

IFE - Institute of Field Education

LES ELEMENTS CONSTITUTIFS D'UNE ÉCONOMIE : LE FINANCEMENT DU FONCIER EN  
CHINE ET LES RISQUES QU'IL POSE POUR L'ÉCONOMIE CHINOISE

UN MÉMOIRE DE STAGE

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# THE BUILDING BLOCKS OF AN ECONOMY: LAND FINANCING IN CHINA AND THE RISKS IT POSES FOR THE CHINESE ECONOMY

## Introduction

In 1994, China radically changed the way its local governments generated revenue. Until then, local governments had received most of the country's revenue,<sup>1,2</sup> but trying to move from a planned economy to a market economy,<sup>3</sup> China has recentralized its tax system, partly to reduce its budget deficit. This fiscal reform has succeeded in transferring the majority of tax revenue from local governments to the national central government, as illustrated in Graph. 1<sup>4</sup>. This radical reform placed local governments in a difficult situation: their revenues fell by 42%, while their budgetary expenditure remained constant.<sup>5</sup> while budget expenditure remained constant. As a result, local governments had to find another source of funding, which turned out to be land financing. Although it has never been officially recognized by the Chinese central government, the land financing system resulting from this fiscal reform has become a common practice among local governments. Its operation is based primarily on the difference in value between rural and urban land, and the advantage that local governments derive from this as they are the only entities empowered to convert land from rural to urban. This latent profit, along with strict controls on maximum sale prices for rural land, has enabled local governments across China to fill the financial void left by the 1994 budget reform. Simplified to the extreme, since 1994, local governments have been buying up rural land at low prices, only to resell it at high prices, using their profit to build infrastructure (with a view to increasing the value of existing urban land) and subsidize enterprises (to increase economic activity in their cities). This system has proved highly lucrative over the years. This growth is due in part to the appeal of real estate to the Chinese, who see it as the investment par excellence (see Chart 2). For Chinese households, these property investments account for around 78% of the total.<sup>6,7</sup> of Chinese assets, compared

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<sup>1</sup> Zhang, Rongjie, et al. *Land finance in China : Analysis and review*. China Economic Review, 26 septembre, 2022, p. 2.

<sup>2</sup> Lv, B., Zhang, Z. *Reform of China's taxation system: from embedment in the economy to embedment in society*. J. Chin. Social. 9, 3, 2022.

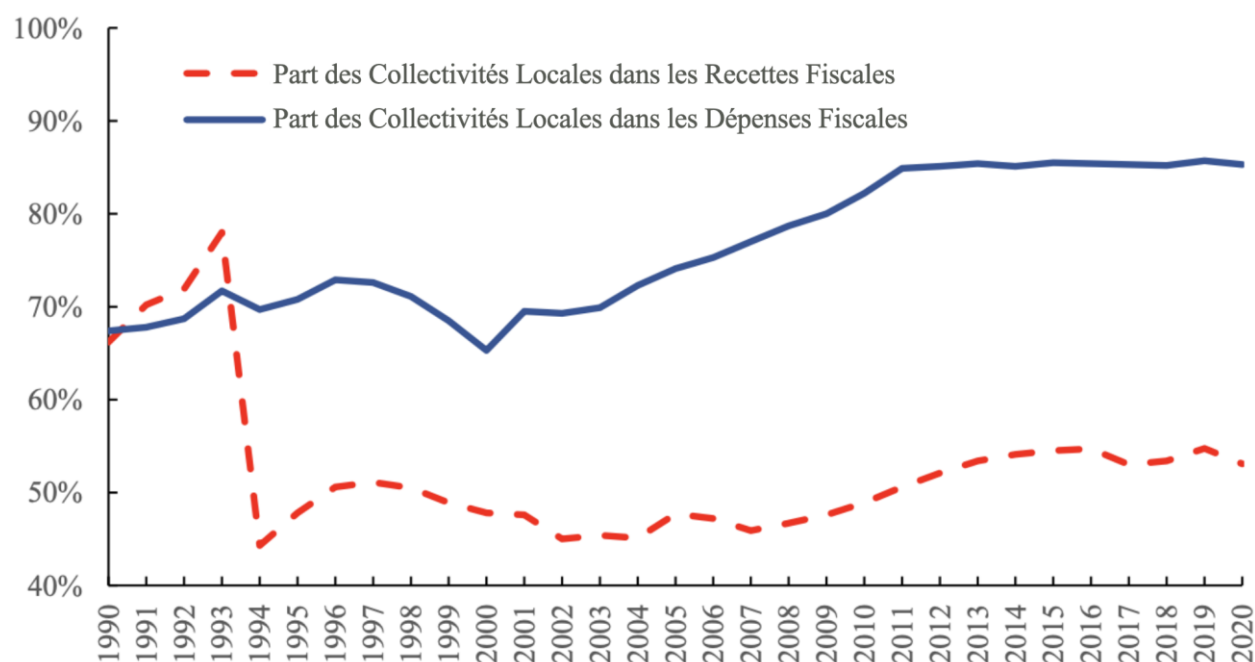
<sup>3</sup> Idem

<sup>4</sup> Tout au long du mémoire, nous utiliserons des graphiques pour montrer d'information importante ou clarifier des points. Normalement, ces graphiques se trouveront dans des groupes tous les dix pages pour qu'ils n'empêchent pas la lecture du texte. Il y aura certains qui se trouveront directement dans le texte : ceux-ci ont été jugés être tellement important qu'il méritait les y directement mettre pour que le lecteur puisse mieux comprendre.

<sup>5</sup> China Statistical Yearbook, 2014

<sup>6</sup> Carré, Thomas, et al. *La dépendance de la croissance chinoise au secteur immobilier*. Ministère de l'Économie, des Finances, et de la Souveraineté Industrielle et Numérique, août, 2022, p. 2

<sup>7</sup> Selon Gogudata, cabinet d'étude basé à Shenzhen.



**Graph. 1.** Part des collectivités locales dans les recettes et dépenses fiscales

Graph Source : Zhang, Rongjie, et al. *Land finance in China : Analysis and review*. China Economic Review, 26 septembre, 2022, p. 14

with 35% in the United States and 57% in the euro zone.<sup>8,9</sup> Chart 7), and since 2017 land appreciation has decelerated and even turned negative!<sup>10</sup> The Chinese land financing system is based on all these elements; through it, the Chinese government has to deal with a variety of problems that are difficult to resolve. China's future depends on the measures it puts in place.

To better understand the issues at stake in China's land financing system, we need to quantify and put the subject into perspective. With this in mind, this dissertation will begin with an account of the land financing system as used by Chinese local authorities to influence their tax revenues. Although this presentation will attempt to cover the complex evolution of the land financing system from its conception in 1994 to the present day (2024), it will become increasingly difficult to provide an accurate account of it due to the Chinese central government's cessation in recent years of the publication of certain key data. Once the dynamics of this system are well established, we can begin a more precise analysis of its consequences for the development of the Chinese economy. More specifically, we will examine in detail how this system acts as a “crutch”, gradually making itself indispensable to local authorities. These elements of contextualization are also necessary to better understand and contextualize the risks (systematic and systemic) whose emergence can be attributed to the land financing system. We will classify the various risks and possible problems in the economy according to the sectors in which they best fit (respectively the

<sup>8</sup> Carré, Thomas, et al. *op. cit.*, p. 2.

<sup>9</sup> Source : Fonds Monétaire International (IMF)

<sup>10</sup> Zhang, Rongjie, et al. *op. cit.* p. 21

residential real estate market or the commercial market). Finally, we will attempt to quantify and forecast the more specific problems that are likely to occur in the future. Throughout this dissertation, we will attempt to contextualize the issues under study by drawing parallels and comparisons with similar situations or events. We will take advantage of this to highlight the uniqueness of the system (insofar as the references in our presentation will be diverse and present varying degrees of applicability). In particular, we will find the most applicable parallels in the events of the 2008 Global Financial Crisis (GFC) precipitated by the collapse of Lehman Brothers. So, before we begin, let's clarify the reasons behind this choice.

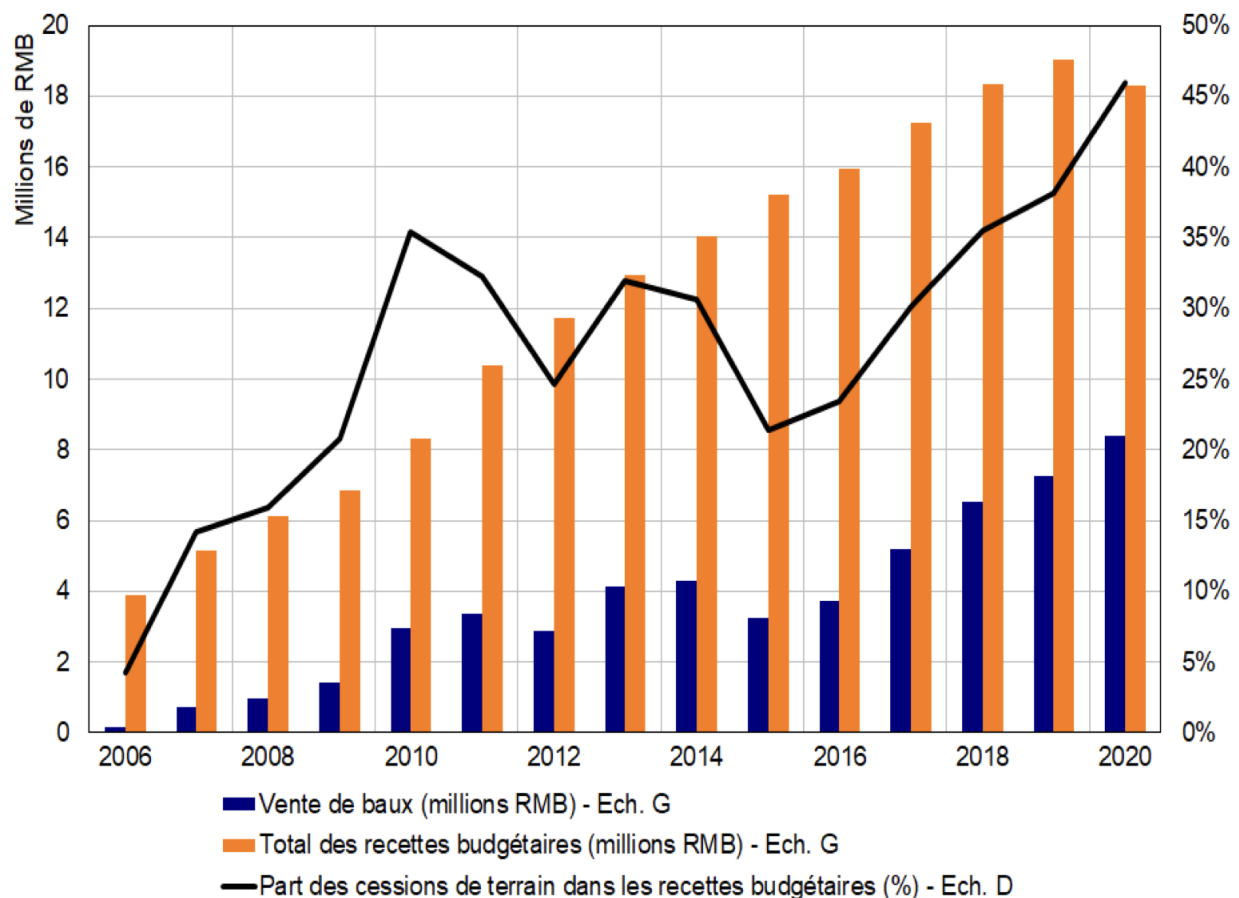
Since its introduction in 1994, numerous articles and studies dealing with the Chinese land financing system have been published. Moreover, the systemic risk of the Chinese real estate market is a well-established topic in the world of research. However, there are no parallel resources dedicated to these two subjects. The aim of this dissertation is to provide a comprehensive resource covering both land financing in China and the risks involved in the real estate market. By combining an overview of the Chinese land financing system with a quantitatively based analysis of the systematic and systemic risks of the Chinese real estate market, this dissertation will above all attempt to provide the general public with a popularized and accessible resource on this subject. Moreover, the importance of the Chinese economy as a global institution cannot be underestimated: its share of world GDP has risen more than 800% since 1980, from 2.3% to 18.7% (see Chart 8), and it accounts for around 28.7% of global manufacturing output, compared with 16.8% in the USA and 1.9% in France. This economy, considered to be the largest in the world, adjusted for Purchasing Power Parity (PPP), merits closer inspection, particularly as the system behind this remarkable growth remains little known (if not ignored) by the general public.

