processes.

The significance of this research lies in its contribution to understanding the global real estate industry's dynamics, challenges, and opportunities. The comparative analysis and examination of the Evergrande crisis provide insights into the underlying risks and vulnerabilities in the sector. The identification of key risks and mitigation strategies offers practical guidance for industry stakeholders, while the development of policy and strategy recommendations informs decision-making processes at various levels. Furthermore, the insights generated can contribute to the ongoing discourse on sustainable real estate development and financing, fostering a more resilient and stable global real estate market.

Overall, this research provides a comprehensive understanding of the real estate markets in China and the USA, drawing lessons from the Evergrande crisis and other historical events to guide stakeholders in making informed decisions and developing strategies for long-term success.

1.4 Literature Review

1.4.1 Debt Default and Debt Crisis

Concentrated debt default (risk) refers to the simultaneous occurrence of default risk in various aspects of credit products (such as bonds), including issuers, credit rating industries, and regions, which may further trigger systemic financial risks (Gao Yingchao and Zhao Zhigang, 2021). From a macroeconomic perspective, unexpected changes in monetary policy and regulatory policies (Brogaard et al., 2017) can have a significant impact on capital-intensive industries such as real estate and become a trigger for concentrated debt defaults. From a micro-enterprise perspective, although large enterprise groups have economies of scale (Feldman, 2021), they may

temporarily overcome difficulties with government support when facing short-term operational risks (i.e., "too big to fail") (Tsafack et al., 2020). However, subsidiaries within the group exhibit a mimetic effect (i.e., business homogeneity) (Min et al., 2022), and cross-default clauses in bonds may trigger a chain reaction of defaults in other bonds (Gao Yingchao and Zhao Zhigang, 2021). Once a company's key business faces short-term liquidity risks, the "stereotypes" of capital markets (Naumovska and Zajac, 2021) and the "joint and several liability effect" of media reports amplify the negative expectations of corporate decision-making mistakes (Graf-Vlachy et al., 2020), which not only damages corporate reputation but also amplifies default risk.

A debt crisis refers to a situation where the debtor is unable to repay the matured debt on time or fails to fulfill the obligations stipulated in the debt contract, resulting in the accumulation of financial risks and serious economic consequences. In a debt crisis, debtors face a huge debt burden and liquidity pressure, and may be unable to meet debt repayment needs, or even default or go bankrupt. Debt crises are usually closely related to factors such as the scale of corporate, financial institution, or national debt, solvency, and financial management. Academia also focuses on the contagion effect and systemic risk of debt crises. When a debtor defaults or falls into crisis, it may have a chain reaction on other related debtors, financial institutions, markets, and the economy, expanding the scope and impact of risks and forming systemic risks. This contagion effect may be generated through mechanisms such as linkages in financial markets, confidence collapse, and credit risk spread.

1.4.2 Capital Structure Theory

Modigliani and Miller (1958) proposed the famous MM theory, initially believing that under the premise of not considering income tax, corporate debt financing is irrelevant to the value of the enterprise. Subsequently, the MM theory began to consider income tax and believed that the pre-tax deduction of debt interest can increase corporate value. This theory points out that corporate financing increases

debt and corporate value, reduces the weighted average cost of capital, but also increases risk. When financing is entirely debt financing, corporate value is maximized, the weighted average cost of capital is minimized, but risk is also maximized. The Trade-Off Theory proposes that companies should balance financing costs and financing risks when financing. In addition to considering income tax, this theory also takes into account agency costs and financial distress costs, analyzing the relationship between financing structure and corporate value. The Trade-Off Theory believes that debt can offset income tax and reduce agency costs but is simultaneously limited by financial costs such as direct costs, indirect costs, and agency costs. The optimal financing structure is achieved when the income tax cost savings are equal to the sum of agency costs and financial distress costs. Myers and Majluf (1984) proposed the Pecking Order Theory based on the premise of corporate information asymmetry. This theory believes that the correct financing order is to first use endogenous financing (such as internal surplus), followed by exogenous financing. In exogenous financing, bond financing is preferred, followed by equity financing. The main difference between the Pecking Order Theory and the MM theory lies in the assumption of information symmetry. The Pecking Order Theory acknowledges the information asymmetry between investors and internal managers and believes that exogenous financing may reduce corporate value because it may expose internal corporate information and break the state of information asymmetry. Therefore, if endogenous financing is sufficient, companies prefer endogenous financing, followed by debt financing, and only consider equity financing as a last resort.

1.4.3 Agency Theory

The existence of agency problems in modern corporate governance is mainly reflected in the conflicts of interest between shareholders and management, shareholders and creditors, and majority and minority shareholders. These problems may lead to management pursuing private interests at the expense of shareholder interests, or companies using creditors' funds to invest in high-risk businesses, increasing the

possibility of creditor losses, as well as majority shareholders using related transactions to encroach on the interests of minority shareholders. As the founder of Evergrande Group and the company's largest shareholder, Hui Ka Yan has always been in a position of absolute control in the management team, making the issue of executive shareholding particularly prominent in agency problems.

In modern corporate governance, executive shareholding, as an important means of equity incentives, is widely used to solve agency problems, that is, to alleviate the conflict of interest between company owners and operators. By aligning the interests of managers with those of shareholders, executive shareholding helps to some extent to make corporate decisions more in line with shareholder interests. However, this practice may also lead to an excessive concentration of executive power, which in turn affects the company's strategic decisions (Morck, Shleifer, and Vishny, 1988; Stulz, 1990; Xu Dawei, Cai Rui, et al., 2017).

In the theoretical framework, research on executive shareholding and corporate governance mainly covers three theories: Convergence of Interests, Entrenchment Effect, and Interval Effect. The Convergence of Interests theory believes that executive shareholding can improve company performance, while the Entrenchment Effect points out that excessively high executive shareholding may lead to management privilege consumption, harming company performance. The Interval Effect theory reveals the complex relationship between the proportion of management shareholding and company performance.

Numerous empirical studies support these theories. For example, research by Morck, Shleifer, and Vishny found that the relationship between the proportion of executive shareholding and company performance is not simply linear, but more complex. Stulz's research shows that there is a non-linear relationship between company value and executive equity incentives. In addition, research by Xu Dawei, Cai Rui, et al. shows that the impact of executive shareholding on company performance has a

significant interval effect.

Combining these theories and empirical studies, it can be seen that executive shareholding has a complex dual effect on corporate governance. Appropriate executive shareholding helps to improve company performance, but excessively concentrated equity may lead to management overconcentration of power and abuse of power, harming the interests of the company and minority shareholders. Therefore, the role of executive shareholding in corporate governance needs to be carefully balanced and adjusted according to specific circumstances.

1.4.4 Managerial Overconfidence Theory

Managerial overconfidence, as a common psychological bias, has attracted widespread attention in academia. Numerous studies have explored its connection with corporate investment decisions and financial risks. Based on this background, this article combines the case of China Evergrande Group to analyze various problems caused by managerial overconfidence.

As early as the 1980s, research by Woo and Dunkelberg (1988) pointed out that most entrepreneurs overestimate their ability and the possibility of project success, with about 68% of entrepreneurs believing that their ability exceeds that of their peers. In his "Hubris Hypothesis of Corporate Takeovers," Roll (1986) proposed that managers overestimate their own abilities, which may lead them to pay excessive prices in acquisitions and engage in more frequent and riskier acquisitions. Heaton (2002) believes that overconfidence will drive management to prefer higher-risk projects and tend to use internal funds and debt for financing because they overestimate the value of the stock. Through model analysis, Hackbarth (2008) pointed out that overconfidence not only affects the choice of financing methods but also leads to shortened corporate debt maturities.

Hui Ka Yan, the founder of China Evergrande Group, is a typical overconfident

entrepreneur. In the process of rapidly expanding Evergrande's business scope and asset scale, he exhibited blind optimism and recklessness, which is a common mentality of managers under a snowball development model. Hui Ka Yan overestimated his and the management team's abilities while underestimating the risks of high-leverage operations. His personal characteristics, such as grandiosity, also exacerbated this "self-serving bias."

1.4.5 Financial System Facilitation Mechanism

The generation and development of corporate financial crises is a complex process influenced by multiple internal and external factors. Existing literature, when exploring the causes of financial crises, mainly focuses on endogenous factors such as management failure, agency problems, and overinvestment, while rarely considering the perspective of the financial system. Bernanke et al.'s (1996) financial accelerator theory reveals the macro mechanism through which the credit system amplifies economic fluctuations through leverage effects, but few studies systematically explain how the financial system affects the micro-financial situation of enterprises. The current Chinese financial system differs from that of the West, with higher political-bank homogeneity, lower marketization, and imperfect information disclosure, making research on the impact of the financial system in the Chinese context particularly significant.

A review of the existing literature shows that most studies explore the causes of financial crises from the reverse path of the corporate life cycle, that is, tracing back from the crisis results to the antecedent factors such as overinvestment and governance failure. This research perspective ignores the attribute of crisis as a dynamic process and makes it difficult to identify the mechanism of financial system factors at different stages of development. Financial institutions play a role in three stages of a corporate financial crisis. First, in the early stage of aggressive expansion, they significantly reduce the cost and risk of corporate expansion. Second, during the

mild crisis period, they influence the judgment of corporate executives by providing optimistic information and inaction, further prompting companies to continue expanding. Finally, during the deep crisis period, the roles and entities within the financial system interact with each other, rapidly withdrawing funds and causing a vicious cycle of corporate investment and financing, accelerating and exacerbating the financial crisis. Third, the financial crisis facilitation mechanism of China's financial system can constitute an amplifier of external policy shocks, expanding the scope, impact, and speed of the original policy environment shock, causing companies that could have operated normally to fall into crisis (Zhu Wuxiang et al., 2023). The financial system may not only affect the early expansion of enterprises but also change management's judgment of the company's situation and cause systemic risks during the deep crisis period. Therefore, adopting a continuous research path can help us better observe and evaluate the effects of the financial system. In addition, the existing literature generally uses the traditional assumption of "financial institutions have no credit decision-making risk," regarding their behavior as an exogenous policy rather than the result of endogenous market choices, which weakens the responsibility that financial institutions should bear and also limits our thinking about financial innovation.

1.4.6 Real Estate Finance

The global economy continues to suffer from the aftermath of the 2008 financial crisis, highlighting the immense importance of real estate and real estate finance. As the subprime crisis has vigorously demonstrated, the influence and spillover effects from real estate markets to other worldwide markets, including stock markets, bond markets, derivative markets, and non-financial markets such as commodity or labor markets, are enormous. On a positive note, real estate investments have a significant influence on gross domestic product and employment rates due to the very high multiplier effects resulting from investments in this sector, earning real estate the title of "economic locomotive" (Nadler 2001, p. 4).

From a research perspective, real estate, which includes real estate finance as a core sub-field, has a much longer tradition in Anglo-Saxon countries compared to Germany. The first real estate course in the United States was held at the University of Wisconsin in 1892 (Dasso and Woodward 1980, p. 404), whereas it took nearly a century for a real estate discipline to be institutionalized in Germany (Schulte 2003, p. 100). Although real estate as a discipline has been a research niche in the past, its relevance is expected to grow in the future, not only due to the subprime crisis. With real estate locking up a large share of capital in non-property companies such as banks, insurance companies, and industrial corporations (historically up to 25% of the balance sheet sum) and with real estate maintenance costs being a core component of total costs, managing real estate has already become a major issue (Bone-Winkel and Müller 2008, p. 32).

1.4.7 Housing Markets Inefficiency Theory

Lind (2017, p. 66) defines fundamentals as "factors that, according to established theories, affect house prices on a well-functioning competitive market with rational actors." However, it is debatable whether housing markets can be considered well-functioning competitive markets with rational actors. It is well known that housing prices do not follow a random walk but display short-run momentum (Case & Shiller, 1989) and long-run mean reversion (Glaeser et al., 2014). DiPasquale and Wheaton (1994) also emphasized the predictability of the housing market cycle with positive serial price correlation.

Guren (2018) argues that house price momentum (similar to price stickiness in the goods market) lasts for 2–3 years before prices mean-revert, a time horizon far greater than for most other asset markets. Glaeser et al. (2014) demonstrate that mean reversion over the medium and longer term occurs if construction does not respond immediately to shocks and if local income shocks themselves mean-revert. They argue that housing markets are local, not national, in nature. These differences in

fundamental factors dynamics over time imply that short-term equilibrium prices might differ significantly between different locations and in comparison, with equilibrium prices established over longer time horizons.

Claussen (2013) points out the distinction between a long-run equilibrium price, the "fundamental price," and the short-term equilibrium price. Overpricing (underpricing) occurs when the actual price is above (under) the fundamental price. However, changes in explanatory variables may quickly change the long-run equilibrium price and, consequently, the conclusion regarding over/underpricing. Claussen (2013, p. 192) defines overpricing as a situation where "houses are overpriced if they cannot be explained by the estimated model and the realized values of the explanatory variables."

Bergman and Sorensen (2021) emphasize that the fundamental house price can be viewed as the equilibrium house price based on rational expectations about the fundamental factors (future incomes, interest rates, and rents) affecting the future value of the housing service. Even though, as emphasized by Case and Shiller (1989), buyers and sellers do not always form their expectations rationally, deviations of actual house prices from the estimated fundamental prices can indicate whether the housing market is overpriced or underpriced.

In summary, all factors that affect house prices beyond the fundamental price level are considered deviations from fundamentals. If prices are high but can be justified by fundamentals, a bubble is not present. Expectations might also drive prices, but they can be rational (indicating no bubble) or irrational (indicating a bubble) and thus not based on fundamentals. The core distinction between fundamentals and other factors affecting prices is that the former determine house prices, while the latter drive prices away from the fundamental price level. Therefore, to recognize and avoid bubbles, it is essential to understand the determinants of house prices, i.e., their fundamentals.

1.4.8 Property Cycles Theory

Reed and Wu (2010) point out that cycle theory results from one of the basic human observations of the natural world and human societies. They argue that, as a subset of the market system, the level of house prices can be studied and explained in a way consistent with how the stability of the entire system is studied. The volatility of house prices raises concerns during boom periods regarding housing affordability in certain countries and problems with negative equity and the stress associated with recessions when bubbles burst.

Lind (2009) develops a theoretical framework for explaining bubbles in house prices, presents a definition of bubbles in the housing market, and offers a set of indicators working as warning signals when bubbles emerge (Figure 1). Lind (2009) emphasizes that a bubble can never be explained by a single factor but is the result of the interaction of numerous factors. He argues that the traditional definition of a bubble in the housing market in terms of prices not determined by fundamentals is problematic, primarily because the concept of "fundamentals" is vague. However, Lind (2009) does not cover other issues in property cycles theory, such as cycles in construction activity, turnover and vacancies, credit cycles, etc.