With these contextual elements in mind, the discussion in this dissertation will take place in three stages. Firstly, we will endeavour to answer the following question: “How has the land financing system in China evolved since 1994? The resulting analysis will enable us to examine the different forms of the land financing system adopted by the Chinese government, right up to the essential role it currently plays in the Chinese economy. In so doing, we will attempt to provide an understandable yet detailed summary of how the system works, as well as a general overview of its economic importance. Secondly, we will attempt to identify the risks associated with the current development of the land market. By identifying and classifying the various risks that have arisen from overuse of the land financing system, we can better understand the problems that may affect the Chinese economy. Once we've examined these issues, we'll move on to consider the possible consequences for the global market. Although this is a more delicate subject to tackle, we will develop some answers based on our previous analyses. This last section is by far the most difficult to conduct, but we'll give it a try using a variety of methods.

## I: The land financing system

### **A) The origins of the land financing system**

As already mentioned, China's land financing system has its origins primarily in the tax reforms of 1994. It is important to note that in China, the citizen cannot become the direct owner of urban land. All urban land is owned by local authorities, so the Chinese citizen is still only the owner of a land lease known as a LUR (Land Usage Right). Nevertheless, as Zhang et al. (2022) assert, “The State remains the ultimate owner of urban land, whose commercialization is prohibited. However, LURs can be transferred, mortgaged and sold for profit as a bundle of property rights.” All rural land in China belongs to Chinese farmers, so to create more urban land, local governments always needed (including in the period before the 1994 tax reforms) to buy rural land from farmers and turn it into urban land, since they remain the only entities in China authorized to exercise these powers. The extreme decline in local government tax revenues (see Fig. 1) prompted a search for a new source of funding, which resulted in a surge in local government land



**Graph. 11.** Revenus des Gouvernements Locaux issus des Cessions des Droits d'Usage de Terrain (des LUR)

Source du Graphique : Carré, Thomas, et al. *La dépendance de la croissance chinoise au secteur immobilier*. Ministère de l'Économie, des Finances, et de la Souveraineté Industrielle et Numérique, Août, 2022, p. 1

financing. To better understand the value of this solution, we need to take a close look at how the land financing system has helped (and continues to help) solve the problems faced by local authorities. Firstly, while it's true that local authorities were looking for an alternative source of revenue, it's also fair to ask where this budget was actually allocated. One of the most important principles of the Chinese economy is that local governments should be the vectors of the country's economic growth. Their role in achieving this is twofold: first, by investing in local infrastructure (see Charts 9 and 10) and subsidizing local businesses. All of this helps to generate growth in the city's GDP. We'll come back to how these two facets of land financing work later, but for now it's enough to be aware of its existence and its main interest. Clearly, local governments needed money to finance their economic activities, and as a result of the 1994 tax reforms, the land financing system became their preferred method.

To quickly summarize how the land financing system has evolved since 1994, we need to divide its history into three main periods. Between 1994 and 2014, the system saw enormous growth in terms of the volume of land sold and the extent to which local authorities relied on the revenue generated by using it. Notably, the global sub-prime crisis originating in the United States triggered an explosion in land sales and real estate investment. This period is characterized by high LGFV utilization. Then, between 2014 and 2020, the Chinese government tried unsuccessfully to constrain local government indebtedness by putting in place laws concerning the level of indebtedness they were allowed. Between 2020 and 2014, the Chinese central government recognized the extent to which the Chinese economy was relying too heavily on land and real estate financing, and began implementing policies designed to constrain the debt levels of real estate companies. We'll talk about all this later in the brief, so for now this little overview will have to suffice.

## **B) Key principles of land financing**

Despite the fact that the land financing system remains unofficially defined, we are still able to identify aspects of the system that persist uniformly, regardless of how each local authority implements it. In this section, we offer an overview of these means, so that the reader can gain a deeper understanding of the system. As already explained, China's land financing system is based on the fact that all rural land belongs to Chinese farmers, and all urban land to local authorities. These local authorities are the only entities that can transform rural land into urban land, and Chinese citizens can only lease land from them. The revenue generated by the transfer of Land Usage Rights (LUR's) to citizens represents a (fairly) reliable and (highly) lucrative source of income for local authorities. Over time, local authorities have become increasingly dependent on LURs, as shown in Graph. 11. The system's share of local authority revenue depends on the city in question - from a minimum of 19.6% to a maximum of 56.4%. The profitability of the system depends, of course, on the size of the capital gain between the acquisition of rural land and the resale of urban land. However, this approach also has harmful effects for the owners of rural land (i.e.

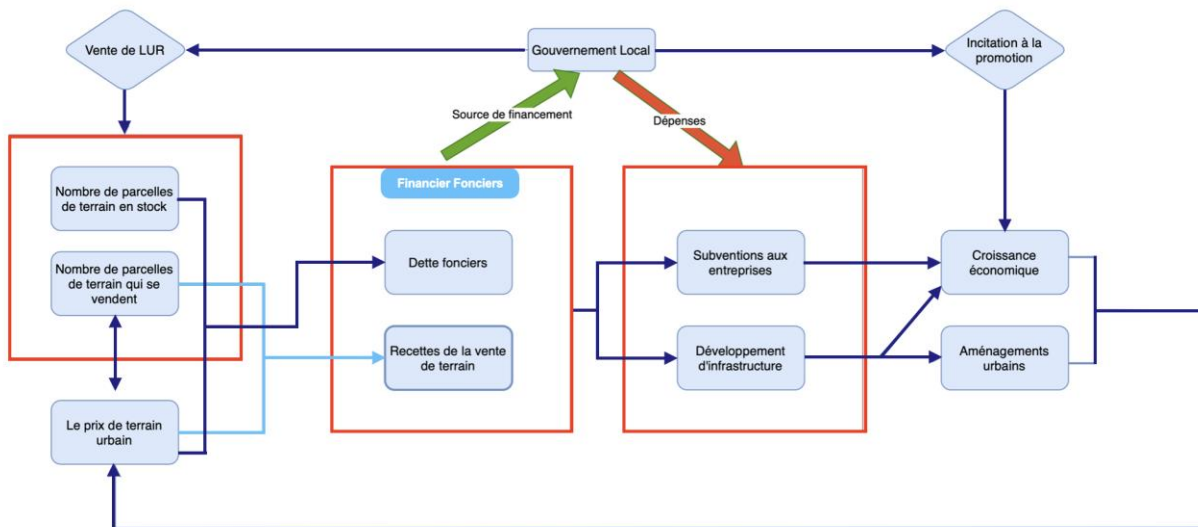


Chinese farmers). Firstly, local authorities only buy rural land for its valuation as rural land, and therefore at massively reduced prices, strictly controlling this valuation of rural land, depriving farmers of their right to have a say in the matter. Secondly, the most indebted local authorities tend to pay less compensation to rural dwellers who lose their land, thus transferring the pressure of their debt onto the latter (often the people least able to cope). The other way in which local authorities generate revenue is by reselling LURs after buying them back from local businesses or owners. The profitability of these resales is based on growth in the value of the land, mainly thanks to investment in local infrastructure by local authorities. These buy-backs are negotiated as indemnities, so valuations are not always simply in the sellers' favor. However, the profit margins on these resales are significantly lower than those on sales from rural land acquisitions, so the latter play a much larger role in local authority revenues. As a result, communities motivated by potential profits have a strong incentive to convert as much rural land into urban land as possible. This state of affairs has led to a particular situation in China, where “its urbanization is based on land urbanization rather than human capital or advanced technologies.” As a result, despite the fact that between 2001 and 2015 the rate of urbanization grew, urban population density fell by 16% (or by an average of 6.45% per year in major cities). This reflects the fact that urban land has grown significantly faster than the urban population over this period, indicating the over-reliance of local authorities on revenues from the conversion of rural land into urban land. Thus,

“Local governments' strong profit-seeking incentives in land finance can also lead to misallocation from a spatial perspective. Local governments are more inclined to acquire and convert parcels with higher profit potential, but not necessarily parcels that need to be redeveloped or urbanized.”

These extreme profit-seeking tendencies on the part of local authorities highlight a system that is not at all sustainable: a conclusion that becomes even clearer when we consider the rate of unoccupied housing in China (see Figures 3, 4). Insofar as local government revenues depend on the valuation of urban land, we can better understand why they focus on such strong investment in local infrastructure. By building new infrastructure, they can increase (either artificially or actually) the valuation of urban land and boost municipal GDP (indeed, these investments generate employment and thus beneficial financial activity for

the community). By referring to Chart 12 below, the reader can benefit from a visual explanation of the



**Graph. 12.** Fonctionnement du Système de Financement du Foncier en Chine, Visualisé

Source : Zhang, Rongjie, et al. *Land finance in China : Analysis and review*. China Economic Review, 26 Septembre, 2022, p. 4

Traduction faite par l'auteur

cyclical nature of local government activities.

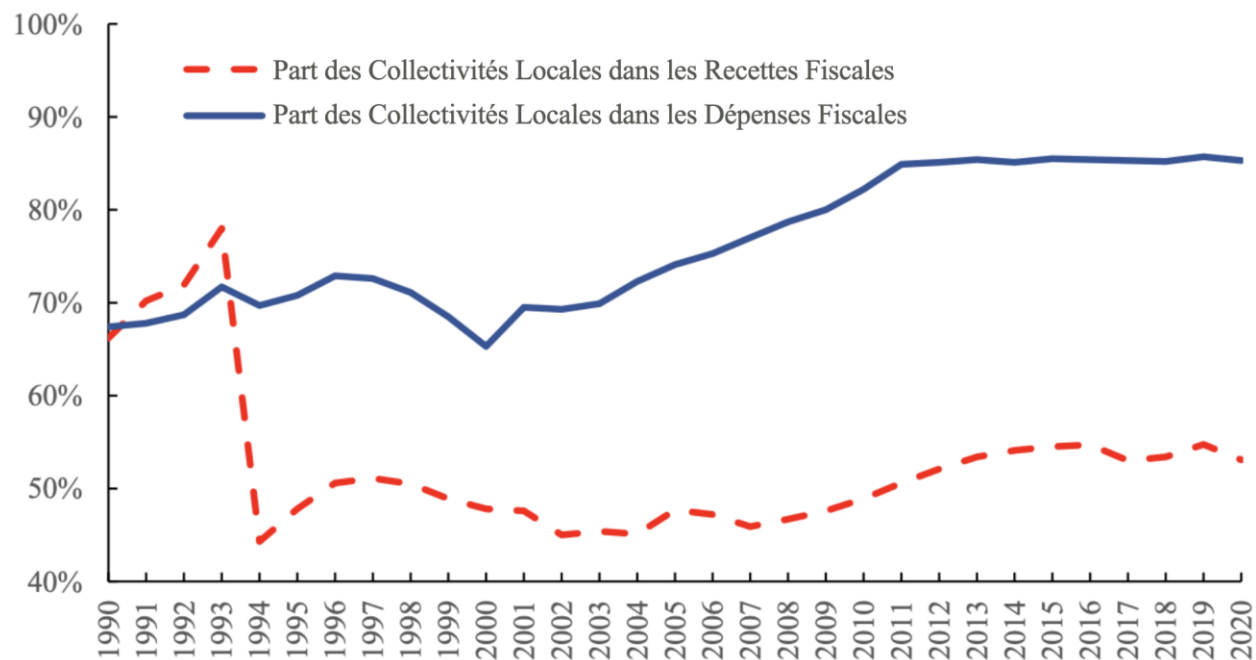
The other major expense represented in the land financing system exists as subsidies to local businesses (also visible in Chart 10). These (along with investments in local infrastructure), serve to contribute to municipal GDP growth. The latter represents one of the most important goals for local government officials: their careers depend massively on the economic performance of their cities, and the ultimate measure for the Chinese central government is municipal GDP growth as far as the latter is concerned. In fact, “the Chinese central government's willingness to reward and punish local officials according to their economic performance encourages them to promote the local economy”. So, these local officials are always looking to quickly boost local GDP growth so that they can either get promoted or avoid redundancy. As a general rule, there are three best ways to quickly boost a city's GDP: u investment in local infrastructure, subsidizing local businesses to attract more investment from them, or increasing their social spending. We can thus attribute the emergence in force of the land financing system also to the 1994 tax reforms and the fact that local officials need huge sums of money to finance the amounts of municipal GDP growth demanded by the central government. What's more, we can even establish a link between revenues from land sales on the part of local governments and the likelihood of promotion for their civil servants:

“A one standard deviation increase in income from land sales results in a 1.96 percentage point increase in the probability of promotion [for local officials], which represents 28.24% of the actual average probability of promotion.”

It should be borne in mind, however, that despite the evidence of this link, we shouldn't immediately draw the conclusion that one causes the other; we can't say that there is a correlation, and that would rather mean that the economic activity that may have been generated by the income from these land sales has increased the likelihood of promotion for these civil servants.

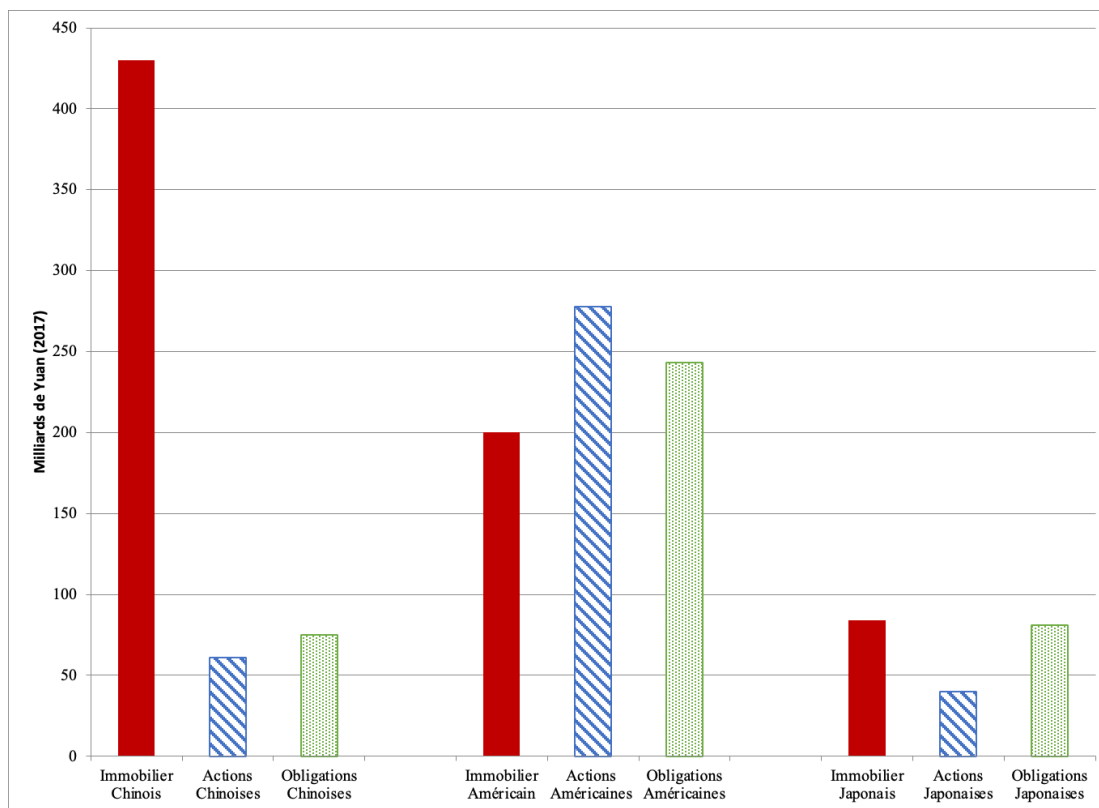
## Graphiques pt. 1

Tous les graphiques ont été créés par l'auteur, sauf contre-indication.



**Graph. 1.** Part des collectivités locales dans les recettes et dépenses fiscales

Graph Source : Zhang, Rongjie, et al. *Land finance in China : Analysis and review*. China Economic Review, 26 septembre, 2022, p. 14

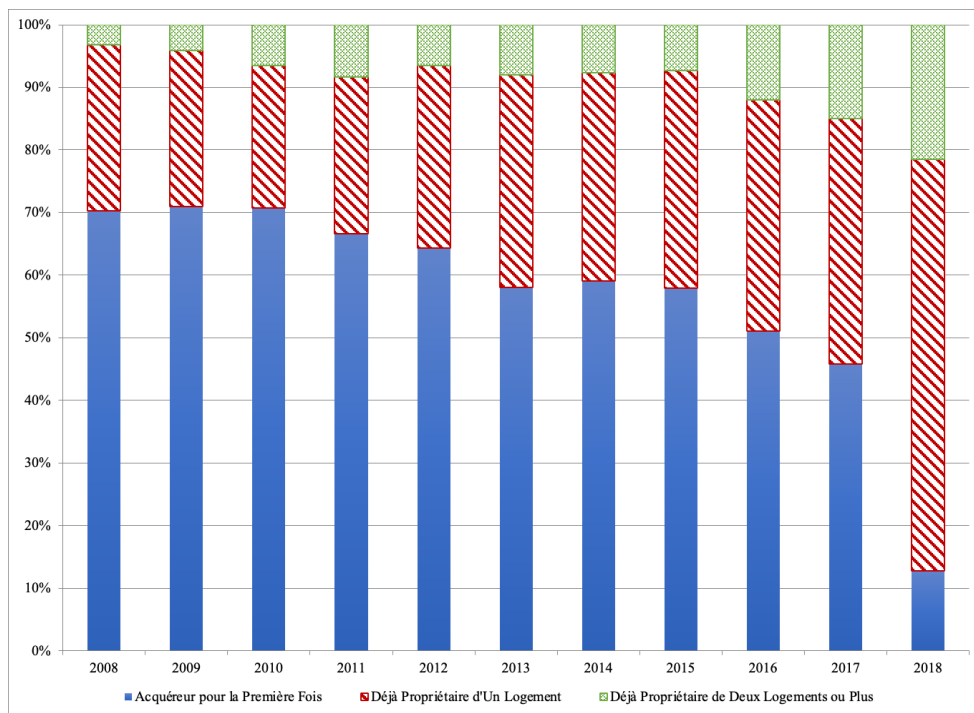


**Graph. 2.** Évaluation des Différentes Classes d'Actifs en 2017

Source du Graphique : Kenneth, Rogoff, et Yuanchen, Yang. *Has China's Housing Production Peaked ? China and the World Economy*, Vol. 21, 2021

Source des Données : 2018 China Urban Household Wealth Health Report compiled by China Guangfa Bank and

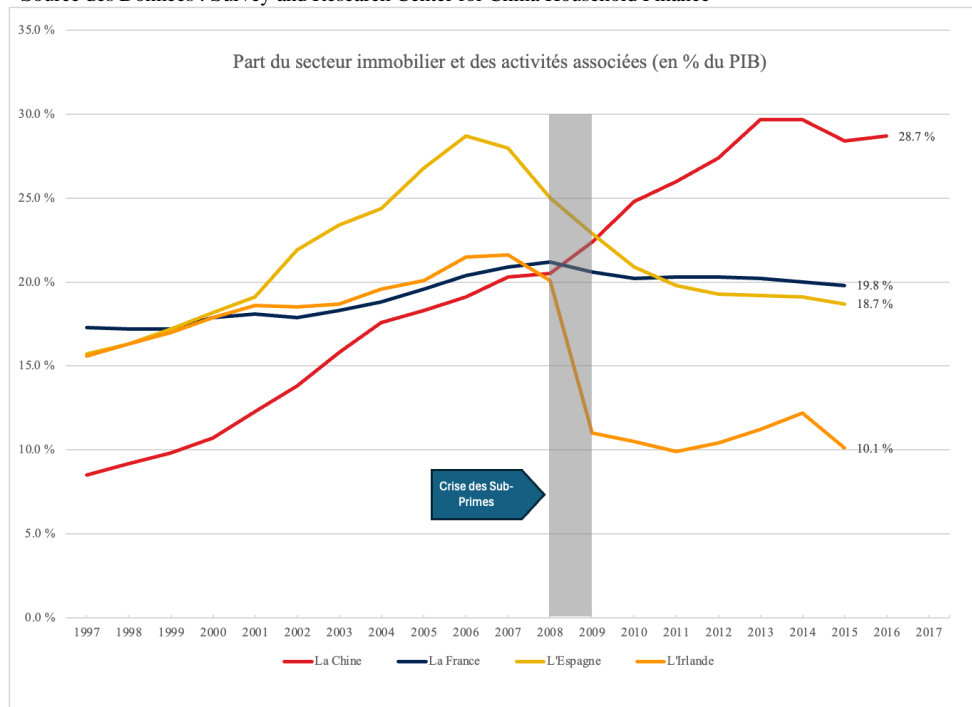




**Graph. 3.** Nombre de Logements des Nouveaux Acquéreurs Chinois

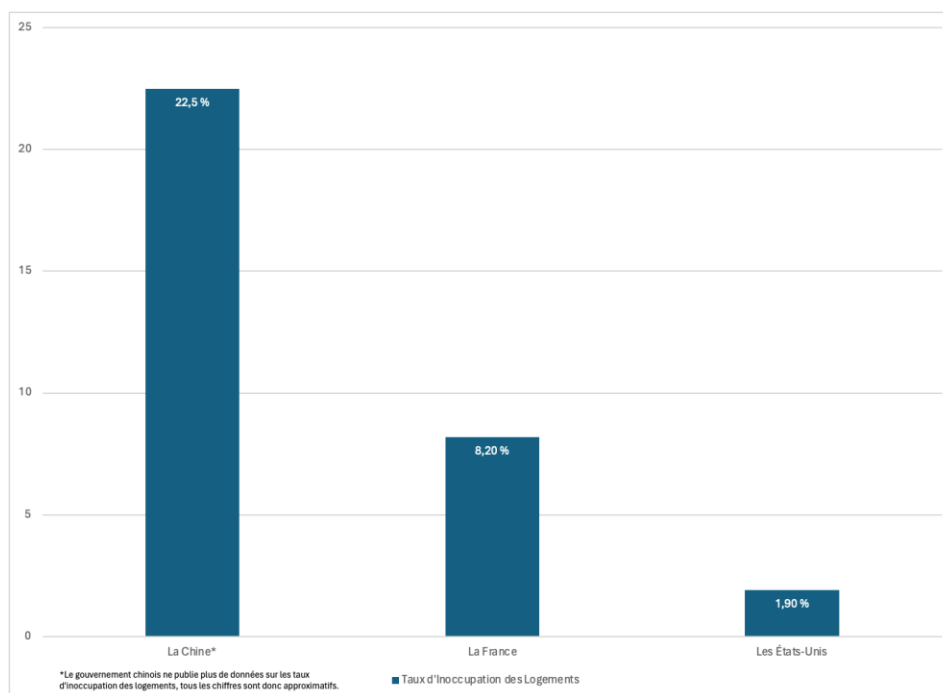
Source du Graphique : Kenneth, Rogoff, et Yuanchen, Yang. *Has China's Housing Production Peaked ?* China and the World Economy, Vol. 21, 2021