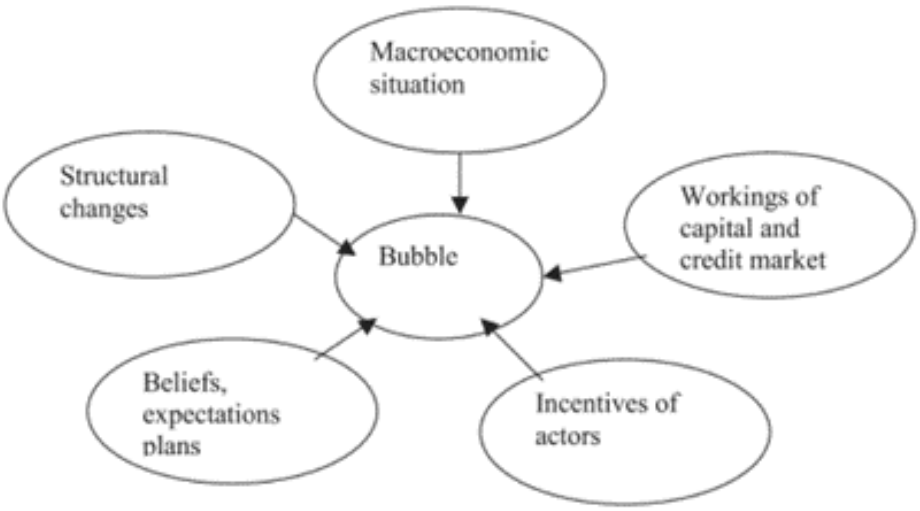

Figure 1. Theoretical framework for explaining bubbles, from Lind (2009)

Source: Price Bubbles in Housing Markets: Concept, Theory and Indicators. International

Journal of Housing Markets and Analysis, 2, 78-90.,

https://www.emerald.com/insight/content/doi/10.1108/17538270910939574/full/html

Barras (1994) argues that the property market is subject to several cyclical influences of different periodicity. These only combine to produce major speculative building booms when there is a particular convergence of market conditions involving strong demand growth, supply shortages, and credit expansion. Barras (1994) presents a conceptual model of how the building cycle works (Figure 2). The model illustrates how a building boom is generated by the interaction of the business cycle in the real economy, the credit cycle in the money economy, and the long cycle of development in the property market. Barras (1994) emphasizes that building cycles are inevitable and that different regulatory measures, such as tighter controls on bank lending to property companies and fiscal and leasehold reforms, are needed to reduce the degree of speculative development.

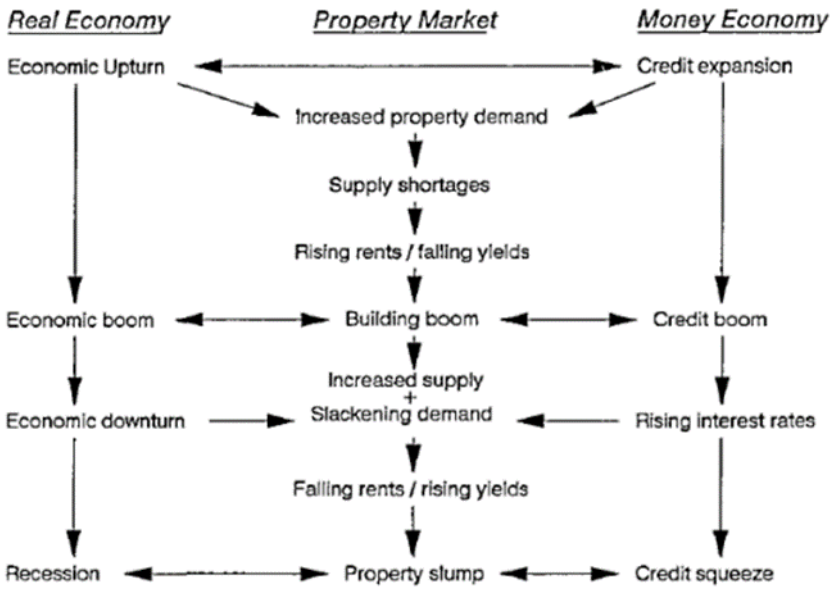

Figure 2. How building cycles work, from Barras (1994)

Reed and Wu (2009) argue that the prime motivation for property cycles analysis is to understand the unstable nature of market mechanisms. Market mechanisms reflect the

notion that an economy driven by self-interest, based on perfect competition, can achieve an efficient allocation of resources and a fair distribution of welfare. General equilibrium theory validates the power of the market mechanism by confirming the legitimacy of modern market systems as a preferred resource allocation system. Hence, there should not be a major conflict between property cycle theory and general equilibrium principles in property market systems, since they have a common foundation. However, the real world is not perfect, and states and other organizations have played influential roles in the property sector in the past and present. As emphasized by Reed and Wu (2009), it is necessary to expand the general equilibrium model further with the support of new economic theories about institutional changes and the state's role as an integrated part of the system.

Chapter 2 Case Study of Evergrande

2.1 Overview of Evergrande

Since its establishment in 1996, China Evergrande Group has not only represented the development trajectory of China's real estate industry but has also become a significant symbol of China's rapid economic growth and transformation.

Chairman of Evergrande group, Hui Ka Yan, built up his business from nothing. He made his first significant achievement in 1995, successfully securing a loan of 20 million yuan (equivalent to $2.4 million US dollars in 1995) from a bank to purchase land for an old factory. After acquiring the property, Hui obtained an additional 20-million-yuan loan by mortgaging the recently purchased land, injecting capital into the business operations. Rather than immediately constructing apartments, Hui allocated a substantial number of resources to advertising and renovating the infrastructure for the apartments, surpassing his competitors. This strategic move successfully captured consumers' attention, as the apartments offered a superior living experience at a comparatively lower price. This innovative approach led customers to make advance payments for their ideal apartments, thereby providing Hui with another significant influx of capital into the company's accounts. This enabled Evergrande to expedite apartment construction and shield itself from cash flow pressures.

By employing this "risk-free" leverage strategy, Hui established Evergrande after accumulating capital over several years. Leveraging the success of utilizing leverage and achieving triumph in advertising, Evergrande branded itself as highly efficient in construction, sales, and delivery, while maintaining high standards of facility and service quality. With healthy and consistent cash inflows, banks were confident in Evergrande's ability to repay its debts, thus readily providing loans to support its ventures. This abundant funding facilitated Evergrande's expansion into new

programs, propelling its rapid growth and skyrocketing market value. Leveraging its access to endless funds through leverage, Evergrande continued to expand into new areas, initiating new projects and deploying its leverage strategy repeatedly.

After successfully listing on the Hong Kong Stock Exchange in 2009, Evergrande continuously accelerated the development of its real estate business and began to explore diversified business areas.

By 2013, Evergrande's sales exceeded $15.46 billion for the first time, making it an industry leader. Since its listing, Evergrande maintained an average growth rate of over 30% for five consecutive years. In 2015, against the backdrop of China's economic transformation, Evergrande continued to purchase land on a large scale in third- and fourth-tier cities, and in the following year, it became one of the Fortune Global 500 companies. In 2017, Evergrande's land reserves reached an astonishing 130 million square meters, with a land value of $52.56 billion US dollars, and sales reached $65.33 billion US dollars, ranking first in domestic real estate companies' sales. In the same year, Evergrande began a strategic transformation, shifting from a single scale expansion model to a development path that focused more on efficiency. During this period, Evergrande solved the funding issues brought about by rapid expansion through the large-scale issuance of perpetual bonds, with the issuance amount reaching $14.56 billion US dollars by the end of 2016. In 2017, Evergrande introduced $16.77 billion US dollars in strategic investments and actively prepared to return to the A-share market.

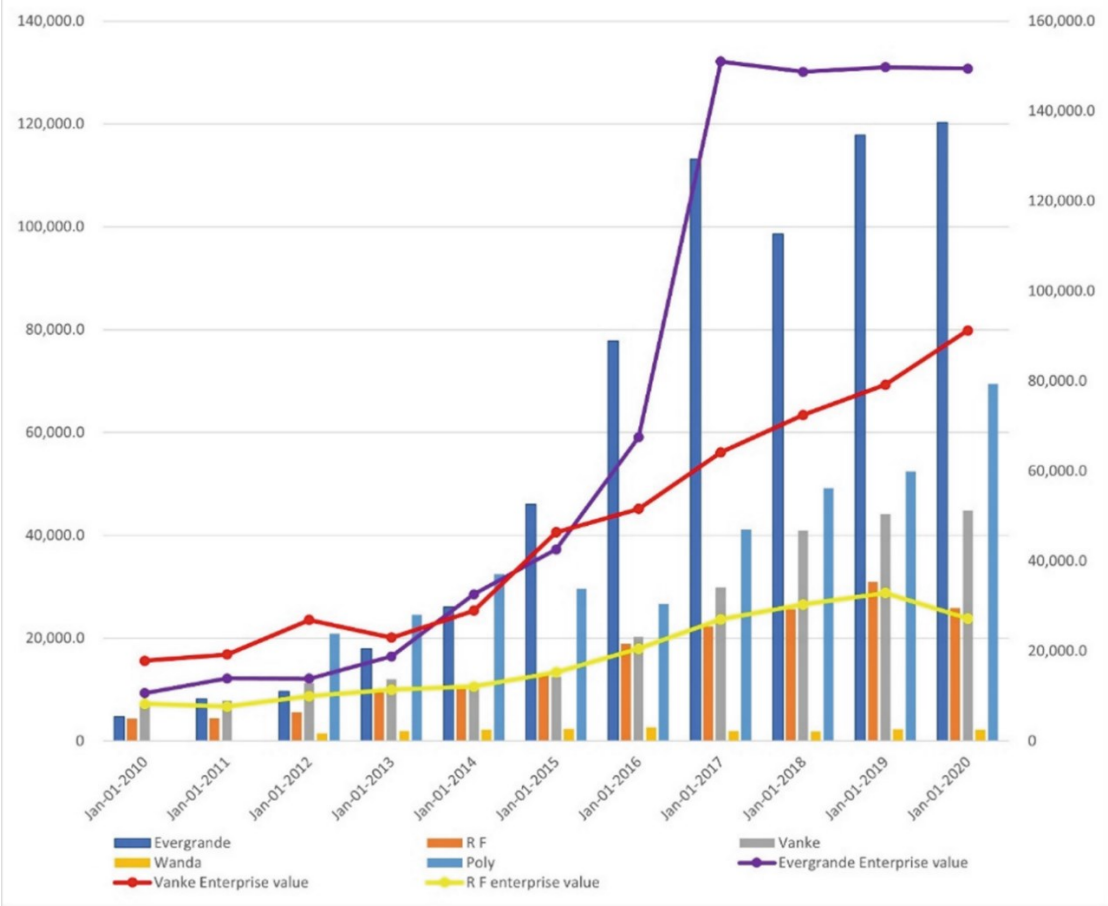

Figure 3. Total debt (in million USD) vs enterprise value

Source: Evergrande? or Forever-Debt? – Evergrande Debt Crisis Case Study, https://link.springer.com/chapter/10.1007/978-981-19-5727-7_71

Figure 3 shows that Evergrande's contracted sales area grew at a geometric average rate of around 125% every single year from 2010. Astonishingly, Evergrande's total debt accumulated to 120 billion dollars in 2020, which grew at 37.66% per year and was close Nebraska's total GDP for the whole year.

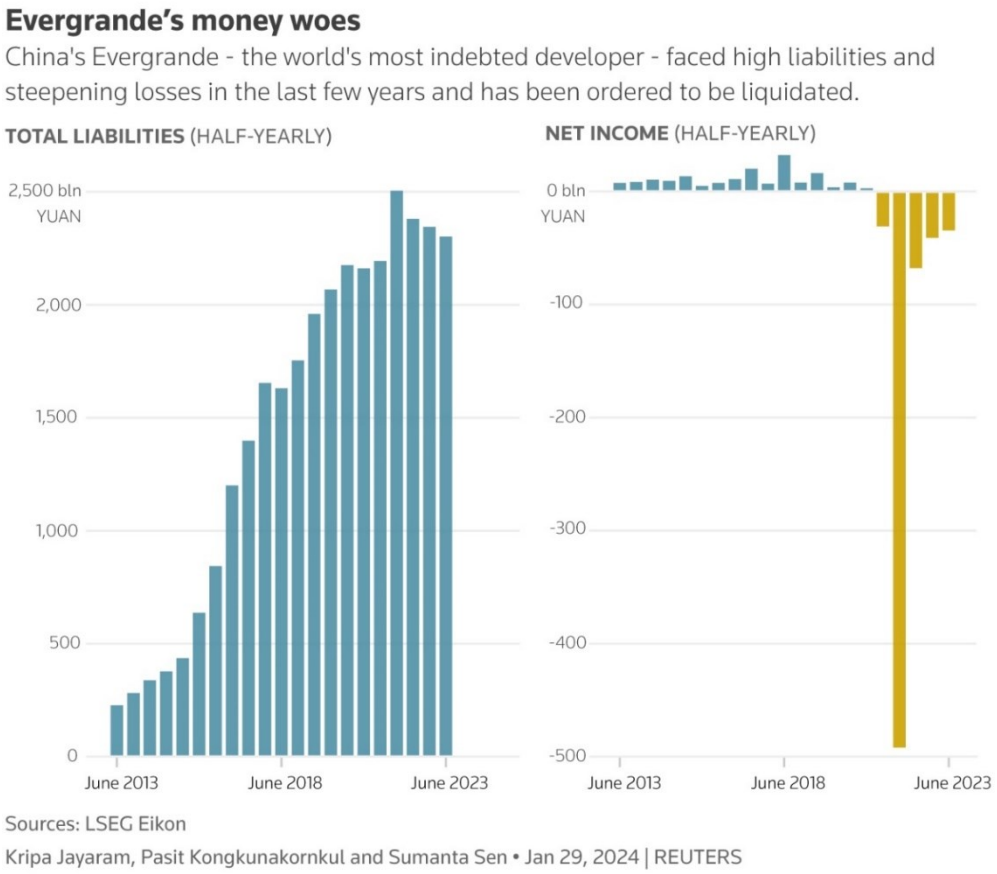

Figure 4. Evergrande's reported liabilities

Source: China Evergrande ordered to liquidate in landmark moment for crisis-hit sector, https://www.reuters.com/business/embattled-china-evergrande-back-court-liquidation-hearing-2024-01-28/

After achieving success in the real estate market, Evergrande further expanded into multiple fields, including new energy vehicles, cultural tourism, and health and wellness, forming an industrial group covering multiple industries. In 2020, Evergrande Real Estate topped the China Real Estate Top 100 list and ranked 152nd on the Fortune Global 500 list. By 2021, Evergrande Group's total assets had approached $296.77 billion US dollars, with annual sales exceeding $102.53 billion US dollars.