Source des Données : Survey and Research Center for China Household Finance



**Graph. 4.** Part du secteur immobilier et des activités associées (en % du PIB)

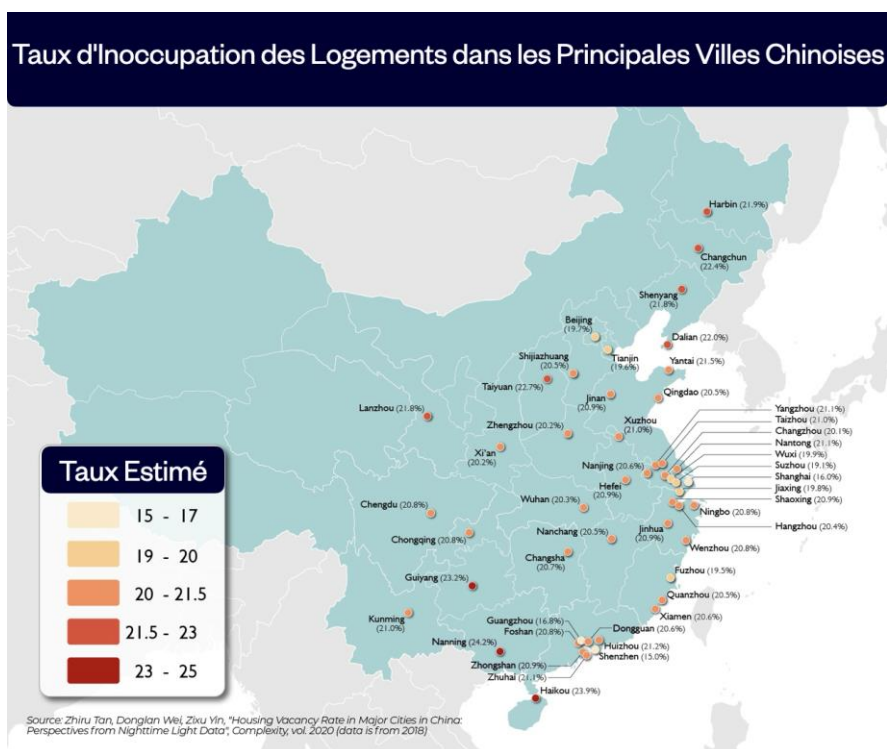
Source : KLEMS ; Carré, Thomas, et al. *La dépendance de la croissance chinoise au secteur immobilier*. Ministère de l'Économie, des Finances, et de la Souveraineté Industrielle et Numérique, août, 2022, p. 2 ; Kenneth, Rogoff, et Yuanchen, Yang. *Has China's Housing Production Peaked ?* China and the World



**Graph. 5.** Taux d'Inoccupation des Logements par Pays

Source : Wei, Donglan, et al. *Housing Vacancy Rate in Major Cities in China: Perspectives from Nighttime Light Data*. Hindawi, 21 septembre, 2020 ; La Rédaction. *Une forte hausse du nombre de logements vacants en France depuis 1990*. La République Française, 22 janvier, 2024.

N.B. Calculs de l'auteur basés sur les données publiées par le National Census Bureau des États-Unis.

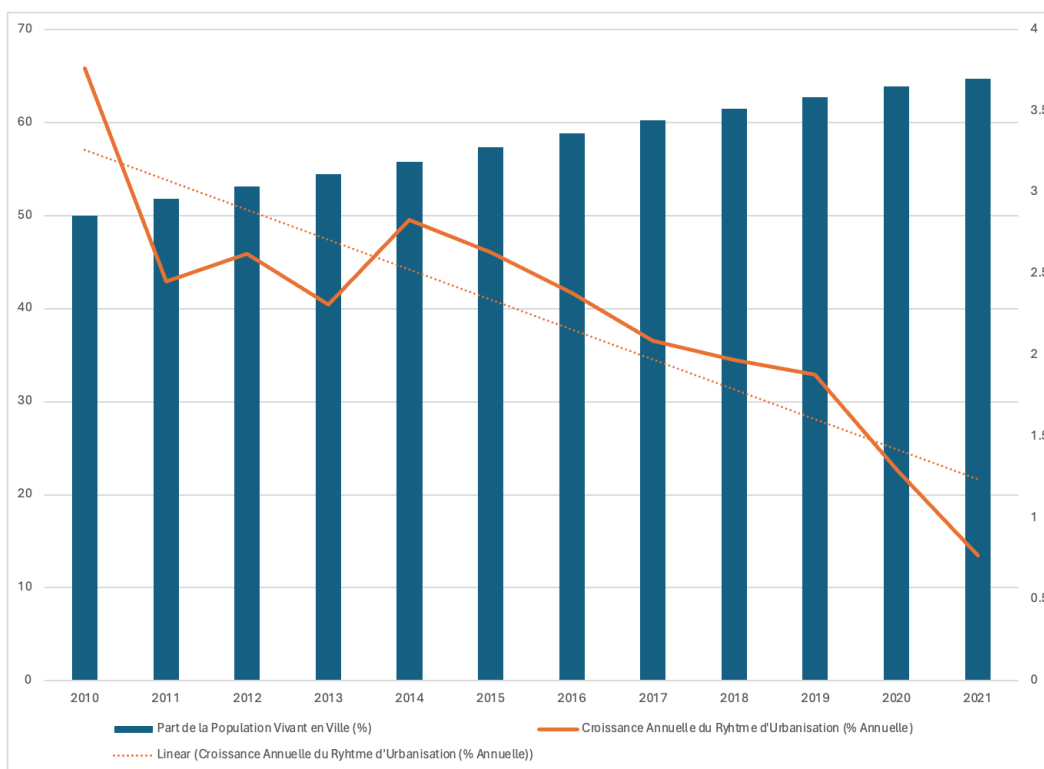


**Graph. 6.** Taux d'Inoccupation des Logements dans les Villes Principales de la Chine

Source : Wei, Donglan, et al. *Housing Vacancy Rate in Major Cities in China: Perspectives from Nighttime Light Data*. Hindawi, 21 Septembre, 2020

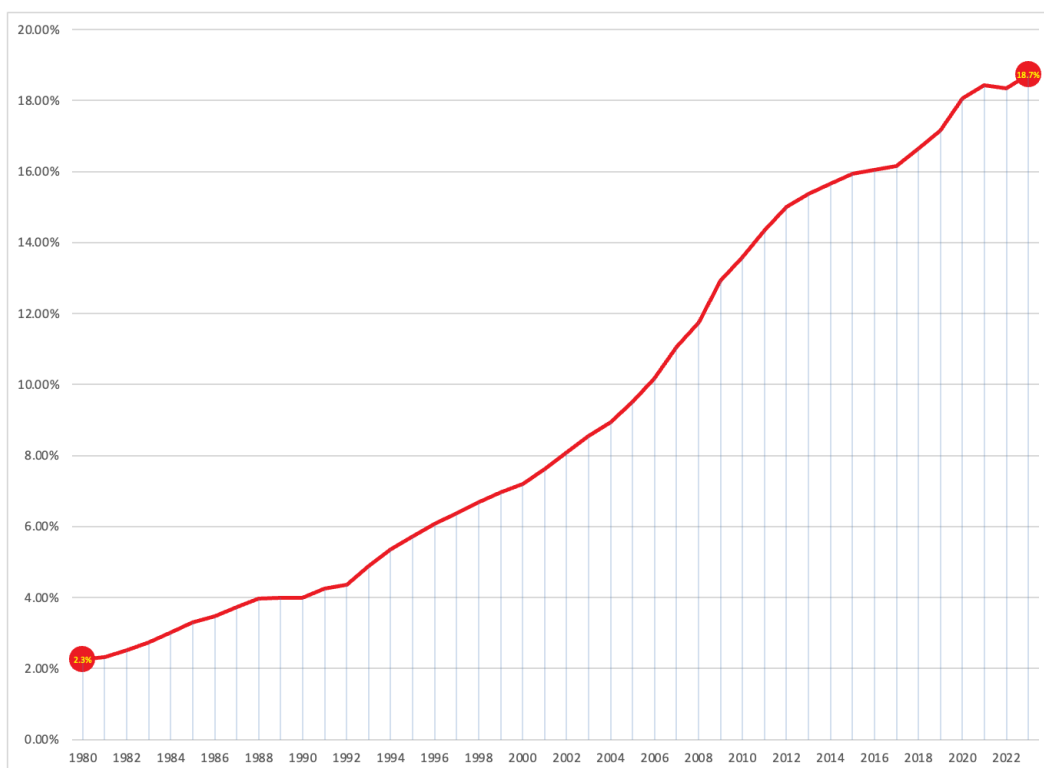
Source d'Image: Landgeist, *Housing Vacancy Rate in China*. Landgeist, 4 novembre, 2021.





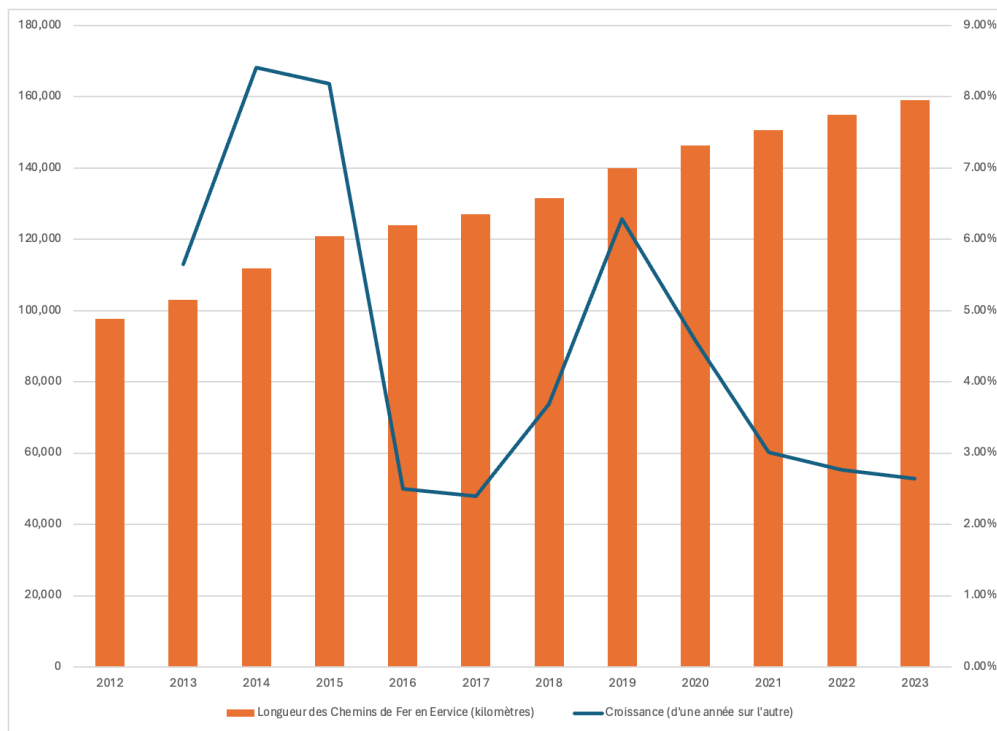
**Graph. 7. Taux d'Urbanisation en Chine**

Source : Institut des statistiques chinois (NBS), Banque mondiale.



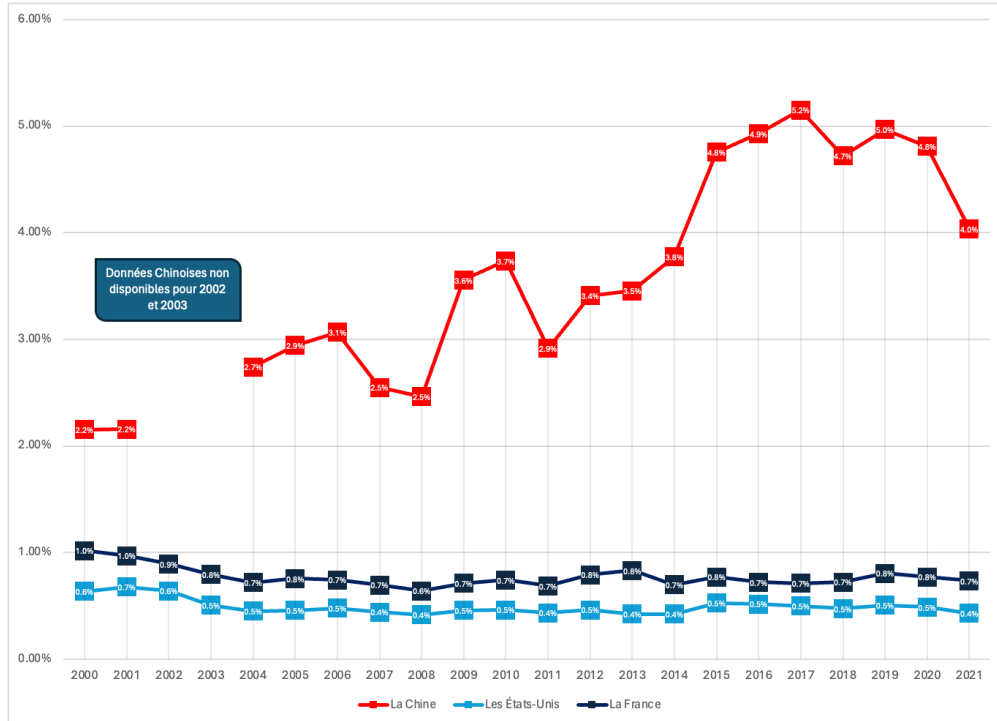
**Graph. 8. Part Chinoise du PIB Mondial Ajusté à la Parité de Pouvoir d'Achat**

Source : Fonds Monétaire International (IMF)



**Graph. 9.** Croissance du Système Ferroviaire Chinois au Fil des Ans

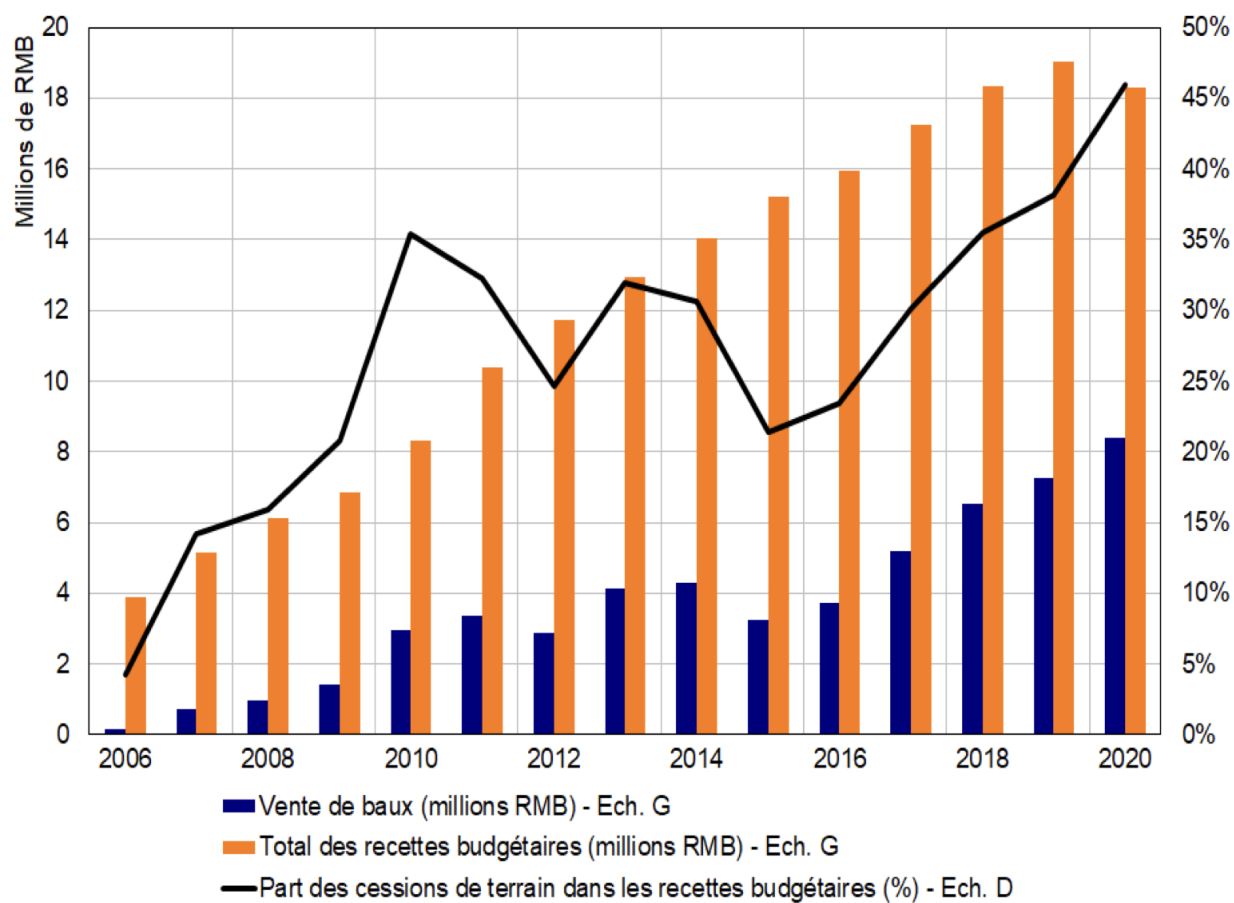
Source : CEIC, "Chinese Railway: Length in Operation", <https://www.ceicdata.com/en/china/railway-length-in-operation/cn-railway-length-in-operation>, 15 mai, 2024



**Graph. 10.** Investissements Annuels dans les Chemins de Fer et les Routes en Pourcentage du PIB

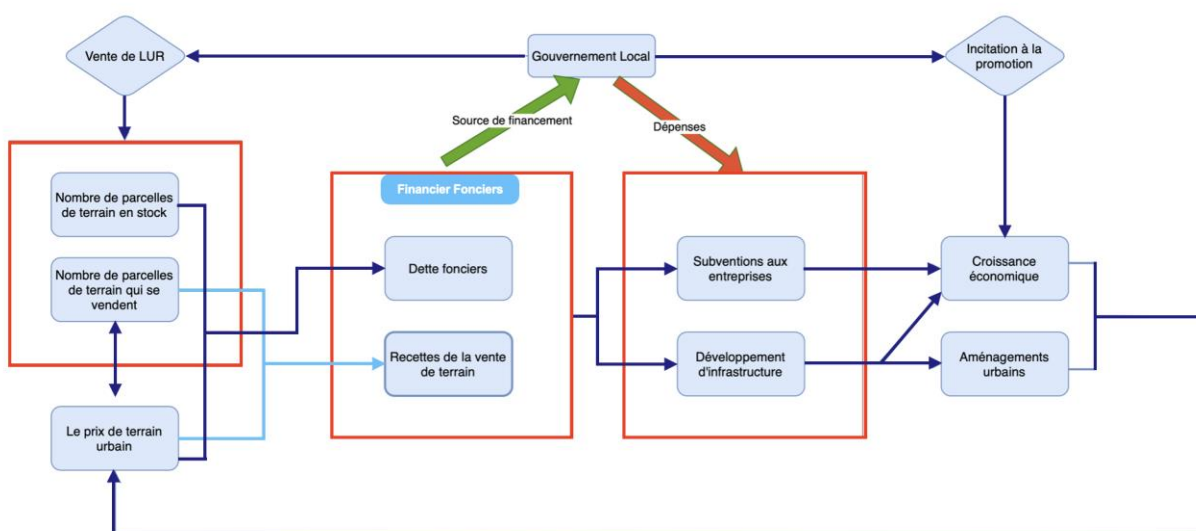
Source : International Transport Forum, OECD, "Transport Infrastructure Investment and Maintenance Spending", [https://stats.oecd.org/Index.aspx?DataSetCode=ITF\\_INV-MTN\\_DATA](https://stats.oecd.org/Index.aspx?DataSetCode=ITF_INV-MTN_DATA), 15 mai 2024





**Graph. 11.** Revenus des Gouvernements Locaux issus des Cessions des Droits d'Usage de Terrain (des LUR)

Source du Graphique : Carré, Thomas, et al. *La dépendance de la croissance chinoise au secteur immobilier*. Ministère de l'Économie, des Finances, et de la Souveraineté Industrielle et Numérique, Août, 2022, p. 1



**Graph. 12.** Fonctionnement du Système de Financement du Foncier en Chine, Visualisé

Source : Zhang, Rongjie, et al. *Land finance in China : Analysis and review*. China Economic Review, 26 Septembre, 2022, p. 4  
Traduction faite par l'auteur

The final way in which local authorities stimulate the municipal economy lies in their ability to control land prices. Indeed, in order to make the industrialization process easier for local companies, local authorities strive to keep industrial land prices artificially low. As a result, we can see that residential land prices have risen enormously since the 90s (see Chart 13), while industrial land prices have shown little change (see Chart 14). This subject merits a dissertation in its own right; suffice it to say that this trend on the part of local authorities in trying to stimulate economic development is leading to an increase in the level of risk for these companies. Theoretically, this strategy of price control can lead to less (or no) profitable operating models in the “open market”. Note that, in the future, if local authorities were to withdraw or reduce these measures, these companies would suffer. In short, with these key principles of the land financing system well established, we can examine in more detail just how much this system represents a key facet of the Chinese economy.

### **C) The importance of the land financing system in the Chinese economy – LGFVs**

Having established the origins of the land financing system and the key principles by which it operates, we can begin a precise analysis (based on these) of the important role it plays in the Chinese economy. There are two main areas where its weight is felt particularly strongly: these being local government debt backed by land revenues, and the property market (more precisely, the variation - including growth - of its prices). With regard to local authority debt backed by property income, we need to break this analysis down into two parts: the 1994-2014 period and the period from 2014 to the present day. The main reason for this distinction lies in the way local government debt is financed. Indeed, from 1949 (the founding date of the People's Republic of China or PRC) until 2014, local governments were not authorized by the Chinese central government to engage in debt financing activities (they couldn't even issue bonds).

To circumvent this restriction and to compensate for the loss of most of their tax revenues caused by the 1994 reforms, the majority of local governments began to establish Local Government Financing Vehicles (LGFV's). These LGFVs enabled local governments to engage in debt financing activities to support massive infrastructure programs and desired subsidies, acting as independent companies (but still retaining their financial links with the communities). This financing can be achieved in two ways: either through loans granted directly by the banks to the LGFVs, or through the issue of municipal bonds to the general public by the LGFVs. There are several worrying aspects to these LGFVs. Firstly, they are often loss-making: their real estate and infrastructure development projects are rarely profitable, so local authorities need to support them financially. Secondly, the sources of funding for these LGFVs are risky themselves. As a quasi-legal organization, Chinese LGFVs have two ways of obtaining financing or guarantees for their loans. Either local authorities can give them LURs to use as debt collateral directly, or

local authorities can guarantee LGFV loans “indirectly” themselves; that is, the guarantee is based on their future sales of LURs. Because of the opacity of the system, we need more analysis to know which of the two methods is more widely used. Nevertheless, by examining the data we can find, we note that the latter method seems to account for the majority of loans. Notably, taking LGFV loans in 2009 that had land as collateral, we note that these account for only 21% of infrastructure investment in China (this does not include urban development over the same period). This observation indicates quite clearly that these LGFVs base most of their loans “indirectly” on sales of LURs by their associated local authorities. There are a substantial number of studies that have sought to prove this hypothesis, but suffice it to say that we can assume with a sufficient degree of certainty that this is the case.<sup>11,12,13,14</sup> The prevailing view is that these loans represent a huge risk for the Chinese government, because if their land sales fell until there were not enough to cover their liabilities from these guarantees, the resulting defaults would be catastrophic. However, there is still a certain amount of controversy surrounding this last hypothesis.<sup>15</sup> Irrespective of all this, it should be noted that a failure in this sector would be strongly felt in the financial sector as well because of these loans: they can be seen as strong links between the success of the land financing system and the property and financial markets. As Chart 13 shows, LGFV loans play quite an important role in the Chinese economy. To put it concisely, in 2013, the deferred debt of local authorities arising from their LGFVs accounted for around 12.25% of Chinese GDP<sup>16</sup> The situation has become worrying. Following this observation by an audit firm, the Chinese government decided to try to curb the uncontrolled indebtedness of local authorities.