However, Evergrande's rapid expansion and diversification strategy also brought it a heavy financial burden. In 2020, the "three red lines" financing policy implemented

by the Chinese government severely impacted Evergrande's financial situation, causing key indicators such as its asset-liability ratio, net debt ratio, and cash-to-short-term debt ratio to deteriorate. To alleviate the debt crisis, Evergrande had to raise funds through measures such as selling properties at a discount and disposing of assets, but these measures still failed to thoroughly resolve its liquidity problems.

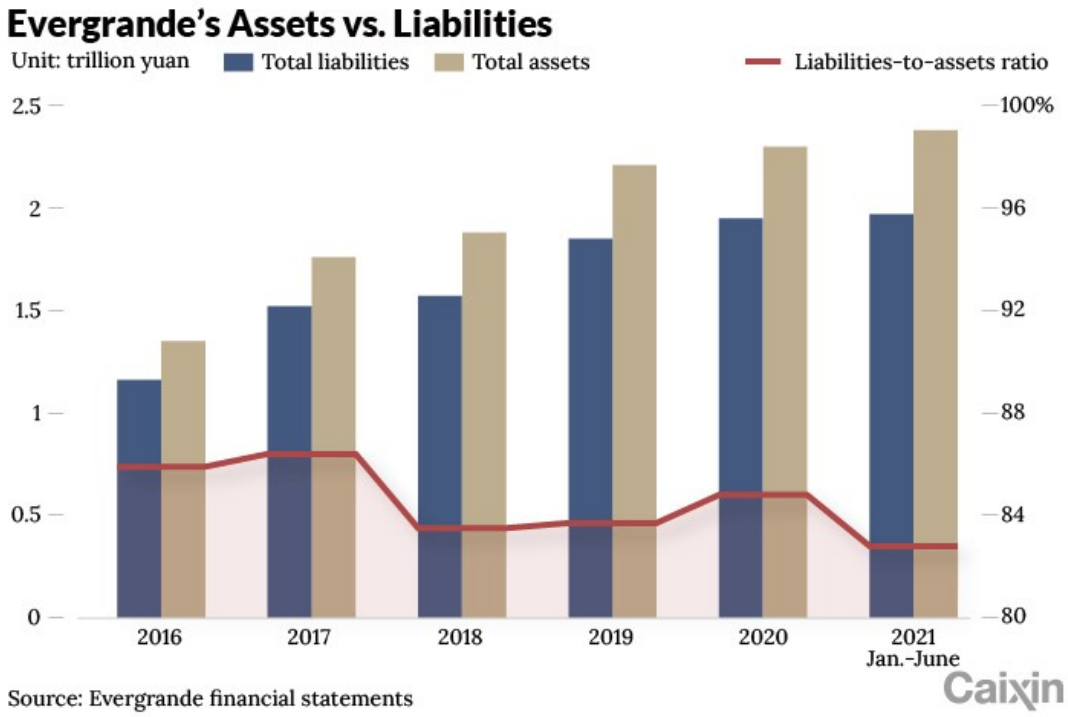

Figure 5. Evergrande's Assets vs. liabilities

Source: How Evergrande Could Turn Into 'China's Lehman Brothers, Caixin https://www.caixinglobal.com/2021-09-20/cover-story-how-evergrande-could-turn-into-chinas-lehman-brothers-101775596.html

2.2 The Crisis Process

2020: The Beginning of the Debt Crisis

- **Policy Adjustments and Market Changes:** In 2020, due to macro policy adjustments and changes in real estate market prices, Evergrande began to face declining profits and had to start reducing debt.

- **Evergrande's Aggressive Expansion and Debt Difficulties:** In 2016, when Evergrande began its diversification transformation, the real estate market was thriving due to the monetization of shantytown renovation, with many residents obtaining large sums of money to buy houses. While transforming, Evergrande also gradually shifted its real estate business from second and third-tier cities to first-tier cities, frequently acquiring land and taking over projects from Hong Kong-funded companies preparing to exit the mainland Chinese market. This aggressive land acquisition undoubtedly increased Evergrande's debt pressure. As early as 2015, Evergrande had the highest debt ratio among real estate companies in mainland China. Evergrande had to raise funds continuously and quickly through sales, bond issuance, and other means to maintain cash flow. In 2016, Evergrande became the first company to launch price reduction and inventory reduction activities nationwide.

- **Strategic Investment and Capital Delays:** In January, Evergrande Real Estate's 130-billion-yuan strategic investment funds were agreed to be postponed. In August, its subsidiary Evergrande Property introduced 23.5 billion Hong Kong dollars in strategic investments from Sequoia Capital, Yunfeng Fund, CITIC Group, and others.

- **The "Three Red Lines" Policy:** Since the release of the new financing rules for real estate companies, the "Three Red Lines," in August 2020, Evergrande has fallen into a debt crisis. These regulations require real estate companies to limit indicators such as asset-liability ratio, net debt ratio, and cash-to-short-term debt ratio on the supply side.

2021: Crisis Intensification and Self-Rescue Efforts

- **Debt Reduction:** After more than a year of efforts, by June 2021, Evergrande had reduced its interest-bearing liabilities to HK$571.8 billion and its net debt ratio to below 100%.

- **Commercial Bill Defaults and Legal Proceedings:** In the same month, Evergrande's commercial bill default incidents emerged, triggering a large number of suppliers and related companies to pursue debts through legal means.

- **Government Intervention:** In August, the central bank and the China Banking and Insurance Regulatory Commission summoned Evergrande executives, requiring them to stabilize operations.

- **Evergrande Wealth Stops Redemption:** On September 8, 2021, Evergrande Wealth announced that it would stop redeeming its wealth management products, which triggered widespread discontent and rights protection actions.

- **Asset Sales and Cash Flow Crisis:** In September, Evergrande attempted to recover cash through discounted property sales. However, project suspensions and cash flow depletion led to a collapse in credit, and the company publicly admitted to large-scale debt defaults.

- **Guarantee Obligation Default:** On December 3, 2021, Evergrande announced that it was unable to fulfill its $260 million guarantee obligations. This statement meant that it could potentially trigger cross-defaults on more than $19 billion of its debts.

- **Guangdong Provincial Government Intervention:** On the same day, the Guangdong Provincial Government agreed to send a working group to Evergrande, aiming to assist the company in risk disposal, strengthen internal control management, and maintain normal operations.

Market Value Plummet and Corporate Difficulties

- **Stock Price Decline:** Evergrande's stock price fell from HK$28 in August 2020 to HK$2.28 in September 2021, with a market value of only HK$30 billion.

- **Subsidiary Market Value Shrinkage:** Evergrande Auto's market value also dropped from HK$700 billion in February 2021 to less than HK$30 billion.

- **Performance Comparison:** This contrasts sharply with Evergrande's revenue of HK$507 billion and net profit of HK$31.5 billion in 2020.

After 2023: Evergrande Group's Continued Struggle

- **Changes in Shengjing Bank:** In April 2023, there were significant changes in the management of Shengjing Bank, with local governments becoming an important role in risk prevention and control.

- **U.S. Bankruptcy Protection Application:** On August 17, 2023, Evergrande applied for bankruptcy protection in a New York court under Chapter 15 of the U.S. Bankruptcy Code.

- **Hui Ka Yan Taken into Custody:** On March 19, 2024, Evergrande Group Chairman Hui Ka Yan was taken into custody for suspected illegal and criminal activities, causing the stock price to plummet.

- **Liquidation:** Evergrande attempted to improve its overseas debt restructuring plan and seek support from creditors. Creditors faced choices including accepting the restructuring plan, hoping for the resumption of liquidity in Evergrande's stocks, or allowing the company to be liquidated and taking over overseas assets. On January 29, 2024, the Hong Kong High Court ordered the immediate liquidation of China Evergrande Group.

2.3 Broader Implications for the Chinese Real Estate Sector

2.3.1 Stock and Bond Prices Plummet, Stock Trading Suspended

Since the outbreak of Evergrande Group's debt crisis, its stock price has exhibited an

overall downward trend, particularly after news of its commercial paper defaults emerged in June 2020, leading to a continuous decline. By March 18, 2022, Evergrande's stock price had plummeted to 1.65 yuan per share, compared to around 10.05 yuan per share in June 2021. During this 9-month debt crisis period, the stock price fell by over 83.58%. Evergrande Group's debt defaults not only caused a dramatic drop in its stock prices but also severely impacted the company's market valuation and ability to raise financing.

Figure 6. The changes in Evergrande Group's stock price since 2020

Source: Wind Database

Figure 7. Market value of Evergrande (billion USD)

Source: Wind Database: Evergrande market value,

https://www.wind.com.cn/NewSite/mobi.html

In the past decade, Evergrande's market value reached its lowest value of 3.62 billion US dollars on May 25, 2010, and reached its peak value of 53.41 billion US dollars on October 24, 2017. In the past five years, Evergrande's market value fell to its lowest level of 3.90 billion US dollars on November 8, 2021. Evergrande's market value fell all the way after the bad news released (see Figure. 7).

Evergrande's "15 Evergrande 03" bonds, scheduled to mature in September 2021, experienced a significant price decline. These bonds were trading at 98.88 yuan in May 2021 but plunged to 27.12 yuan by September, a staggering 71.88% decrease. Consequently, China Chengxin downgraded Evergrande's bonds to an AA rating, further exacerbating the decline in bond prices, with the highest drop reaching 21.78%. Although there were no reports of Evergrande defaulting on its bonds at that time, the sharp plunge in bond prices already indicated the market's grave doubts about Evergrande's liquidity position. Since May 2021, investors have been aggressively offloading Evergrande's bonds and stocks, with the market widely anticipating that Evergrande might default on its debt obligations.

On March 21, 2022, trading of Evergrande Auto and Evergrande Property, subsidiaries of China Evergrande Group, was suspended on the Hong Kong Stock Exchange. This suspension further compounded the company's woes and added to investor concerns about its financial health.

2.3.2 Credit Rating Downgrades

From 2015 to 2021, China Chengxin had consistently maintained the highest AAA rating for China Evergrande and its "15 Evergrande 03" bonds. However, it failed to accurately predict the potential operational deterioration and debt risks that Evergrande might face. It was not until September 2021 that China Chengxin first downgraded Evergrande's rating to AA. In the subsequent three months, Evergrande

announced a $260 million guarantee default and unveiled plans to restructure its overseas debt, which quickly attracted widespread market attention. In response, the Guangzhou municipal government urgently intervened, dispatching a working group to Evergrande to oversee its risk management efforts.

Following Evergrande's USD bond default, major rating agencies successively downgraded Evergrande's bond ratings. China Chengxin lowered the rating from AA to A, and then further downgraded it to BB. By December 22, 2021, in less than two weeks, Evergrande's credit rating had plunged to B, plunging the company into a severe credit crisis.

The primary reason for this significant rating downgrade was Evergrande's continuously dwindling liquidity, with no signs of relief in the short term. Since June 2021, Evergrande's sales in the real estate and related sectors have been declining steadily. Moreover, since September 2021, Evergrande has reduced its holdings in the Bank of Jinzhou stock several times, but apart from the Bank of Jinzhou, the sale of other key assets such as Evergrande Property and Evergrande Auto has not yielded significant returns. Given the challenges posed by the "deliver houses" campaign and Evergrande's financial difficulties, the likelihood of it repaying bond principal and interest on time was minimal. Consequently, major international rating agencies, including China Chengxin, Fitch, Standard & Poor's, and Moody's, have all downgraded Evergrande's issuer and bond ratings.

2.3.3 Impact on Financial System Stability

The real estate industry is inextricably linked to the financial sector. In 2010, China's outstanding real estate loan balance stood at 9.4 trillion yuan, accounting for 20.1% of total loans. This figure escalated to 53.2 trillion yuan by 2022, with the proportion rising to 24.8%. In 2019, the real estate loan ratio reached a historic high of 29.3%. In 2022, new real estate loans amounted to 721.32 billion yuan, representing 3.4% of total new loans, indicating tightened regulation and a significant decrease in real

estate-related lending. A rapid cooling of the property market could potentially lead to a substantial number of non-performing loans, jeopardizing financial stability. Evergrande's mid-year report for 2021 revealed that its borrowings amounted to 571.87 billion yuan, which could account for more than 10% of the net assets of certain lending banks. Consequently, an Evergrande bankruptcy could severely impact these banks.

2.3.4 Drag on Upstream and Downstream Partner Companies

In the context of real estate developers reducing their debt burdens, Evergrande shifted its debt obligations from financial institutions to upstream and downstream partner companies, exacerbating the debt crisis for small and medium-sized enterprises (SMEs). In August 2020, Evergrande sought assistance from the Guangdong provincial government, with 8,441 upstream and downstream partner companies affected. Evergrande's cash flow problems directly impacted the operations of these companies, and some even faced the risk of bankruptcy. In 2020, Evergrande's total outstanding commercial paper amounted to 205.7 billion yuan, accounting for approximately 10% of the total domestic commercial paper market. Starting in June 2021, Evergrande refused to redeem its commercial paper, leading to suppliers ceasing cooperation and halting projects in multiple locations. The cooperation between Jiangsu Nantong Sanjian and Evergrande was extensive, with the contract amounting to as much as 8.577 billion yuan.

2.3.5 Impact on Social Stability

Evergrande's debt scale is massive and complex, involving a wide range of investors, including market participants and company employees. Evergrande's unsatisfactory repayment plan has prompted numerous investors to seek legal action, damaging its reputation and severely harming investor interests. Negative news about Evergrande has led to the suspension of several projects in cities such as Guangzhou, Shanghai, Shandong, and Hangzhou, where existing properties cannot be delivered, harming the

rights and interests of ordinary homebuyers and leading to social stability concerns. Furthermore, Suning, which had a strategic investment scale of up to 20 billion yuan in Evergrande, failed to recover its investment on time and was subjected to a debt-to-equity swap, with this investment becoming the proverbial last straw that broke the camel's back for the retail giant. Suning's liquidity crisis gradually surfaced, leading to Zhang Jindong's resignation from Suning's board of directors, and his son, Zhang Kangyang, being pursued globally by creditors. In 2021, Suning's revenue was 138.9-billion-yuan, total liabilities were 139.709 billion yuan, and net losses were as high as 43.2 billion yuan, ranking first among A-share losses. In 2022, Suning's financial situation further deteriorated, with annual revenue of 71.4 billion yuan, a year-on-year decrease of 48.6%, and the asset-liability ratio rising to 89.22%.