For example, in 2014, central government passed reforms to the means by which local authorities could engage in debt financing activities. Notably, it allowed local authorities to issue bonds, but on the condition that these bonds would only be repaid from future budget revenues (i.e. these repayments would not come from land finance).. In addition, these reforms have created a “special” bond, which local authorities can only issue to finance infrastructure investment projects. These “special” bonds can be repaid through land financing (more specifically, through future land sales). In this way, central government

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<sup>11</sup> Voir les citations suivantes:

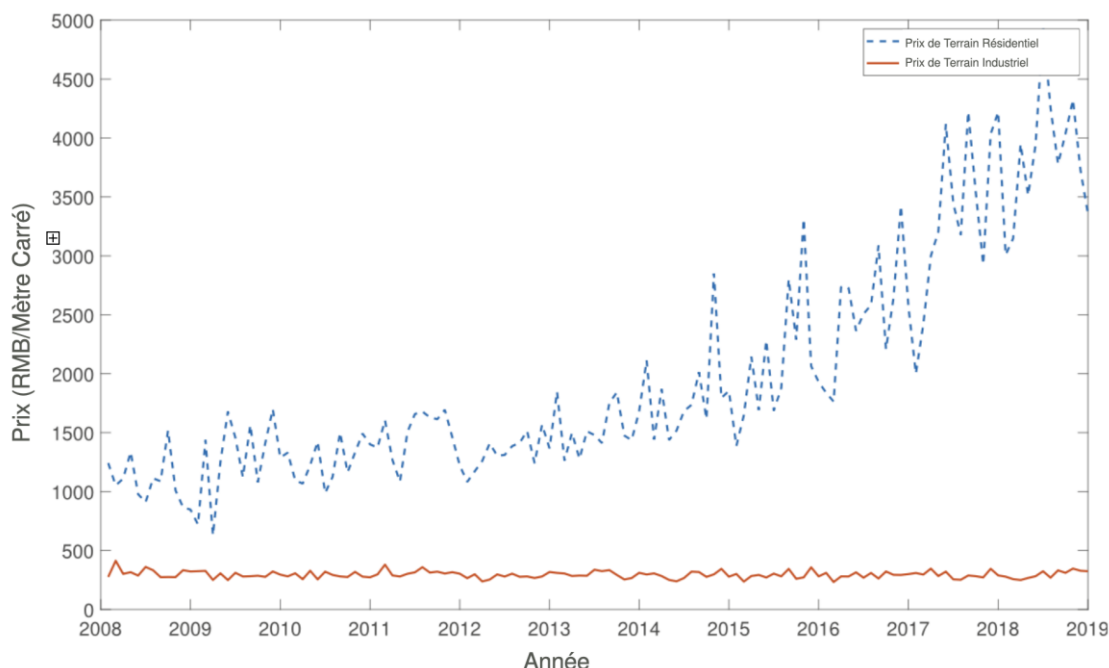
<sup>12</sup> Ambrose, Brent, et al. *Understanding the Risk of China's Local Government Debts and Its Linkage with Property Markets*. Décembre, 2015

<sup>13</sup> Bai, Chong-En, et al. *The Long Shadow of China's Fiscal Expansion*. Brookings Papers on Economic Activity, vol. 2016 no. 2, 2016, p. 129-181.

<sup>14</sup> Mo, Jiawei. *Land financing and economic growth: Evidence from Chinese counties*, China Economic Review, 9 juillet 2018

<sup>15</sup> Il existe des études qui affirment que ces prêts sont pas garantis si strictement de la part des collectivités locales — viz. Lu, Fang et Clarke, Donald, *op. cit.* — et donc elles peuvent éviter ces défauts en simplement refusant d’honorer les prêts. D’autres scientifiques arguent la contraire — viz. Tu, Liantang, et al. *op. cit.* ; Zhang, Rongjie, et al. *op. cit.*

<sup>16</sup> Il faut mentionner que cela ne constitue que le niveau d’endettement qui a été reporté par le gouvernement chinois suite du premier audit du endettement des collectivités locales.



**Graph. 15.** Prix de Terrain Résidentiel ou Industriel

Source du Graphique : Wang, R., & Hou, J. *Land Finance, land attracting investment and housing price fluctuations in China*. International Review of Economics and Finance, 2021.

Traduction faite par l'auteur

hoped to 1) curb the growth of local authority debt and 2) establish a legal framework for LGFVs so that the system would be less opaque for them.<sup>17</sup> It has only succeeded in achieving the latter objective. Since the 2014 reforms, the level of local authority debt has grown enormously. The reforms have succeeded in delaying LGFV debt somewhat, but despite their efforts, it is currently estimated that local government debt from their LGFVs accounts for around 41% of Chinese GDP (cf. 12.25% in 2013).<sup>18</sup> By creating "special" bonds for local authorities to use, the central government has opened a door that should have remained closed: Chinese bonds now account for around 60% of Chinese GDP.<sup>19</sup> These bonds come mainly from Chinese local authorities, and "12<sup>20</sup> Above all, the indebtedness of many local governments has exceeded a limit of profitability: these infrastructure investments were never the most profitable, but by the end of 2023, "monthly debt service exceeded 100% of monthly fiscal income for 12 of China's 31 provincial units."<sup>21</sup> This figure has quadrupled since 2017, indicating a worrying rate of growth. In

<sup>17</sup> Le gouvernement chinois ne sort pas toutes ces données, donc il reste tout aussi opaque pour nous.

<sup>18</sup> Shih, Victor et Elkobi, Johnathan. *Local Government Debt Dynamics in China*. UC San Diego School of Global Policy and Strategy, 27 novembre 2023. p. 3

<sup>19</sup> The State Council of the People's Republic of China

<sup>20</sup> Shih, Victor et Elkobi, Johnathan. *op. cit.* p. 3

<sup>21</sup> Idem

addition to this debt overhang regarding investment in land, local governments find themselves in a position of excessive dependence on these same land sales :

"The average value of reliance on land finance [at local authority level] is 43.4% and land-related equity is even higher than total budget income in 8% (or 21) cities."<sup>22</sup>

The situation is worrying for these local authorities. Their debts are based on future land sales, but these land sales (which make up a large part of their revenue) are no longer sufficient to offset the cost of their services.

In short, the local government debt situation has become worse and worse as the land finance system has evolved since the 1994 reforms. As a result of the use of LGFVs, local governments' reliance on debt finance to fund their infrastructure and property development projects has only increased, despite central government's efforts to the contrary. Nevertheless, this indebtedness could be justified if it served to achieve a return on investment.<sup>23</sup> Indeed, the objective of all this investment was theoretically to increase municipal economic activity and land value. According to a study by the International Monetary Fund (IMF) published in August 2023,

"The significant increase in infrastructure investment could have generated returns in excess of the cost of borrowing, increasing net financial value if the projects were commercially viable. However, emerging data from the various LGFVs suggests that returns on investment have steadily declined over time and on average have been lower than the cost of interest."<sup>24</sup>

All this has contributed enormously to the risk associated with the property and financial markets, as we shall see in the next section.

#### **D) Summary of the section**

We have set out above a series of systemic and contextual elements needed to understand the land finance system in China. We first set out the fundamental principles of the system and the importance of its role in the Chinese economy. Secondly, we have analysed how this system has led to the emergence of the LGFV as a ubiquitous tool in the People's Republic of China, and what it means for China as a whole. With these elements established, we are in a position to understand in the next section why and how this system has generated risk in China's property and land markets.

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<sup>22</sup> Zhang, Rongjie, et al. *op. cit.* p. 8

<sup>23</sup> La dette n'est pas toujours quelque chose de mauvais. Si on l'utilise bien, une dette peut être un outil puissant pour profiter d'un investissement. Par exemple, contracter un prêt hypothécaire pour acheter un logement peut être une décision bien prise, puisque votre logement peut augmenter en valeur dans l'avenir. Cependant, emprunter d'argent pour acheter une voiture de luxe n'est pas une bonne idée : votre voiture perdra la plupart de sa valeur au moment où vous la sortirez de chez le concessionnaire.

<sup>24</sup> Lam, Raphael W., et Moreno-Badia, Marialuz, *Fiscal Policy and the Government Balance Sheet in China*. IMF, août 2023, p. 22



## II - Risks in the Chinese economy linked to the land financing system

### **1. The property market**

The risks arising from China's property financing system are naturally varied and diverse. We will try to classify them according to the sector in which they are found. We will start with the most relevant sector: the property market. The question is: how has the land financing system affected the property market in China? These two parts of the Chinese economy are highly interconnected, and the information provided in the previous section gives us a better understanding of how. For local authorities to remain in good financial health, urban land prices must never stop rising, which is why they invest in local infrastructure. Because of this, property has proved to be a very lucrative investment for the Chinese, whose performance has far outstripped that of the stock market. For example, an investment of €100,000 in property in China in 2007 would be worth €262,000 today.<sup>25</sup> The same investment in the GXC foundation (which represents the performance of the Chinese stock market fairly well) would have generated a gain of just €141,000.<sup>26,27</sup> It is easy to see why property has become such a popular investment for the Chinese (see Charts 14 and 15). It is interesting to note, however, that local authorities have achieved this by artificially regulating the property market. To stimulate more economic activity in the city, they keep industrial land prices artificially low, and to generate revenue, they drive up residential prices (see Chart 15). As a result,

"China's land financing policy has segregated the property market. Through policy barriers, industrial land and residential land are forced into segmented markets. Stimulating real investment as expected, this practice also increases property prices and weakens the effect of fiscal policy."<sup>28</sup>

Despite their intentions, this segmentation of the market "prevents the easy reallocation of land between industrial and residential land, resulting in reduced efficiency."<sup>29</sup> Local authorities' desire for the profits generated by converting rural land into urban land creates this rigidity between urban and industrial land: conversion between the latter does not generate money for local authorities, which prevents natural development. This results in "larger towns, but less developed town centres (i.e. with older and lower buildings) than would be optimal."<sup>30</sup> The places where industry can develop most effectively are destined to become suburbs with much less economic potential. Taking Guangzhou (one of China's largest cities) as an example, we can see this problem clearly. Driven by their need to make a profit, the municipal

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<sup>25</sup> National Bureau of Statistics of China

<sup>26</sup> "SPDR S&P China ETF (GXC)", *stockanalysis.com*, <https://stockanalysis.com/etf/gxc/chart/>, 20 mai, 2024

<sup>27</sup> Si on avait fait le même avec le S&P 500, on aurait 371.000 €

<sup>28</sup> Wang, R., & Hou, J., *Op. Cit.* p. 697

<sup>29</sup> Wang, R., & Hou, J., *Op. Cit.* p. 695

<sup>30</sup> Zhang, Rongjie, et al. *op. cit.* p. 8

government has expanded the residential sections of the city much more than necessary. Today, the city's vacancy rate remains at around 17.7%,<sup>31, 32</sup> and in these outlying areas of the city it is estimated to be between 20% and 40%.<sup>33</sup> In addition to this unnecessary and ill-chosen development, the financing of land is causing strong variations in housing prices in China: depending on the development projects planned for the area, these can change by up to 40%.<sup>34</sup> This goes some way to explaining the excessively high rents in some Chinese cities, such as Beijing, Shenzhen and Shanghai, where the ratio between rent and average income is over 90% compared with 31% in New York in the United States or 33% in Paris in France.<sup>35, 36,</sup>