Since August 2021, Evergrande has injected over 10 billion yuan into project companies in various locations to address the suspension of many projects. Evergrande's real estate products are primarily targeted at the rigid demand market, so the "deliver houses" measure is closely related to social stability. On August 6, construction at the site of Evergrande Cultural Tourism City in Taicang was suspended. Jiangsu Nantong Sanjian Group Co., Ltd., as the general contractor, had its work suspended due to Evergrande's arrears of engineering fees, with most of the completed work yet to be settled. As of September 2021, several projects under construction in Changsha were either halted or partially halted. The total amount of engineering fees owed by Evergrande exceeded 137 million yuan, plus arrears of wages to migrant workers, totaling more than 290 million yuan. Jiangsu Suzhong Construction Group Co., Ltd., as the general contractor for Evergrande's projects, was also owed engineering fees and faced severe financial pressure. Evergrande's wave of project suspensions has hindered the progress of property delivery. On August 19, 2021, after talks with the People's Bank of China and the China Banking and Insurance Regulatory Commission, Evergrande Group publicly committed for the first time to ensure the construction of projects and the delivery of properties. On September 1, 2021, Evergrande Group held a signing ceremony for the "deliver

houses" pledge, which was personally attended by Hui Ka Yan.

According to a report submitted by Evergrande Group to the Guangdong provincial government in 2020, by the end of June 2020, the unsold but undelivered commercial housing units amounted to 617,000 sets, and if Evergrande were to fall into crisis, it would affect 2.04 million homeowners. The mid-year performance report for 2021 showed a year-on-year increase in contracted sales area, but a decrease in delivered area and a significant increase in contracted liabilities.

Evergrande's current total debt is as high as 1.97 trillion yuan, including over 500 billion yuan in interest-bearing liabilities and over 600 billion yuan in payments to suppliers and contractors. In order to cope with this situation, Evergrande Group is actively cooperating with financial advisors and legal advisors to evaluate the company's capital structure and liquidity situation, and is in continuous communication with overseas creditors to seek feasible solutions. These events have put Evergrande in a severe debt crisis and liquidity predicament. According to the debt data disclosed in the announcement, as of the end of 2021, Evergrande's total assets were 16.99 trillion yuan, however, total liabilities had reached 18.98 trillion yuan, with liabilities exceeding assets by 199 billion yuan. In addition, Evergrande stated that its core task for the next three years is to "deliver houses," and it is estimated to require additional financing of 250 billion to 300 billion yuan. However, at present, Evergrande only has a cash reserve of 2.1 billion yuan. These figures highlight the severe financial pressure and financing difficulties faced by Evergrande. Evergrande's debt crisis has revealed the vulnerability of China's real estate industry in the face of policy tightening, market fluctuations, and its own highly leveraged operating model. This crisis not only has profound implications for Evergrande but also has wide-ranging effects on the entire real estate industry, financial markets, and related government policies. Evergrande's future will depend on the feasibility of its restructuring plan, the response of creditors, and further dynamics in the market and government.

2.4 Cause Analysis

2.4.1 High Leverage Profit Model

Evergrande's rapid growth and expansion over the past two decades can be attributed to its aggressive leverage strategy. The company relied on borrowing new funds to repay old debts, maintaining cash flow operations. Banks and investors were willing to provide funds to leading real estate companies like Evergrande, allowing the company to continue this funding game as long as the regulatory environment remained unchanged. However, when Evergrande's business became too large, any slight improper turnover of funds could lead to the rupture of the capital chain.

Evergrande's business model heavily relied on five layers of leverage:

- Borrowing money from banks to purchase land, then mortgaging the land to borrow money for development and construction.
- Allowing construction units and suppliers to advance funds and issuing merchant tickets to leverage supplier funds during the construction process.
- Obtaining a large amount of pre-sale funds from buyers in advance through pre-sale of houses, using the funds for working capital, interest repayment, and daily turnover.
- Issuing stocks and bonds through listed platforms to attract public investment through high interest rates.
- Issuing high-return financial products, leveraging internal employee funds and binding employees.

These five layers of leverage allowed Evergrande to minimize capital costs throughout the construction and sales process, relying on external funds. The

company's biggest cost was purchasing land, most of which was hoarded at low prices more than a decade ago. As prices rose, Evergrande built and sold houses to earn a price difference, often agreeing on installment payments.

However, leverage can amplify both profits and risks. Since 2010, Evergrande's operating cash flow has been negative, indicating that its business operations cannot generate sufficient cash. The company's overall cash flow was supported by a large amount of financing, covering the net expenses of operating and investment cash flows. When external financing encountered policy changes and tightening factors, the risk of fund chain rupture rapidly increased.

Table 1. Cash flow changes of Evergrande from 2017 to 2021

Source: Annul report

Time	2017	2018	2019	2020	2021.6.30
Net cash flow from investing activities ($100 million)	–474.82	–603.63	–553.08	–241.28	–196.18
Net cash flow from Operating activities (100 million yuan)	–1509.73	547.49	–673.57	1100.63	–148.31

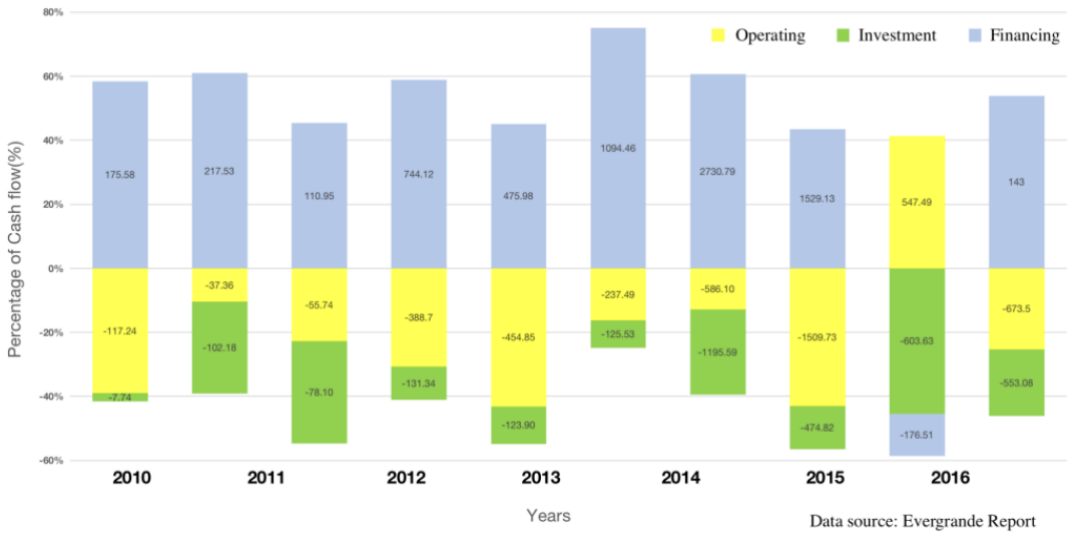

Figure 8. Cash flow changes of Evergrande

Source: The Debt Problem of Evergrande,

https://www.researchgate.net/publication/375551262_The_Debt_Problem_of_Evergrande

The introduction of the "Three Red Lines" policy in 2018, which regulated the financing of real estate enterprises, unexpectedly hit Evergrande's high-leverage operation mode. The company failed to meet all three requirements:

- Asset-liability ratio excluding prepayments not exceeding 70%
- Net debt ratio not exceeding 100%
- Ratio of cash to short-term debt not less than one time

Table 2. Evergrande's Main Debt Repayment Indicators

Source: Annul report

Time	2018	2019	2020	2021.6.30
Liquidity ratio	1.36	1.37	1.26	1.24
Quick ratio	0.42	0.38	0.33	0.34
Ratio of liabilities to assets (%)	83.58	83.75	84.77	82.71

Evergrande's inability to increase interest-bearing liabilities due to hitting the three red lines led to the rupture of its funding chain, resulting in many projects not being delivered on time and ultimately leading to the current crisis.

2.4.2 Diversified Development

After achieving success in the real estate industry, Evergrande embarked on a path of diversified development to increase its market share, visibility, and brand value. However, the company's investment in unrelated diversified industries led to unfamiliarity with new business areas and information asymmetry. Enterprise managers, lacking detailed investigations, were likely to be overly optimistic about the profit expectations of newly established businesses, making incorrect decisions

and increasing the risk of investment failure.

Evergrande entered various industries, such as fast-moving consumer goods (e.g., Evergrande Ice Spring), sports, finance, and automobiles. The company's investment in the automobile industry, in particular, faced challenges due to unfamiliarity with car manufacturing technology. Despite acquiring core technology and cooperating with numerous automobile companies, Evergrande's approach to the refined automotive market was simple and crude, leading to a market value of HKD 500 billion in 2020 but now facing the risk of production suspension.

The diversified development and brand extension of Evergrande Group dispersed the company's resources, consuming a large amount of funds due to the exploration of new business areas. The investments not only failed due to unfamiliarity with the new areas but also resulted in Evergrande lacking the energy to operate its main business effectively.

2.4.3 Excessive Dividend Distribution

Evergrande's frequent and high dividend distribution strategy is a key factor in its debt crisis. Over the past decade, Evergrande's total dividends reached 1142 billion Hong Kong dollars, with the company's main business, China Evergrande, announcing a total dividend of 673 billion Hong Kong dollars. The dividend payout ratio was maintained at around 50% for many years. As the main shareholders of Evergrande, the Hui Ka Yan family obtained over 500 billion Hong Kong dollars in dividends over the past ten years.

From 2017 onwards, Evergrande's total dividends amounted to 494.5 billion Hong Kong dollars, accounting for more than 70% of the total dividends over the past decade. This is related to the introduction of 130 billion yuan in strategic investment funds by Evergrande Real Estate in 2017, most of which were converted into "debt-to-equity swaps" after the failure of Evergrande Real Estate's A-share listing. The parent

companies behind these "debt-to-equity" shares required a minimum annual return rate, forcing Evergrande to meet this demand through dividends.

Evergrande's cash dividend payout ratio remained above 50% from 2017 to 2019, far higher than the industry average. In 2020, Evergrande's last publicly disclosed complete financial report, its subsidiary Evergrande Auto lost 8.75 billion Hong Kong dollars, while Evergrande Real Estate and Evergrande Property made a combined profit of 36.45 billion Hong Kong dollars. Although Evergrande appeared to be profitable, due to the failed bet agreement with strategic investors, the profit distribution needed to be adjusted, with the minority shareholders' portion of the profit reaching 23.3 billion Hong Kong dollars, indicating that 82% of the profits created by the real estate and property sectors within Evergrande Group were pocketed by minority shareholders.

Despite facing immense financial pressure, Evergrande Group did not stop its high dividend payouts. From 2017 to 2021, the Hui Ka Yan family received nearly 20 billion Hong Kong dollars in dividends. Additionally, Hui Ka Yan personally lent a huge amount of money to Evergrande at an interest rate of over 12% and withdrew the principal and interest before the group's debt exploded.

This dividend strategy, especially in the context of an escalating debt crisis, is regarded as an abnormal behavior of the enterprise and shows Hui Ka Yan's attempt to hollow out Evergrande through dividends to obtain benefits during the crisis. Evergrande Group's total dividends ranked first in the real estate industry for five consecutive years, and although the company faced a debt predicament, Hui Ka Yan's personal wealth remained unaffected. Moreover, Hui Ka Yan was also the main beneficiary of Evergrande's high-interest U.S. dollar bonds issued overseas, further transferring domestic assets to personal overseas high-interest U.S. dollar assets, exacerbating the company's debt crisis.

2.4.4 Excessive Concentration of Equity and Overconfidence of Management

Since 2000, Evergrande Group has rapidly developed, expanding its business from Guangzhou to most southern cities. As the company's scale continued to grow, internal management problems gradually emerged. Hui Ka Yan, the founder and chairman of Evergrande Group, holds a high percentage of shares, with him and his family jointly holding 76.71% of the company's equity, of which Hui Ka Yan personally holds 63.64%. This gives him significant decision-making power in the company's operations, which can easily lead to an imbalance in corporate governance. Due to the lack of an effective internal governance structure to supervise and constrain the decision-making process, decision-making mistakes are more likely to occur.

These decision-making mistakes in Evergrande Group may be caused by several factors. Firstly, Evergrande's diversified investments involve multiple industries with low correlation to its main business, involving some unfamiliar areas, which may lead to information asymmetry and inaccuracy, affecting the judgment of managers. Secondly, as a real estate company, Evergrande still follows the traditional model of borrowing to acquire land and rapid expansion, which can easily lead to overly aggressive actions.

Evergrande Group is a typical "strong man enterprise," relying mainly on the personal charisma and management ability of its leader in the early stages of development. However, as the company's scale expands and the economic and policy environment changes, the personal decision-making ability of the leader will be challenged. If an effective governance model and scientific management model cannot be established as the company develops, it will greatly increase the operational risk of the enterprise.

2.4.5 Capital Market Exacerbating the Crisis

Evergrande Group's behavior in the capital market played a key role in exacerbating its debt crisis. Evergrande's attempts at diversified transformation outside of its real estate business, particularly its bubble-like behavior in the capital market,

significantly increased its financial risk. For example, Evergrande Auto's market value once soared to 640 billion Hong Kong dollars without actually selling any cars, and then plummeted to below 30 billion Hong Kong dollars. This drastic change in market value reflects Evergrande Group's tendency towards bubble-like behavior in capital operations.

Evergrande Auto's capital operation was essentially a means of financing. For instance, Evergrande Auto obtained 30 billion Hong Kong dollars through two rounds of fundraising, but Evergrande itself did not actually invest much. Additionally, Evergrande took a stake in Guanghui Group and packaged its market value with a story of selling cars but sold its equity at a lower value-added price in the short term. Evergrande also quickly acquired equity in the Swedish company National Electric Vehicle Sweden (NEVS) to continue maintaining its car-making myth, but this transaction did not bring much actual value to Evergrande.

Evergrande's capital market operations were not limited to the automotive industry. For example, the RVeasy Group was another case of Evergrande's rapid financing. Evergrande acquired a 51% stake in RVeasy through a share swap and used the prospect of listing as bait to obtain significant assets at a lower cost. In 2021, RVeasy raised 16.35 billion Hong Kong dollars by introducing strategic investors, increasing RVeasy's valuation to 163.5 billion Hong Kong dollars within just one year and achieving large-scale cash-out.

These capital market operations were essentially Evergrande's way of reducing its overall debt ratio on the balance sheet and financing itself through inflated valuations and complex financial arrangements. While these operations may have brought short-term relief to Evergrande's funds, in the long run, they exacerbated the company's financial risks. With the downturn in the real estate market and the rise in financial costs, the financial techniques that Evergrande relied on could no longer be sustained, ultimately leading to its deep crisis.

2.4.6 The "Three Red Lines" Policy

In August 2020, the central government issued the "three red lines" policy for the real estate industry, which prohibited enterprises with unqualified debt ratios from raising new debts and required the real estate industry to reduce corporate leverage. As listed in Table 3, Evergrande violated all three indicators in 2019 and 2020 according to the policy standard of the three red lines. As a result, Evergrande was barred from adding interest-bearing debt and had limited access to external financing. The difficulty of Evergrande's collective payment collection was further increased, and the debt repayment risk was further aggravated. As a real estate group operating with a high leverage ratio and high debt, these policies forced Evergrande Group to reduce leverage and debt. This was very unfavorable for Evergrande Group, which had been operating with high debt all the time. The financial risk accumulated in the early stage of Evergrande Group was stimulated by the macro-policy of tightening trend related to real estate, and the debt crisis broke out further.