<sup>37</sup> We can attribute these inflated prices to the attractiveness of city centre property to the Chinese, but given the slowdown in the rate of urbanisation and the decline in the current population, we should reconsider whether it will remain a good investment. Returning to Chart 3, it should be noted that the figures indicate that fewer and fewer Chinese are buying property to live in: an equally high rate of buyers who already own one or more homes (79%<sup>38,39</sup>) would normally indicate growth in renters, but China's summer home ownership rate of around (90%<sup>40</sup>) indicates that this is not the case. So we can safely assume that - despite Xi Jinping's famous statement that "housing should be a place to live, not a place for speculation" - the Chinese are committed to it all the same.<sup>41</sup> - the Chinese are committed to it all the same. And so this is where we find the main risk of the property market in China: the precarious relationship between the Chinese and property developers. Because of the commitment of local authorities, Chinese property developers sell their products at expensive prices to the general public, who - motivated by the reliability of property investment - buy them. So far, this system has worked quite well: Chinese investors have been able to take advantage of the growth in property values, property developers have never had trouble finding buyers, and local authorities benefit from continued growth in economic activity in their area. But in recent years, this system has begun to show weaknesses: the decline in the number of Chinese people buying real estate to live in, combined with a drop in housing starts (see Figure 16) and the Covid-19 pandemic, has put the system under pressure, and the results have begun to be seen. In 2021, Evergrande, one of China's

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<sup>31</sup> Ce dernier a dû être estimé en analysant le montant de lumière émise pendant la nuit puisque le gouvernement chinois ne publie plus de données concernant le taux d'occupation

<sup>32</sup> Savills Research, *Office, Guangzhou, February 2024*. Savills Research, février 2024, pg. 2

<sup>33</sup> Yue, Xiaoli, et al. *Estimation of Urban Housing Vacancy Based on Daytime Housing Exterior Images — A Case Study of Guangzhou in China*. International Journal of Geo-Information, juin 2022, pg. 11

<sup>34</sup> Wang, R., & Hou, J., *Op. Cit.* p. 691

<sup>35</sup> National Bureau of Statistics, China

<sup>36</sup> National Census Bureau, United States

<sup>37</sup> Institut National de la Statistique et des Études Économiques (INSEE)

<sup>38</sup> Kenneth, Rogoff, et Yuan Chen, Yang. *Has China's Housing Production Peaked ? China and the World Economy*, Vol. 21, 2021

<sup>39</sup> 2017 Analysis of China Urban Household Vacancy, Survey and Research Center for China Household Finance.

<sup>40</sup> Clark, W.A.V., Huang, Y. & Yi, D. *Can millennials access homeownership in urban China?* Journal of Housing and the Built Environment 36, 69–87, 2021

<sup>41</sup> Discours de Xi Jinping pendant 19ème Congrès du Parti, 2017. Traduction faite par l'auteur.

largest real estate developers, went bankrupt due to massive over-indebtedness. Most recently, this became the largest fraud case in history: by selling apartments to Chinese people that had not yet been built (in some cases, work had not even begun), the financial fraud Evergrande was charged with in 2024 amounts to \$78 billion, seven times larger than the previous one. The bankruptcy stemmed from the company's over-indebtedness, but what triggered it was the "three red lines" reforms that were implemented by the Chinese government in 2020. The central government recognized that real estate developers were often over-indebted, and these reforms established strict rules regarding the level of debt relative to assets allowed for these developers. Evergrande (among a few other real estate developers) could not follow these rules, and therefore had to file for bankruptcy. Many other real estate developers had to restructure (because they were not fiscally sound), and therefore their productivity has declined significantly since these reforms were implemented.

So the risks in the real estate market generated by the land financing system can already be felt by these developers. The other risk in this sector that must be recognized is more related to Chinese investors who are real estate owners. The vast majority of their fortunes reside in this, and it is critical for their future that the value of Chinese real estate does not cease to increase (or at least that it does not decrease). Their wealth could really disappear very quickly, since the value of real estate anywhere in the world is based on the amount that people are willing to pay for it. So the stability of the Chinese economy really depends on people's feelings: if they no longer swear real estate is a good investment, the system (from the revenues of local governments from land sales, to real estate developers, to the wealth of the general public) could collapse.

In short, the land financing system has generated the most risk in the Chinese real estate market, since this is where it finds most of its profitability. Throughout the system, there are weak points: whether they are among real estate developers who are often over-indebted, or the Chinese themselves who base their futures on the expected value of real estate, they still exist. We can already see that the system is under pressure, so the question is when and how it will collapse rather than if it will. So we will now move on to the other main sector where we find that the risks generated by the land financing system are most felt.

## **B) The Financial Sector**

Just as the Chinese real estate market has marked differences from those of other countries, so too are the links between the latter and the Chinese financial sector. We can immediately see that their mortgage system differs from the Western model. Indeed, there are no real mortgage brokers within the Chinese system, which has some notable effects on the nature of the link established between the real estate market and the financial sector. Thus, the phenomenon of "interconnection" increases considerably between the real estate market and the financial sector. In contrast, in the Western system, mortgage brokers play an

important role as an intermediary between the real estate market and the financial sector. However, in China,

« The source of financing for the Chinese real estate market is bank loans. In this case, real estate risks will be entirely concentrated in the Chinese banking system, which could lead to systemic risks throughout the economy.»<sup>42</sup>

This absence of mortgage brokers provides the government with increased control over Chinese mortgages: if financial markets rely exclusively on banks for their mortgages (which are often state-controlled), mortgage policies can be propagated both faster and more efficiently than in other countries. We have just established that China, lacking mortgage brokers, has a stronger link between the real estate market and the financial sector than those found in Western markets. Is it possible for us to quantify these links? Using the methods of Ouyang and Zhou, Zhang, Xinhua, et al., and Chien-Fu and Chiang, we will attempt to quantify in a popularized manner what we will call the "interconnection" that exists between the Chinese real estate market and its financial sector. We will refer to the following variables, which come from these last three articles.

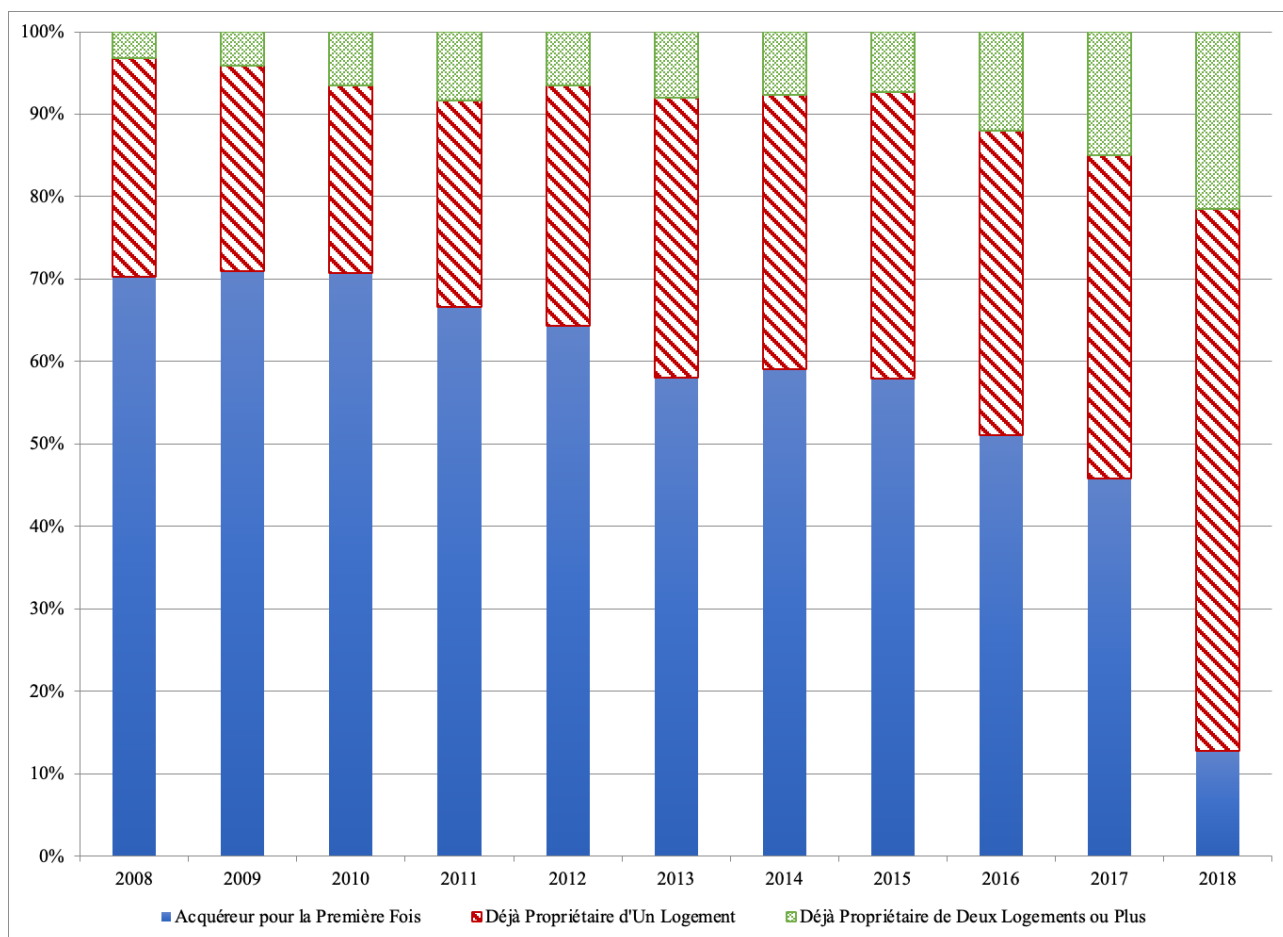
Variable	Explication
<b>Connexion Totale (TC - Total Connectivity)</b>	La fortitude des liens qui existe provenant du marché immobilier au secteur financier et vice-versa.
<b>Efficacité Globale (GE - Global Efficiency)</b>	L'efficacité avec laquelle le risque se propage à l'intérieur d'un réseau.
<b>Degré Moyen des Noeuds (AND - Average Node Degree)</b>	Le moyen de connections qu'un noeud (une société immobilière ou financière) possède qui en provenant ou y allant avec d'autres membres du réseau.
<b>Unicité Rapport de Bord (UER - Uniqueness Edge Ratio)</b>	La ratio d'unicité entre deux réseaux donnés.
<b>Valeur à Risque Auto-régressive Conditionnelle (CAViAR - Conditional Autoregressive Value at Risk)</b>	Une mesure du montant qu'un portefeuille donné peut perdre au cours d'une période donnée, pour un niveau de confiance donné.

<sup>42</sup> Ouyang, Zisheng, et Zhou, Xuewei. *Op. cit.* p. 1-2

We will quickly summarize the results relevant to our study topic. Analyzing these data, we first notice trends indicating that the main transmitters and issuers of risk in relation to the financial sector were the same real estate developers that we discussed in the previous section. These real estate developers notably had an average NDA value of 8.94, which means that each real estate company is significantly connected on average with about nine other companies (real estate or financial). Moreover, these Chinese real estate companies are much more connected in general than their counterparts in other countries by about 170%, and they are 220% more connected than Chinese financial companies.

## Graphiques pt. 2

Tous les graphiques ont été créés par l'auteur, sauf indication contraire.