Table 3. Comparison of Standard Indicators and Evergrande Data.

Source: Annul report

	The asset-liability ratio after excluding the advance payment	The ratio of cash to debts	Net Gearing
2019	83%	0.61	159.30%
2020	84%	0.47	152.89%
Standard Range	≦70%	≦1.00	≦100%

2.4.7 Other factors

Several additional external factors contributed to the Evergrande crisis, including insufficient guidance from credit rating agencies, securities firms' research reports favoring the company, and investors' lack of risk awareness. The financial system, particularly banks such as CITIC and Minsheng extending credit to Evergrande, also

played a role in exacerbating the crisis. Moreover, inadequate audit risk alerts, lack of professional opinions on off-balance sheet and consolidated statements, and inadequate supervision by the China Banking and Insurance Regulatory Commission (CBIRC) over Evergrande Wealth and Shengjing Bank further compounded the issue. The misappropriation of real estate regulatory accounts and the one-size-fits-all approach adopted by regulatory authorities in implementing policies also contributed to the overall crisis faced by Evergrande.

Chapter 3 Comparative Analysis of Real Estate Market in China and US

3.1 Real Estate Market in China

3.1.1 Introduction of Husing Market in China

China's real estate market has evolved significantly over the past several decades, closely tied to the country's changing economic policies and development. This evolution can be divided into five distinct phases, each characterized by unique features and challenges.

- Phase 1 (1949-1978) saw a centrally planned economy, with the nation allocating housing to employees at low costs.

- Phase 2 (1978-1987) introduced a cost-sharing approach, with the government, firms, and individuals each contributing to housing costs.

- Phase 3 (1987-1991) marked the beginning of real estate marketization, as provincial governments began selling land use rights and experimenting with the Public Accumulation Fund.

- Phase 4 (1992-1997) saw the implementation of the Urban Real Estate Law, leading to the establishment of real estate brokerage companies and property management agencies, signaling a shift towards a free market system.

- Finally, Phase 5 (1998-present) has been characterized by rapid development and market-driven growth, with welfare housing abolished and individuals relying on their own savings and wages to purchase real estate.

Over the past two decades, China's real estate sector has experienced a remarkable

boom, with skyrocketing prices and countless new developments. The industry has become a crucial pillar of the economy, accounting for around 29% of GDP and creating millions of jobs. However, this rapid growth has also led to concerns about affordability and sustainability.

In 2020, the Chinese government introduced the "three red-line" policies to promote a healthier and more sustainable real estate market. These policies set limits on developers' debt ratios and restricted banks from providing unlimited loans. While aimed at mitigating risks, these policies have led to a significant loss of funding for real estate companies, triggering a crisis in the industry.

The case of Evergrande Group, one of China's largest real estate developers, highlights the severity of the situation. Evergrande's inability to meet its bond obligations and the subsequent halt in construction have left many buyers with unfinished homes and depleted savings, leading some to stop their mortgage payments altogether.

The real estate crisis has been exacerbated by declining market sentiment, fueled by the COVID-19 pandemic and the "three red-line" policies. Investor confidence has waned, leading to plummeting stock prices and a vicious cycle of market decline. The economic downturn and the prevalence of unfinished housing projects have further increased the pressure on individuals to pay their mortgages, with some buyers opting to stop payments entirely.

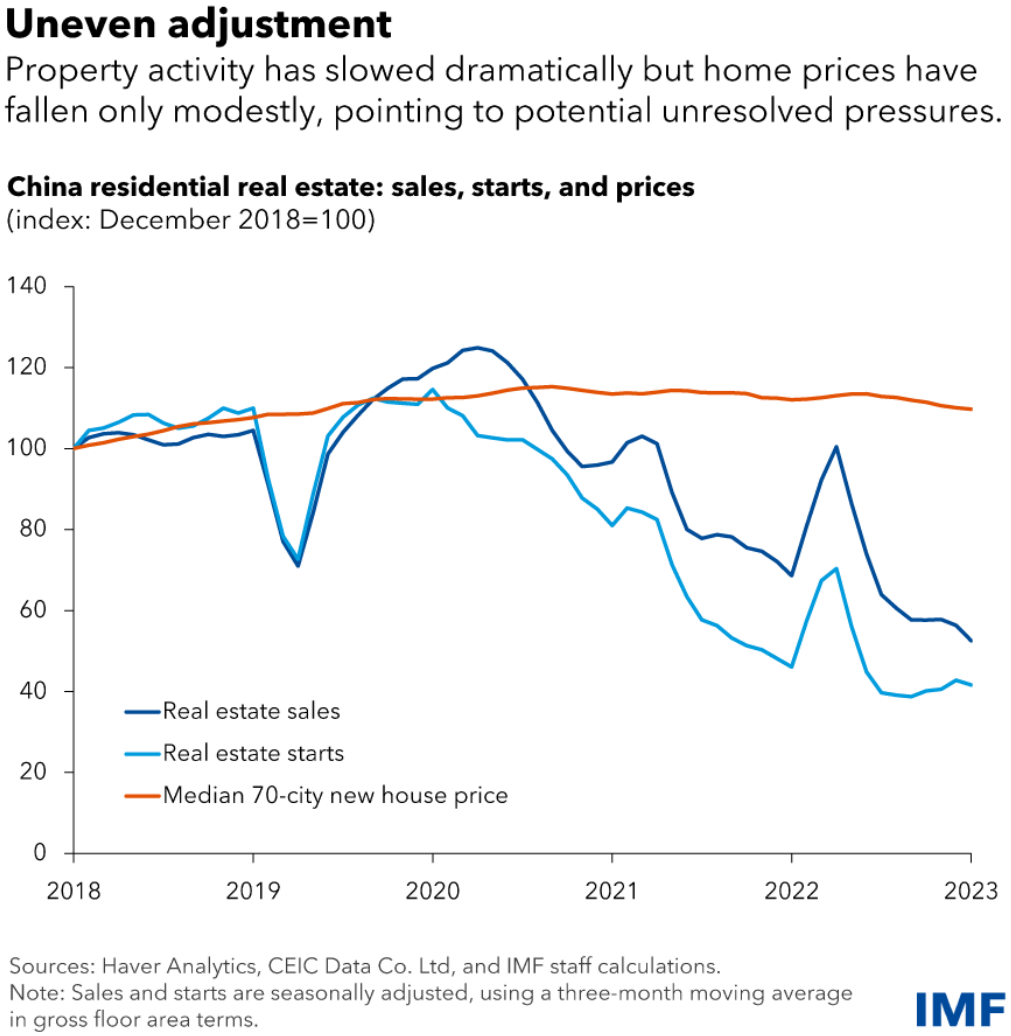

Figure 9. China residential real estate: sales, starts, and prices

Source: China's Real Estate Sector: Managing the Medium-Term Slowdown, IMF https://www.imf.org/en/News/Articles/2024/02/02/cf-chinas-real-estate-sector-managing-the-medium-term-slowdown#:~:text=Real%20estate%20has%20long%20been,the%20buildup%20of%20significant%20risks.

In response to the growing crisis, the Chinese government has undertaken aggressive interventions to reduce market pessimism and support the industry. These measures include interest-free loans for the completion of unfinished buildings and local government initiatives to stimulate market demand. However, the effectiveness of

these interventions remains to be seen, as the industry continues to grapple with significant challenges.

Looking ahead, China's real estate market faces additional pressures from structural factors, particularly demographic changes. As the population declines and urbanization slows, the need for new housing is expected to diminish. This, coupled with tightening fiscal constraints and reduced demand for older housing, suggests that real estate investment is likely to remain subdued in the coming years.

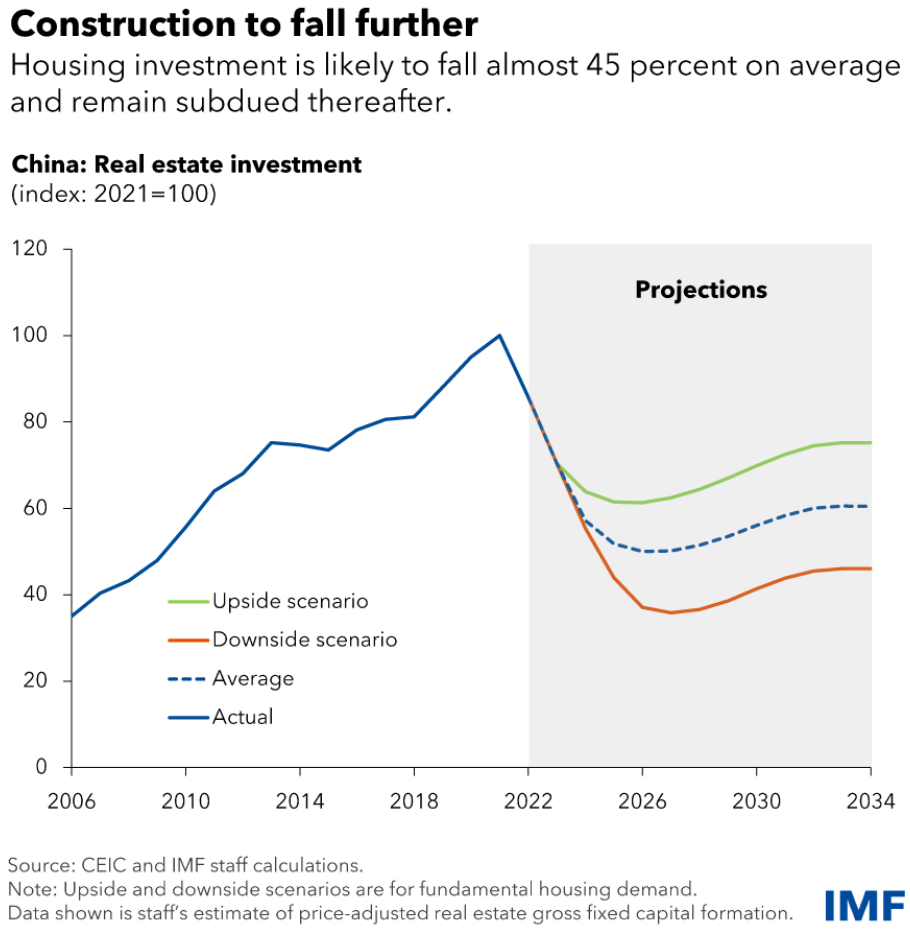

Figure 10. China residential real estate: sales, starts, and prices

Source: Construction to fall further, IMF https://www.imf.org/en/News/Articles/2024/02/02/cf-chinas-real-estate-sector-managing-the-medium-term-slowdown#:~:text=Real%20estate%20has%20long%20been,the%20buildup%20of%20signifi

cant%20risks.

To achieve a smoother transition and mitigate risks, several key steps should be taken. First, allowing for more market-based adjustments in home prices and quickly restructuring insolvent developers will help clear the overhang of inventories and ease fears of further price declines. Second, phasing out rules that allow banks to avoid recognizing bad loans to developers will provide a clearer picture of the industry's health. Third, supporting viable developers while tightening rules to prevent future risk build-up will contribute to a more stable market. Fourth, insuring homebuyers against the risk of developers failing to complete purchased homes and implementing stricter escrow rules for presale financing will help restore confidence and protect buyers. Finally, introducing a nationwide property tax and improving alternative saving options will reduce households' reliance on housing as an investment.

In conclusion, China's real estate market has undergone a remarkable transformation over the past several decades, from a centrally planned system to a market-driven one. While the sector has been a key driver of economic growth, it has also accumulated significant risks, including stretched home prices, excessive developer borrowing, and a heavy reliance on real estate for investment. The current crisis, triggered by the "three red-line" policies and exacerbated by the COVID-19 pandemic, has exposed the vulnerabilities of the industry and the broader economy.

To navigate this challenging landscape and achieve a more sustainable future, Chinese policymakers must strike a delicate balance between supporting the industry and mitigating risks. By implementing targeted interventions, promoting market-based adjustments, and addressing structural issues, China can work towards a more stable and resilient real estate market that contributes to the country's long-term economic health and social well-being. The path ahead may be difficult, but with careful planning and execution, China's real estate sector can emerge from this crisis stronger and better prepared for the future.Detail the structure of real estate financing in China,

including the role of debt, equity financing, government policies, and shadow banking.

3.1.2 Challenges of Real Estate Market in China

(1) Debt Sustainability Challenges

a. High Leverage Levels

Chinese real estate companies have long relied heavily on development-oriented business models, which require substantial capital investment and are characterized by high debt and heavy capital intensity. As a result, the overall real estate industry in China has high debt ratios. At the end of 2021, the median asset-liability ratio of A-share listed real estate companies was 68.9%, second only to the financial industry (82.0%) and higher than traditional capital-intensive industries such as utilities (58.0%) and energy (48.9%). During the same period, the interest coverage ratio of real estate companies was only 2.6, which is relatively low compared to other industries. In recent years, the leverage pressure on Chinese real estate companies has increased significantly. From 2008 to 2021, the median asset-liability ratio of A-share real estate companies rose from 62.6% to 68.9%, an increase of 6.3 percentage points.

b. Declining Share of Self-owned Funds in Development Funds

In recent years, the scale of real estate development funds in China has rapidly increased. From 2011 to 2021, the scale of real estate development funds expanded from 8.6 trillion yuan to 20.1 trillion yuan, with self-raised funds, domestic loans, and other funds accounting for 32.5%, 11.6%, and 55.8%, respectively. To improve the efficiency of capital turnover, real estate companies have increased their use of external funds, driving changes in the structure of real estate development funds. From 2011 to 2021, the proportion of self-raised funds by real estate developers decreased from 40.9% to 32.5%, while the proportion of deposit and advance payment funds raised through the housing pre-sale mechanism and personal mortgage

loans increased from 26.2% and 10.1% to 36.8% and 16.1%, respectively.

c. High Comprehensive Financing Costs for Private Real Estate Companies

Real estate companies' liabilities can be divided into interest-free liabilities and interest-bearing liabilities. Interest-free liabilities mainly consist of contract liabilities, advance receipts, and accounts payable generated by pre-sales, while interest-bearing liabilities primarily include various loans, non-standard debt rights, and domestic and foreign bonds payable. If the interest-bearing liabilities of real estate companies are ranked from low to high according to financing costs, they are domestic credit bonds, development loans, overseas credit bonds, and non-standardized debts. The qualifications of real estate companies have a significant impact on the availability of financing instruments, and there are considerable differences in debt costs among companies with different qualifications. State-owned real estate companies mainly rely on bank loans and domestic bonds for funding, with relatively low comprehensive financing costs. For example, Poly Development's financing costs were as low as 4.77% and 4.65% in 2020 and 2021, respectively. Most private real estate companies primarily depend on non-standardized debt rights and overseas bonds for financing, with relatively high comprehensive financing costs. For instance, Landsea Green Properties' financing costs were as high as 8.2% and 8.74% in 2020 and 2021, respectively.

d. Extensive Use of Off-balance-sheet and Hidden Debts to Disguise Leverage

In recent years, real estate companies have widely used off-balance-sheet and hidden debts to expand financing channels, disguising their true leverage and amplifying debt risks. Financing from non-consolidated project companies is an important way for real estate companies to expand off-balance-sheet debt. Real estate companies hold shares in project companies, form affiliated relationships with them, and improve the probability of project companies obtaining external financing through financing guarantees. According to regulations, project companies' liabilities are not included in

real estate companies' balance sheets, but real estate companies need to bear some debt risks. From 2008 to 2021, the ratio of total external guarantees to net assets of A-share real estate companies increased from 21.5% to 70.4%, while the ratio of long-term equity investments to owners' equity increased from 10.3% to 28.9%. These changes are largely the result of the expansion of off-balance-sheet financing by real estate companies. In addition to non-consolidated project companies, real estate companies also disguise leverage by converting financial leasing into operating leasing, using upstream and downstream related party liabilities, and asset securitization.

Regarding hidden debts, the perpetual bonds issued by real estate companies are accounted for as owners' equity. However, perpetual bonds have an interest rate jump mechanism and are essentially debt instruments with the interest rate jump date as the maturity date. At the end of 2020, the balance of perpetual bonds of A-share real estate companies reached 97.8 billion yuan, more than ten times higher than in 2015. Additionally, the consolidated subsidiaries of real estate companies with partner shareholdings are also an important source of hidden debt. Partner shareholdings are reflected in the accounting as an increase in minority shareholders' equity in the owners' equity of real estate companies. In fact, investors often require real estate companies to pay high fixed interest rates, which has the characteristic of "equity in form but debt in substance." From 2008 to 2021, the proportion of minority shareholders' equity in the owners' equity of listed real estate companies increased from 9.1% to 33.8%, with some real estate companies even exceeding 60%.

(2) High Liquidity Risk

a. High Degree of Asset-Liability Maturity Mismatch

The asset side of real estate companies mainly consists of inventories with poor liquidity, including land, projects to be built, under construction, and for sale. At the end of 2021, inventories accounted for 53.7% of the total assets of A-share real estate

companies, far higher than other industries. The realization cycle of real estate companies' inventories, from project development to completion, generally ranges from 2.5 to 4 years. However, the maturity of interest-bearing liabilities of real estate companies is significantly shorter than the realization cycle of inventory assets, requiring rolling financing on the liability side to support project operations on the asset side. Specifically, the term of development loans for real estate companies generally does not exceed 3 years, and more than 50% of credit bonds have a maturity of less than 3 years. The average term of trust financing is 1.5 years. Before the project generates cash flow from sales, real estate companies need to maintain project operations through their own funds, pre-sale funds, and external financing, facing significant maturity mismatch pressure. When the market cools down and the pressure on project sales increases, the inventory recovery cycle of real estate companies is further prolonged, significantly increasing liquidity risk.

b. "Capital Pool" Operation of Pre-sale Funds

To address the shortage of construction funds, China has implemented a commodity housing pre-sale system since 1994, allowing real estate companies to sell houses under construction and recover funds in advance. The pre-sale system monitors the flow of funds through the establishment of supervisory accounts to ensure that funds are used for their designated purposes. However, in practice, real estate companies use various means to operate pre-sale funds in a "capital pool" manner, exacerbating liquidity risk.

(3) Risk of Contagion

The risks in the real estate industry can easily lead to serious contagion effects, with the entire industry and society having to pay the price. The main contagion channels include the following aspects:

a. Risk Spillover of Affiliated Investment Projects

Although real estate companies do not engage in interbank lending like financial institutions, it is common for companies to jointly invest in and develop projects. This is beneficial for division of labor, cooperation, leveraging strengths, and diversifying the risks of individual investments. However, it also forms a potential risk contagion path through the interconnection of balance sheets. Several problematic real estate companies that have produced contagion effects own large-scale direct affiliated project investments.

b. Risk Spillover in Sales

If the development projects of healthy real estate companies are located in the same region as those of problematic real estate companies, when the problematic companies heavily discount their houses, healthy companies will face pressure from declining sales revenue. Some large real estate companies have annual sales revenues reaching hundreds of billions or even close to a trillion yuan. Behind such large-scale sales is a very broad city layout, and the risk spillover is sufficient to affect a considerable number of peer companies. Moreover, when problematic real estate companies discount their houses, it not only leads to disorder in the commercial housing sales market but also impacts the local land auction market and government land transfer revenue.

c. Risk Spillover in Financing

When problematic real estate companies experience financial distress, external rating downgrades, or debt defaults, it triggers market risk aversion sentiment. Financial institutions tighten financing conditions, and investors adjust their asset portfolios, leading to a plunge in the securities prices of other real estate companies and interruption of financing. Since the second half of 2021, the number of "thunderstorm" events among real estate companies has increased, causing significant fluctuations in the U.S. dollar high-yield bond index of real estate companies and the stock price index of the A-share real estate sector.

d. Risk Spillover in the Industrial Chain

The industrial chain of the real estate industry covers a wide range, with the upstream involving land and raw materials (construction materials, machinery, etc.), the midstream mainly focusing on real estate development and operation, and the downstream including industries such as home appliances, furniture, and decoration. Once the risks of large real estate companies are exposed, the operations of related companies in the industrial chain will be affected. For example, dozens of companies, including Quanzhou, Jianghe Group, Zhongheng Design, Oppein Home, Robam Appliances, Shanghai Electric, Jianyi Group, and Sofia, made risk impairment provisions for related payments to Evergrande Group in their 2021 annual reports, all suffering significant losses due to Evergrande Group's debt issues.

(4) Pro-cyclical Effects

The operating conditions of real estate companies have a significant impact on China's economic development. When large real estate companies fall into operational difficulties, it increases the downward pressure on the economy and produces an "accelerator" effect. The transmission chain can be summarized in the following three aspects:

a. Recession Effect of Bank Balance Sheets

Bank balance sheets are highly correlated with the balance sheets of real estate companies, mainly reflected in banks providing development loans to real estate companies, offering housing mortgage loans to individual homebuyers (forming pre-sale funds for real estate companies), extending credit support to upstream and downstream companies in the real estate industrial chain, and bank-affiliated asset management institutions purchasing stocks and bonds issued by real estate companies. Calculations based on data from some listed banks show that real estate-related assets account for approximately 20% to 30% of banks' total assets. In addition, land and

real estate projects are the main collateral for bank loans. In 2020, the scale of collateralized loans of A-share listed banks accounted for 53.2% of the loan balance. Among collateralized loans, about 70% use real estate or land as collateral. A decline in real estate and land prices will lead to a shrinkage in the "net value" of collateral, causing banks to tighten credit conditions and increasing the downward pressure on the economy.

b. Recession Effect of Government Balance Sheets

Real estate is an important source of revenue for the Chinese government. From 2010 to 2020, China realized a total of 62.6 trillion yuan in land transfer revenue, of which state-owned land transfer revenue amounted to 49.8 trillion yuan. During the same period, China's total public fiscal revenue was 161.5 trillion yuan, with real estate-related fiscal revenue contributing 19.2 trillion yuan, accounting for 11.9%. The sum of land transfer fees and real estate industry revenue accounted for approximately 8.8% of China's GDP. Local governments have an even higher degree of dependence on real estate. In 2020, land transfer revenue accounted for a staggering 91.3% of local government fund revenue. The five real estate tax revenues accounted for a combined 18.6% of local general public budget revenue. If the real estate industry suffers a heavy blow, it will significantly affect the fiscal expansion capacity of government departments, producing an "accelerator" effect on the economic downturn.

c. Recession Effect of Real Estate Companies and Household Balance Sheets

The high-leverage operating model of real estate makes it prone to a noticeable "net worth-debt" spiral contraction effect. When real estate prices fall, the value of real estate companies' inventories shrinks, and their debt pressure increases. At the same time, real estate is one of the important assets held by the household sector in China. At the end of 2019, the total assets of the household sector in China amounted to 232.5 trillion yuan, of which real estate-related assets accounted for 57.5 trillion yuan, or 24.7%. A decline in real estate prices will erode the balance sheets of households,

increase the leverage ratio of the household sector, and suppress their consumption demand. For residents who have purchased pre-sold commercial housing from problematic real estate companies, a drop in real estate prices will significantly increase the probability of them terminating their purchases, thus spreading the risk to a wider range.

3.2 Real Estate Market in US

3.2.1 Introduction to the U.S. Real Estate Market

The real estate and housing market is a crucial component of the United States economy, playing a significant role at both the individual and aggregate levels. Approximately 65% of occupied housing units in the U.S. are owner-occupied, and homes often represent a substantial portion of household wealth. Moreover, housing construction provides widespread employment opportunities across the country. At the aggregate level, housing accounts for a significant share of all economic activity, and fluctuations in the housing market can have broader effects on the overall economy.

(1) Household Net Worth and Employment

For many individuals, purchasing a home is one of the largest investments they will make in their lifetime. As of the third quarter of 2022, owner-occupied real estate accounted for slightly more than a quarter of households' net worth, according to data from the Federal Reserve. The share of households' net worth derived from their homes has remained relatively stable over the past several years, following a significant decline after the 2007-2009 recession.

Figure 11. Total Spending in Housing Market, As a percentage of GDP

Source: Bureau of Economic Analysis, National Income and Produc Accounts, Table 1.1.5, and Table 2.3.5.

Residential construction is a major industry in the United States, employing a large number of people. Employment in this sector has experienced fluctuations, particularly during the housing market bubble and subsequent recession. However, employment has recovered in recent years, reaching approximately 903,000 by November 2022, according to data from the Bureau of Labor Statistics.

(2) Housing and the Broader Economy

The housing market is incorporated into gross domestic product (GDP) through residential fixed investment and spending on housing services. In 2021, residential fixed investment accounted for approximately 4.8% of GDP, while spending on housing services accounted for 11.9% of GDP. Combined, spending within the housing market accounted for 16.7% of GDP in 2021.

Housing's share of GDP has generally trended upwards, with the notable exception of the housing market crash in 2007. Residential investment experienced rapid growth between 2000 and 2005 before declining sharply as the housing bubble burst. Despite

a steep drop in total housing spending, spending on housing services continued to rise as a percentage of GDP throughout this period. Housing's share of GDP has yet to reach its 2005 peak.

The housing market can also have indirect effects on the broader economy through wealth effects. Changes in housing prices can impact consumer spending, as rising prices encourage homeowners to spend more due to increased confidence, home equity, and rental income, while declining prices have the opposite effect. Given that consumer spending accounts for roughly 70% of the U.S. economy, changes in housing wealth can result in significant changes in economic growth.

(3) Monetary Policy and the Housing Market

Federal Reserve decisions can influence the housing market through changes in the cost of financing a home purchase. Most Americans take out a mortgage to purchase a home, and the Federal Reserve can influence mortgage interest rates by adjusting its benchmark federal funds rate. Higher mortgage interest rates increase the overall cost of purchasing a home, while lower rates make homeownership more affordable.

During economic downturns, such as the 2007-2009 recession and the COVID-19 pandemic, the Federal Reserve has taken steps to directly decrease mortgage interest rates by purchasing mortgage-backed securities. While this has led to temporary drops in mortgage rates, rates have recently increased as the Federal Reserve has tightened monetary policy.

(4) Housing Market Conditions

Several broad indicators are used to assess the health of the housing market, although national indicators may not fully capture variations among local markets.

- **Housing Prices:** After falling significantly during the 2007-2009 recession, average nominal housing prices have been increasing nationally each year since

2012, surpassing their previous nominal peak in 2016. While growth has slowed recently, it remains high in nominal terms.

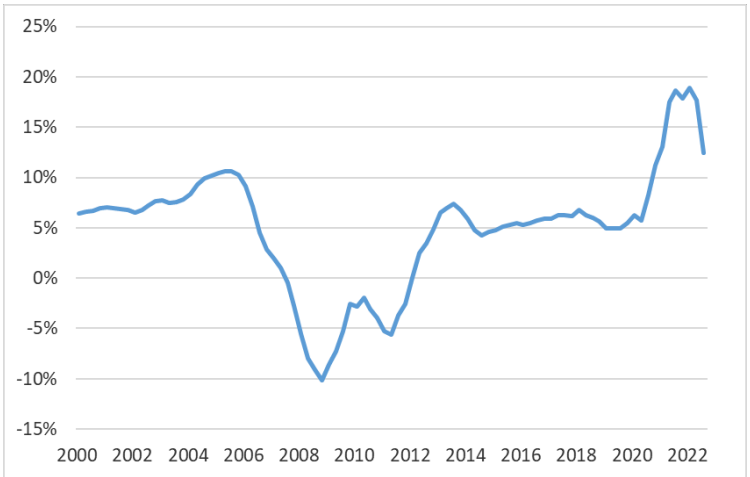

Figure 11. Nominal Housing Prices, Year-over-year change

Source: Federal Housing Finance Agency, House Price Indexes, Seasonally Adjusted Purchase-Only Index.

- **Home Sales:** Increasing home sales are generally viewed as a sign of a strong housing market and economy, as they suggest that individuals have both the income and positive economic outlook to make a purchase. Home sales declined sharply during the 2007-2009 recession but have since recovered.

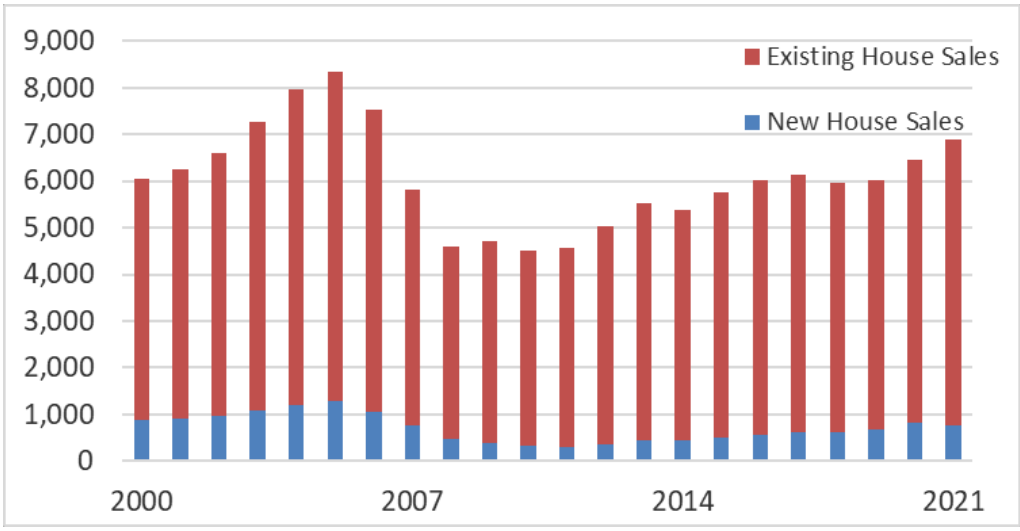

Figure 12. Annual House Sales, In thousands

Source: Department of Housing and Urban Development, U.S. Housing Market Conditions

- **Residential Investment:** Residential investment, as a percentage of GDP, is used to measure the health of the housing market. In dollar terms, residential investment peaked in 2005 before falling significantly following the housing bubble. It has recently surpassed 2005 levels in 2020.

- **Housing Inventory:** Low housing inventory, or the supply of housing available for sale, generally leads to upward pressure on house prices. Housing inventory has been relatively low for the past decade.

3.2.2 The 2008 Housing Crisis

The 2008 Housing Crisis in the United States was a significant event that had far-reaching consequences for the economy and financial markets. The crisis was primarily caused by a combination of factors, including the rise of subprime mortgage lending, the use of complex financial instruments, and a lack of proper regulation in the financial sector.

In the early 2000s, there was a significant expansion of mortgage lending, particularly in the subprime market, which catered to borrowers with lower credit scores and limited income. Many of these subprime loans had predatory features and were marketed to consumers without adequate information or preparation. The majority of this lending was for refinancing existing homeowners, rather than for purchasing new homes.

The expansion of subprime lending was largely driven by the demand from Wall Street for mortgage-backed securities (MBS). Investment banks and other financial institutions repackaged these risky loans into complex financial products, which were then sold to investors. This process spread the risk of subprime loans throughout the

financial system.

The housing bubble burst in 2007 when home prices began to decline, and interest rates started to rise. This led to a wave of defaults and foreclosures, particularly among subprime borrowers who could no longer afford their mortgage payments. As the value of MBS and related financial products plummeted, banks and other financial institutions suffered significant losses.

The crisis quickly spread beyond the housing market and led to a broader financial crisis. Many major financial institutions, such as Lehman Brothers, faced bankruptcy, and the entire financial system was on the brink of collapse. The U.S. government intervened with a series of bailouts and stimulus measures to stabilize the economy and prevent a complete meltdown.

Some of the key government responses to the crisis included:

- The Emergency Economic Stabilization Act of 2008, which authorized the $700 billion Troubled Asset Relief Program (TARP) to purchase distressed assets from financial institutions.

- The Federal Reserve's quantitative easing programs, which involved the purchase of Treasury securities and mortgage-backed securities to lower long-term interest rates and stimulate the economy.

- The Dodd-Frank Wall Street Reform and Consumer Protection Act of 2010, which introduced sweeping reforms to the financial sector to prevent future crises.

Despite these efforts, the housing crisis had a profound impact on the U.S. economy. Millions of Americans lost their homes, and the unemployment rate rose to 10% in 2009. The crisis also exposed significant weaknesses in the financial system and highlighted the need for stronger regulation and oversight.

In the aftermath of the crisis, there has been much debate about the role of government policies, such as the Community Reinvestment Act and the actions of government-sponsored enterprises like Fannie Mae and Freddie Mac, in contributing to the housing bubble. However, most experts agree that the primary cause of the crisis was the proliferation of risky lending practices and the failure of regulators to properly oversee the financial system.

The 2008 housing crisis serves as a stark reminder of the importance of responsible lending, effective regulation, and the need for a stable and sustainable housing market. While the U.S. housing market has largely recovered since the crisis, the legacy of the event continues to shape policy discussions and debates about the role of housing in the broader economy. Outline the US model, emphasizing mortgage financing, REITs, and the role of federal and state regulations.

Chapter 4 Rethinking Strategies and Findings

4.1 Financing Model Differences between China and US Real Estate Markets

The real estate industries in China and the United States exhibit significant differences in various aspects, including their financing models. Understanding these differences is crucial for investors, developers, and policymakers to make informed decisions and adapt to the unique challenges and opportunities in each market.

In the US real estate market, financing models are more diverse and rely heavily on direct financing. Equity financing plays a significant role, with Real Estate Investment Trusts (REITs) and private equity funds being major players. REITs allow individual investors to participate in the real estate market by purchasing shares, while private equity funds pool capital from institutional investors to invest in real estate projects. On the debt financing side, US developers have access to various channels, including

long-term loans with maturities of 5-10 years. This long-term debt helps reduce maturity mismatch risks and provides developers with more financial stability.

Securitization is another key feature of the US real estate financing landscape. Residential Mortgage-Backed Securities (RMBS) initiated by developers allow them to transfer risks to investors in the secondary market. A case in point is Hovnanian Enterprises (HOV), which successfully navigated the 2008 financial crisis by leveraging long-term debt financing and RMBS. HOV's ability to obtain long-term funds and transfer risks through securitization played a crucial role in its survival during the crisis.

In contrast, the Chinese real estate market relies heavily on indirect financing, with bank loans and domestic/overseas bond issuance being the primary debt financing channels. Equity financing is mainly conducted through initial public offerings (IPOs) and share placements by developers. However, the shadow banking system, including private funds, trust plans, and broker asset management plans, also plays a significant role in providing financing to developers.

Chinese developers often face challenges such as high leverage, short-term debt, and asset-liability mismatch risks. The reliance on short-term debt exposes developers to refinancing risks and makes them more vulnerable to market fluctuations. Additionally, the indirect financing model may lead to higher systemic risks in the financial system, as banks and non-bank financial institutions act as intermediaries between social capital and developers.

Several factors contribute to the differences in financing models between China and the US. First, the two countries are at different stages of economic development. China's real estate market is still in a high-growth phase, while the US market is more mature, with a focus on stock transactions. Second, developer business models differ. US developers often provide mortgage financing services to customers, while Chinese developers primarily focus on development activities. Third, the US has a more

developed capital market, enabling various financing channels and instruments. Finally, government policies, legal frameworks, and tax regulations in each country shape the financing environment for real estate developers.

As China's real estate market shifts from a growth-oriented phase to a stock-based market, developers must adapt and improve their financing efficiency. Accessing long-term funds and diversifying financing channels will be crucial for their survival and growth. Moreover, China should develop a securitization system that suits its national conditions, enabling developers to transfer risks and attract a broader range of investors.

In conclusion, the financing model differences between China and the US real estate markets stem from a combination of economic, market, and regulatory factors. While the US market benefits from a diverse range of financing options and a developed capital market, the Chinese market faces challenges related to high leverage, short-term debt, and systemic risks. As the Chinese real estate industry evolves, developers and policymakers must work together to create a more sustainable and efficient financing environment that supports the long-term health of the sector.

4.2 Evergrande’s Comparison with Lehman Brothers

As China's real estate bubble bursts, parallels are drawn between the current situation and the events leading up to the collapse of Lehman Brothers. Both Evergrande and Lehman Brothers carried heavy debt loads, were industry leaders, and wielded significant influence over markets and society. Lehman Brothers, once the fourth-largest investment bank in the U.S., filed for bankruptcy in 2008 with assets exceeding $630 billion, sparking the global financial crisis. Lehman's downfall was attributed to its involvement in the subprime mortgage crisis, driven by loose credit assessments and an overleveraged portfolio.

Similarly, Evergrande and Lehman both focused on the speculation of the housing

sector in the real estate industry. They both believed in excess demand for housing over supply, with Evergrande providing supply while Lehman granted access to people. However, the impact on the market differed. Lehman Brothers' downfall was directly linked to the fall of American house prices, while Evergrande's debt-paying ability was curtailed by governmental regulations stabilizing house prices. Evergrande's debt crisis stemmed from profit shrinkage resulting from stabilized house prices, rather than a significant drop in house prices.

Furthermore, the asset values of Lehman and Evergrande differ significantly. While Lehman's assets were decimated by falling share prices and the devaluation of mortgage-backed securities, Evergrande's real estate and shareholdings retain high market value. Evergrande has the option to save itself through downsizing or slowing development, a luxury Lehman Brothers did not have.

The responses from the respective governments also differ. The U.S. government's lack of intervention during Lehman's crisis worsened the situation, leading to a massive run on the bank. In contrast, China's government has been more proactive, with state-owned banks likely preventing a mass run on Evergrande by responding to state policy. The government has a history of stepping in and taking over troubled companies, as seen with Hainan Airlines in 2020, which could potentially stabilize the situation.

The comparisons between Evergrande and Lehman Brothers highlight the distinct paths that led to their crises, despite similarities in their business strategies and market impacts. The Chinese government's response to Evergrande's crisis could prove instrumental in preventing a similar catastrophic outcome as seen with Lehman Brothers.

4.3 Implications of the US Housing Crisis for China

4.3.1 Difference between the US housing crisis and the current real estate risks

faced by China

The US housing crisis went through a process of "massive defaults in the subprime market - panic in the financial market - vicious cycle between the real economy and finance." The current problems in China's real estate market are significantly different from those in the US, with at least three distinctions:

- First, the subprime crisis was triggered by household debt, while China's debt risk is concentrated in real estate companies, with a different risk transmission mechanism. The outbreak of the subprime crisis began with a downward spiral in housing prices caused by homeowners defaulting and banks selling properties. In contrast, China does not have the conditions for this transmission mechanism. Even if debt risk spreads to the household sector, it is unlikely that China will experience a wave of defaults, and the probability of banks reclaiming properties and selling them on a large scale is low. This is because Chinese homebuyers need to bear unlimited liability for their mortgages. Even if the property is reclaimed by the bank and auctioned off, the buyer still needs to continue to bear the remaining debt. In contrast, the US has personal bankruptcy laws, and once homeowners' default, the bank's reclamation of the property terminates the lending relationship with the buyer. In the same situation, Chinese homebuyers choosing to default on their mortgages would have more severe adverse consequences for themselves. Moreover, the Chinese government has a strong ability to control housing prices, and the probability of a spiral decline in housing prices is low. Compared with the US, China's debt risk is mainly concentrated in the corporate sector, transmitted through the chain of real estate companies, upstream and downstream enterprises, and financial institutions. Whether the debt crisis of real estate companies can form systemic risk depends on the ability of the crisis to spill over to the financial system.

- Second, the current debt risks of real estate companies mostly remain at the

individual level, with a low possibility of spilling over to the financial system. On the one hand, although Chinese real estate companies have high debt levels, their securitization level is low, and the debt risk is limited to banks and trusts, with a clear and controllable risk transmission path. On the other hand, various market estimates indicate that the risk exposure of bank housing loans, corporate bonds, non-standard housing-related debts, etc., is still within a controllable range. Even in a pessimistic scenario, the impact of default risk on banks' balance sheets is limited.

- Third, the essence of a financial market run is a crisis of confidence. In the case of a strong willingness and ability of the government to intervene, the possibility of a panic crisis in the financial market is low.

Therefore, it is unlikely that China will experience a financial crisis triggered by a downturn in the real estate market. However, a low probability of systemic financial risk does not mean that the current downward pressure on the real estate industry will not affect the real economy.

Compared with the US, China's real estate industry has a strong direct impact on the real economy. First, the real estate industry chain is long, and the debt risk of real estate companies will bring a significant impact on upstream and downstream industries, directly dragging down the real economy from the corporate side. Second, defaults by real estate companies may lead to unfinished pre-sold housing, which will impact the balance sheets of home-buying families, directly dragging down the real economy from the household side. Therefore, the short-term policy focus for China to deal with the debt risk of real estate companies is to provide relief to real estate companies and ensure the delivery of pre-sold housing.

In the long run, attention needs to be paid to the impact of real estate transformation on the real economy and the associated risks between real estate and local government debt:

- First, the real estate industry has expanded rapidly in the past decade. While attracting a large amount of investment and creating numerous jobs, it has also, to a certain extent, squeezed out investment and employment opportunities in other industries. The misallocation of factor resources has hampered productivity progress. The real estate industry is mainly composed of construction and service industries, with production efficiency inherently lower than that of the manufacturing industry. In the context of declining productivity in the real estate industry and the immaturity of alternative industries to drive economic growth, the dragging effect of factor resource misallocation on productivity and long-term economic growth will become increasingly evident.

- Second, the slowdown in the real economy reduces household income, and the passive rise in the household debt-to-income ratio will suppress household consumption, further dragging down the real economy. In the US, periods of mortgage boom are often accompanied by rising household consumption. This is because the mortgage boom pushes up housing prices, and the appreciation of housing can be directly transferred to residents for short-term consumption through home equity loans. However, in China, the rise in housing prices does not have a strong pulling effect on consumption, and the increase in household leverage suppresses consumption. Especially when the sluggishness of the real estate market affects the real economy, leading to a decline in household income and a passive rise in the debt-to-income ratio, the problem of insufficient growth momentum in household consumption will become prominent.

- Third, real estate is closely linked to land finance and land-based finance, and local governments' explicit and implicit debts are deeply intertwined with banks. The associated and derivative risks between real estate and local government debt may pose a greater threat to the financial system than the single risk of real estate companies defaulting on their debts. At the same time, investing resources to resolve local government debt will weaken the government's ability to make

counter-cyclical adjustments to the economy and reduce policy space.

4.3.2 Implications of the US experience and lessons for China

- First, improve the financial regulatory system and steadily promote financial innovation under the framework of prudential regulation. The occurrence of the subprime crisis exposed the drawbacks of mixed operations and separate supervision. In the general trend of mixed operations in the financial industry, a financial regulatory system that matches it should be established and improved, and macro-prudential management and micro-prudential supervision should be coordinated. At the same time, on the one hand, financial innovation can only ensure the stability and long-term development of the financial market if it is carried out under the framework of prudential supervision. On the other hand, prudential supervision also needs to actively support benign innovation and maintain the enthusiasm and initiative of financial institutions for innovative development.

- Second, optimize the risk identification and control system for the real estate market. Strengthen the monitoring of real estate companies' debts and optimize the system for identifying, assessing, and responding to risks in the real estate market. Considering the structural differentiation of China's real estate market, a risk identification and control system for financial risks in the real estate market at different levels in different regions should be constructed based on the supply and demand situation of the real estate market in each region, paying attention to the regional correlation of real estate risks to ensure the safe and stable development of the real estate market.

- Third, strengthen financial support for high-quality real estate companies and disperse financial risks at the development end of real estate. Since China's real estate financial risks are hidden at the development end of real estate companies, in the short term, financial support for high-quality real estate companies should

be strengthened to improve the financing pressure of real estate companies and stabilize their business expectations. In the long run, risk prevention should be given equal emphasis with risk resolution. At present, the financing channels for real estate developers in China are relatively single, with a high dependence on bank loans, which concentrates the real estate market risk on banks at the center of the financial industry, which is not conducive to financial market stability. Accelerating the development of direct financing for real estate companies and the reasonable use of REITs for real estate developers will help optimize the financing structure of real estate companies, improve development efficiency, reduce real estate companies' dependence on banks, and lower the systemic risk of real estate companies within the financial system.

- Fourth, expand the supply of affordable rental housing and promote the development of affordable rental housing through public REITs. The US experience shows that in the case of high housing prices, blindly increasing the homeownership rate of low-income and young groups in the short term will increase the credit risk of the financial system and exacerbate the fragility of the financial system. Therefore, to solve the housing difficulties of low-income and young groups, the focus of short-term policy should be on rental housing, especially affordable rental housing. Expanding the supply of affordable rental housing will help optimize the structure of housing supply and provide channels for solving the housing difficulties of young people. At the same time, it will not increase the debt burden of residents and will help stabilize the financial market. Meanwhile, accelerating the construction of affordable rental housing, and public REITs are key elements. Public REITs will effectively support the development of the affordable rental housing market, help connect the commercial loop of affordable rental housing, and act as a stabilizer for the long-term healthy development of the real estate market.

- Fifth, from a long-term perspective, stabilizing the economy is the key to

stabilizing real estate, and high-quality development is the way to resolve real estate risks. The expected income level is the fundamental driving factor of housing prices, and the long-term growth of the real estate market cannot be separated from the sustained improvement of the economy and household income. The post-subprime crisis experience shows that under the premise of preventing systemic risks, stabilizing the economy can stabilize real estate. Although to a certain extent, stabilizing real estate is necessary to stabilize the economy in China due to the different stages of development and importance of the real estate industry in the economy, in the long run, the relationship of the macro economy being the cause and real estate being the effect still holds. In the current situation where the real estate market is marginally improving due to favorable policies, the continued recovery of the economy is the key to the real stabilization of the real estate market.

4.4 Advanced Experience for the Long-Term Growth and Sustainability of Real Estate Markets in China

4.4.1 Transition to Asset-Light Operation Models

Chinese real estate companies' heavy reliance on development-oriented businesses is a significant reason for their high leverage. In contrast, Hong Kong-based real estate companies have larger scales, diverse business types, and more balanced revenue sources, including rental, construction, hotel, and mall operations. US real estate giants, such as Pulte Homes, D.R. Horton, and Lennar, maintain low leverage ratios despite their reliance on development-oriented businesses. They achieve this by using land options to reduce land acquisition costs, mortgage loan subsidiaries to improve capital turnover, and standardized marketing and processes to shorten the capital recovery period. Singapore's CapitaLand Group successfully transformed into an asset-light model by establishing private funds to acquire properties and selling them through REITs once their value increased, recycling the initial investment.

4.4.2 Robust House Sales Systems

Most countries and regions follow a "current sale" system, where buyers pay most of the housing funds upon delivery or in installments based on construction progress. This system helps curb the disorderly expansion of real estate companies' funds. In the US, developers can collect a 20% down payment, which must be deposited in a third-party escrow account and cannot be used until the house is completed. Hong Kong adopts a pre-sale system with strict supervision of pre-sale funds, which can only be used for specific purposes like paying land prices, construction fees, and demolition compensation.

4.4.3 Diverse Debt Resolution Mechanisms

- **Deleveraging:** During the 1990s Japanese real estate crisis, leading companies sold inventories, equities, and other assets at discounts to accelerate capital inflow, strengthened debt limit management, and introduced equity funds.

- **Mergers and Acquisitions:** After the 2008 subprime crisis, some US real estate companies achieved leapfrog development through M&A, such as Pulte Homes' acquisition of Centex, which enhanced liquidity and created synergies.

- **Debt-to-Equity Swaps:** French developer Akerys implemented a debt-to-equity swap plan in 2012, converting creditors' floating-rate notes into cash and convertible bonds, significantly reducing the company's leverage ratio.

- **"Toxic Assets" Disposal Funds:** The US established the Resolution Trust Corporation (RTC) in 1989 and Public-Private Investment Funds (PPIF) in 2008 to dispose of real estate-related "toxic assets," improving market liquidity and mitigating debt pressures on asset holders.

4.4.4 Liquidity Assistance Mechanisms

- **Central Bank Liquidity Supplementation:** During crises, central banks can provide liquidity to specific entities as a "lender of last resort." The US Federal Reserve used the Term Asset-Backed Securities Loan Facility (TALF) to inject liquidity into the real estate market during the 2008 subprime crisis and the 2020 COVID-19 pandemic.

- **Financing Guarantees and Loss Sharing:** Financing guarantees provide credit enhancement for troubled entities' debt issuance. In 2009, the German government provided HRE with €87 billion in debt financing guarantees. Loss sharing mechanisms, such as the US government's plan for Citigroup's $301 billion "toxic assets" in 2008, help stabilize market expectations and mitigate run-off pressures on the liability side.

4.4.5 Sound Corporate Governance Mechanisms

- **Board-Centric Governance:** US-based Pulte Homes exemplifies good corporate governance, with a diverse, experienced, and independent board of directors that plays a central role in strategic objectives, risk strategies, and corporate value assessments.

- **Robust Remuneration Mechanisms:** Pulte Homes' compensation committee designs and implements remuneration policies, with most senior executives' pay being variable and deferred, and a clawback system for misconduct within 36 months of departure.

- **Sustainable Development Model:** Pulte Homes has formed a stable and sustainable development model that emphasizes the unity of economic, environmental, and social responsibilities, focusing on creating value for stakeholders, supporting charitable causes, and promoting green buildings and low-carbon transformation. The company maintains strict financial discipline, keeping its asset-liability ratio below 40%, average debt maturity above ten years,

and annual capital turnover rate above 100%.

4.4.6 Strengthening Counter-Cyclical and Contagion Risk Governance

- **Introducing Counter-Cyclical Capital Buffer Tools for Real Estate:** Some countries have introduced counter-cyclical capital buffer policies specifically for real estate industry credit, linking bank capital regulatory requirements to the growth rate of housing mortgage loans.

- **Implementing Loan-to-Value (LTV) and Debt-to-Income (DTI) Tools:** Setting LTV regulatory requirements can effectively reduce homebuyers' financial leverage and default risks during house price declines. DTI requirements ensure homebuyers' income can cover their debts, helping to curb speculative demand and alleviate irrational housing price surges. Hong Kong has developed a comprehensive LTV and DTI regulatory framework that has played a positive role in containing leverage spillover risks.

- **Establishing a List of Systemically Important Institutions:** The key to resolving contagion risk is identifying systemically important entities and imposing higher regulatory requirements on them to reduce negative spillover effects in extreme situations. Since 2011, the Bank for International Settlements has introduced a list of Global Systemically Important Banks (G-SIBs), subjecting them to stricter regulation based on five dimensions and 12 indicators. Additional regulatory requirements for G-SIBs include capital buffers, leverage ratios, total loss-absorbing capacity, concentration of large risk exposures, recovery and resolution plans, on-site inspections, and corporate governance. As China's large real estate companies have significant risk spillover effects, it is necessary to establish a similar regulatory system for systemically important entities, imposing stricter supervision on leverage, liquidity, and corporate governance.

Chapter 5 Recommendations and Conclusion

5.1 Summary of Findings and Key Insights

This thesis has conducted a comprehensive analysis of the Chinese real estate market, focusing on the Evergrande crisis and its broader implications for the sector. The study has also compared the real estate markets and financing models of China and the United States, drawing lessons from the US housing crisis and identifying best practices for promoting the long-term growth and sustainability of the Chinese real estate industry.

The case study of Evergrande revealed the company's unsustainable business model, characterized by high leverage, excessive diversification, and over-reliance on short-term financing. The crisis exposed the vulnerabilities of China's real estate sector, including the risks associated with high debt levels, maturity mismatches, and the interconnectedness of developers, suppliers, and financial institutions. While the Evergrande crisis has had significant repercussions for the industry, the study found that the risks are largely contained at the individual company level, with limited potential for systemic financial contagion.

The comparative analysis of the Chinese and US real estate markets highlighted the differences in their financing models. Chinese developers primarily rely on indirect financing, such as bank loans and bond issuances, and are more dependent on short-term debt, which increases their exposure to liquidity risks. In contrast, US developers have access to a more diverse range of financing options, including direct financing through REITs and long-term debt instruments, which provide greater financial stability.

The study also examined the implications of the US housing crisis for China, emphasizing the importance of prudent lending practices, effective regulation, and

risk management. While the Chinese real estate market faces distinct challenges, the US experience underscores the need for policymakers to monitor and address potential risks, such as the misallocation of resources and the links between real estate and local government debt.

Drawing from the experiences of China, the US, and other countries, the thesis identified several strategies for promoting the long-term growth and sustainability of the Chinese real estate market. These include transitioning to asset-light operation models, implementing robust house sales systems, establishing diverse debt resolution mechanisms, providing liquidity assistance during crises, enhancing corporate governance, and strengthening counter-cyclical and contagion risk governance.

5.2 Recommendations for firms, policymakers, investors

As the real estate market continues to evolve and face challenges, it is crucial for firms, policymakers, and investors to adopt a forward-looking and sustainable approach. Real estate firms must prioritize rational investment strategies and effective risk management to maintain financial stability and long-term viability.

5.2.1 Firms

Firstly, firms should move away from blind expansion and land hoarding practices, focusing instead on their core business, careful project selection, and comprehensive feasibility analyses. This entails conducting thorough market research, assessing demand drivers, and diversifying investment portfolios across different real estate segments and geographical regions. Additionally, firms must optimize their capital structure by gradually reducing excessive reliance on debt financing. Exploring equity financing options, such as strategic partnerships, joint ventures, and public listings, as well as utilizing asset-backed securitization and real estate investment trusts (REITs), can unlock new sources of capital and strengthen financial resilience.

To enhance competitiveness and adaptability, real estate firms should consider transitioning towards a light-asset business model. This could involve focusing on asset-light operations like property management, real estate services, and build-operate-transfer (BOT) models, as well as exploring public-private partnerships (PPPs) for infrastructure and affordable housing projects. Leveraging technology and digital platforms can further improve operational efficiency and customer experience, while divesting non-core assets can streamline operations and improve capital efficiency.

Robust corporate governance is paramount for real estate firms to mitigate risks, enhance transparency, and foster long-term value creation. Strengthening board independence, diversity, and oversight mechanisms, implementing robust internal controls, risk management, and compliance systems, and aligning executive compensation with long-term performance and sustainability goals are all crucial steps in this regard.

5.2.2 Policymakers

Policymakers play a vital role in establishing a regulatory and policy framework that promotes a stable and sustainable real estate market. Strengthening financial regulation and supervision, including monitoring off-balance-sheet exposures, enforcing leverage limits, and scrutinizing related-party transactions, is essential to mitigate systemic risks. Gradually transitioning from the pre-sale system to a spot-sale system can reduce the reliance on pre-sale funds and encourage self-financing for real estate development.

Furthermore, policymakers should establish a comprehensive framework for resolving distressed real estate firms, encompassing mechanisms for debt restructuring, asset sales, and mergers and acquisitions. Implementing counter-cyclical regulatory policies, such as dynamic capital buffers and risk-weight adjustments based on market conditions, can help smooth out real estate market cycles and promote financial stability.

Enhancing liquidity support mechanisms and facilitating access to funding for viable real estate firms during market stress periods is another critical policy consideration. Fostering transparent and efficient land markets, promoting public-private partnerships, and encouraging sustainable urban development practices can contribute to a well-functioning and sustainable real estate sector.

5.2.3 Investors

Investors, too, have a significant role to play in shaping the future of the real estate market. Conducting thorough due diligence and risk assessments, analyzing financial health, leverage levels, project viability, and corporate governance practices, is essential before investing in real estate firms. Diversifying investment portfolios across different asset classes, geographical regions, and investment vehicles can mitigate concentration risks and provide exposure to various real estate opportunities.

Prioritizing investments in firms with sustainable business models, strong cash flow generation, prudent leverage levels, and a commitment to environmental, social, and governance (ESG) principles is crucial for long-term value creation. Engaging with real estate firms as active shareholders, exercising voting rights, and advocating for transparency, robust disclosure practices, and alignment of executive compensation with long-term value creation can drive positive change within the industry.

Exploring alternative real estate investment vehicles, such as REITs, real estate funds, crowdfunding platforms, and real estate debt instruments, can provide investors with diversified exposure to the sector while managing risks effectively.

5.3 Limitations and Future Outlook

While this thesis has provided insights into the challenges faced by the real estate markets in China and the USA, and offered recommendations for firms, policymakers, and investors, it is essential to acknowledge certain limitations and highlight areas for

future research and analysis.

Firstly, the rapid pace of change in the real estate sector and the evolving regulatory landscapes in both countries may require continuous monitoring and adaptation of the proposed strategies and recommendations. The analysis presented in this thesis is based on data and market conditions up to a certain point in time, and future developments may necessitate adjustments or refinements to the proposed approaches.

Moreover, the real estate market is influenced by a multitude of factors, including economic conditions, demographic shifts, technological advancements, and societal trends. While this thesis has attempted to incorporate some of these factors, it is impossible to account for all potential future scenarios and their implications on the real estate market dynamics.

Furthermore, the recommendations provided in this thesis are broad and may require further nuancing and tailoring to specific regional or local contexts within China and the USA. Real estate markets can vary significantly across different cities, states, or provinces, and the implementation of the proposed strategies may need to be adapted to address local market conditions and regulatory environments.

Another limitation lies in the inherent complexity of the real estate industry, which involves a diverse range of stakeholders, including developers, investors, homebuyers, policymakers, and financial institutions. While this thesis has aimed to address the concerns and perspectives of these various stakeholders, there may be additional nuances or conflicting interests that require further examination and reconciliation.

Despite these limitations, the insights and recommendations presented in this thesis lay a foundation for ongoing research and dialogue in the field of real estate market sustainability and long-term growth. As the real estate sector continues to evolve, future research could focus on:

- Assessing the effectiveness of the proposed strategies and recommendations in real-world applications and refining them based on empirical evidence and case studies.

- Exploring the potential impact of emerging technologies, such as PropTech, on the real estate industry and how they can be leveraged to enhance efficiency, transparency, and sustainability.

- Investigating the role of sustainable finance and green building initiatives in promoting environmentally responsible real estate development practices.

- Analyzing the interplay between housing affordability, urban planning, and real estate market dynamics, and developing integrated policy frameworks to address these interrelated issues.

- Examining the implications of demographic shifts, such as aging populations and changing household compositions, on real estate demand and supply dynamics.

- Conducting comparative studies across different regions and countries to identify best practices and adapt successful strategies to local contexts.

By acknowledging these limitations and embracing a spirit of continuous learning and adaptation, researchers, policymakers, and industry professionals can build upon the foundations laid in this thesis and contribute to the ongoing pursuit of a resilient, sustainable, and equitable real estate market that supports long-term economic growth and societal well-being.

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