**Graph. 3.** Nombre de Logements des Nouveaux Acquéreurs Chinois

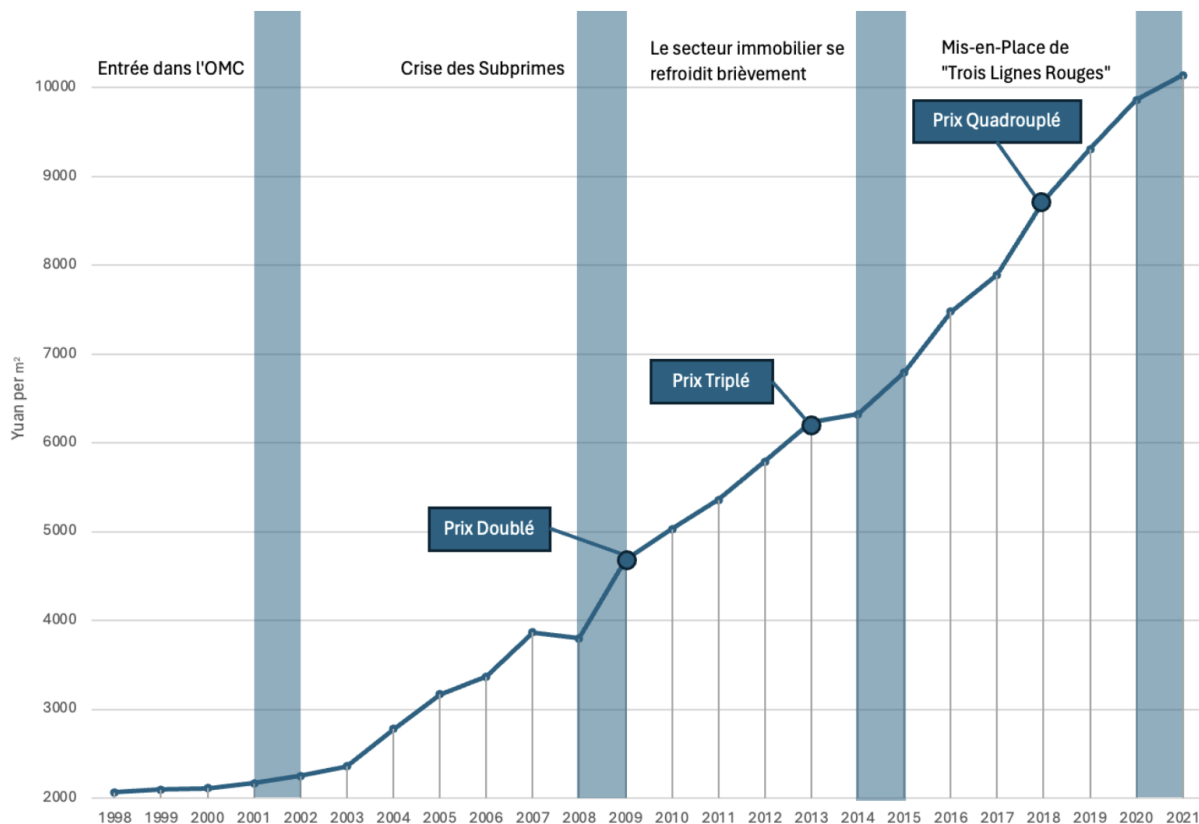
Source du Graphique : Kenneth, Rogoff, et Yuanchen, Yang. *Has China's Housing Production Peaked ?* China and the World Economy, Vol. 21, 2021

Source des Données : Survey and Research Center for China Household Finance

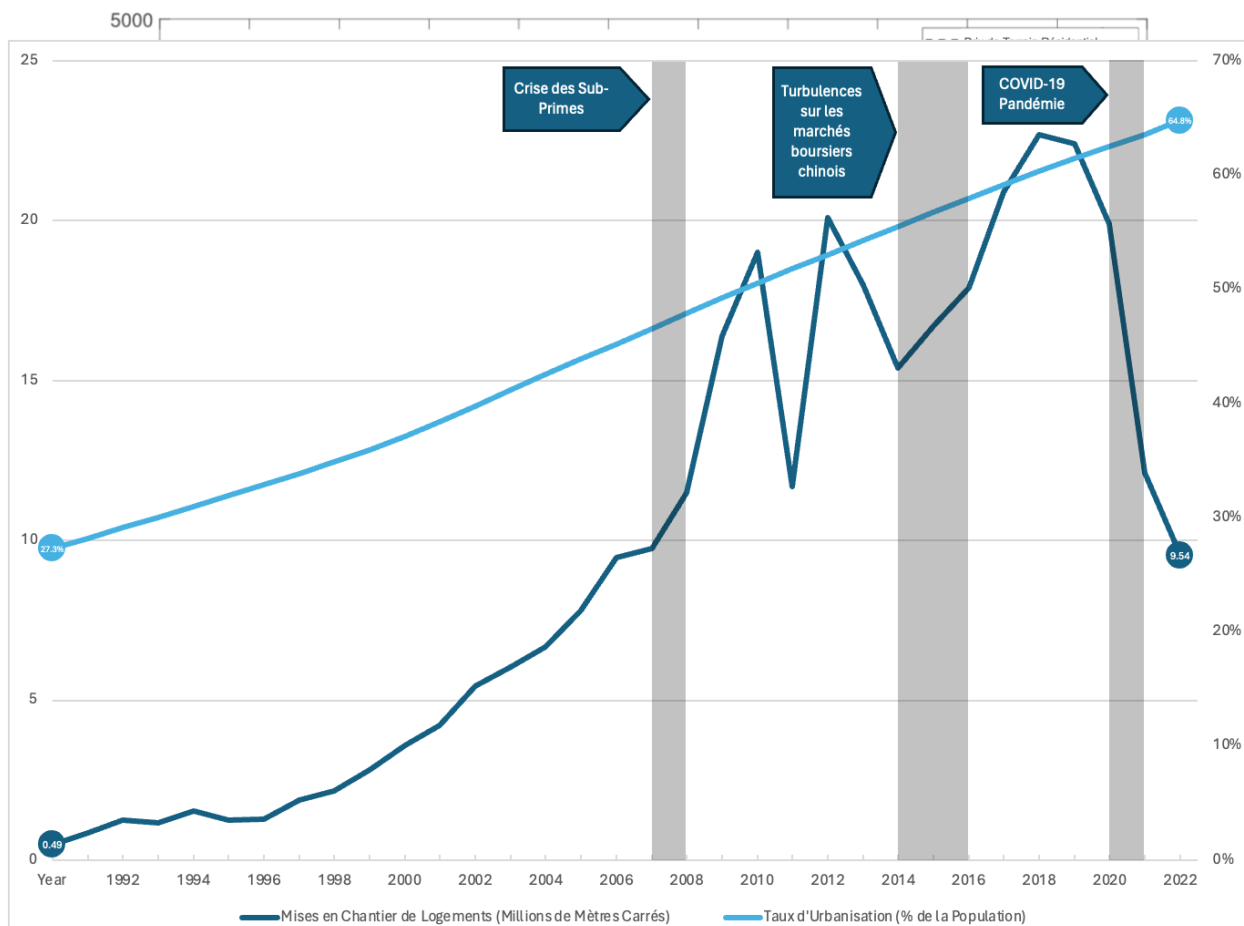
**Graph. 13 : Dette des collectivités locales au 30 juin 2013 (en milliards de yuans)**

Type d'entité qui contracte la dette	La dette pour laquelle la collectivité locale assume la responsabilité du remboursement	La dette pour laquelle le gouvernement local est responsable en tant que garant	La dette pour laquelle le gouvernement local peut assumer une certaine responsabilité en matière d'assistance
<b>Entreprises de Financement</b>	4075,55	883,25	2011,64
<b>Départements et Organes Gouvernementaux</b>	3091,34	968,42	0
<b>Institutions dont les dépenses sont subventionnées</b>	1776,19	103,17	515,71
<b>Sociétés de financement ou holdings d'État</b>	1156,25	575,41	1403,93
<b>Institutions responsables de leurs propres recettes et dépenses</b>	346,29	37,79	218,46
<b>Autres unités</b>	316,26	83,14	218,46
<b>Institutions de service public</b>	124,03	14,39	189,64
<b>Total</b>	10885,92	2665,58	433,37

Sources : Lu, Fang et Clarke, Donald, *op. cit.*, *National Audit Report, 2013*



**Graph. 14.** Prix de Vente Moyen de l'Immobilier en Chine par m<sup>2</sup>  
 Source : National Bureau of Statistics of China





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Moreover, the GE of real estate companies in China is 13% higher than in Western countries. , , In sum, Chinese real estate companies are not only the most connected risk transmitters within the network, but they are also those that can transmit risk factors among themselves and within other nodes in the most efficient way. Analyzing both the TC, AND, GE, and CAViaR of each node, we notice that among real estate companies, the largest risk transmitters are the smallest real estate developers; conversely, and the most risky financial companies are also the most developed. This first observation can be attributed to the fact that real estate companies with the narrowest profit margins are often the smallest. Therefore, the companies we expect to go bankrupt would rather be the smallest (cf. with the bankruptcy of Evergrande) and those despite the fact that larger real estate companies have significantly more loans committed to financial companies. The reasons why the second observation can be explained are easier: by their nature as a financial company, the largest companies will have lent more money to more real estate companies. Since the latter are the largest transmitters of risk, it is easy to see why our analysis would indicate that the largest financial companies are also the most at risk. Unfortunately for China, these measures have gained momentum since the “three red lines” reforms of August 2020. Specifically, among these real estate developers, their average AND with the network of financial companies saw a growth of 154%, the GE in the network of real estate companies grew by 138%, the TC of both networks increased by 164%, while the directional connection between the real estate market and the financial sector increased by 211%. These reforms were intended to constrain the leverage (and thus the risk coming from) of Chinese real estate companies, so they made the debt financing process more difficult for them. In fact, these reforms have primarily subjected these companies to greater financial stress, since it has suddenly become much more difficult due to 1) the new difficulty of borrowing money to finance their operations and 2) a perceived lack of individuals willing to invest in them, making their financing even more difficult. Thus, these real estate companies are exposed to increasing financial pressure, which leads to an increase in risk within them. If these companies can no longer finance themselves, they are forced to reduce their development, or even stop the construction of new housing (see Figure 16). This risk can be transmitted to financial companies through the loans they have already granted to real estate companies. Moreover, new studies show that these types of tax reforms (which are intended to constrain dangerous links between the real estate market and the financial sector) are not capable of reducing risks.

In short, we observe that the risks inherent in the land financing system in the real estate market are also easily transmitted to the Chinese financial sector. This phenomenon is likely to pose significant problems in the future, especially when it is recognized that the measures already taken by the Chinese central government are at best insufficient, if not ineffective or harmful.

### **C) Summary of the Section**

In this final section, we examined in detail the risks arising from the land financing system to the Chinese real estate market and the financial sector. To summarize, the most prevalent risks within the real estate market concern both the Chinese general public and real estate developers. For the general public, it is rather an overvaluation of real estate values. As we have observed, this phenomenon leads to a real estate market whose value represents most of the wealth of the general public, which contributes to what we would call a "real estate bubble", not far removed in principle from what directly preceded the subprime crisis in the United States in 2007-2008. This real estate bubble is not likely to burst in the same way we saw in 2007-2008, but it still risks causing a period of deflation where the market adapts to lower real estate values. This latter phenomenon threatens to trigger a recession in China, as the general public's wealth could be significantly reduced in a few days by revaluing real estate. As we previously explained, the real estate market's problems stemming from the mortgage financing system are also likely to spread to the financial sector. It seems that the Chinese government is aware of these limitations, as it has indeed passed a series of reforms intended to limit these undesirable effects. As we have just seen, these reforms have not really achieved this goal. Rather, it seems that they could even accelerate this process by putting these real estate companies under significant financial pressure, which at the same time exacerbates the risks within the real estate market, which in turn affects the financial sector. Another undesirable by-effect is found in the number of new housing starts. This last figure generally represents the health of Chinese real estate companies, since if they no longer start new housing, they will naturally no longer be able to sell them in the future. The decline in this last indicator represents a serious decline in the feasibility of reliable future revenue-generating practices for these companies (see Figure 16).

We now need to examine how the risks and problems affecting Chinese markets are reverberating around the world. We have already drawn several parallels between what is happening in China's real estate market (and its housing bubble) and the subprime mortgage crisis of 2007 and 2008 originating in the United States, whose effects were felt worldwide. Does this mean that China's problems are likely to cause a crisis of similar magnitude globally?

## II - Possible effects from the Chinese land financing system

### **A) Effects already apparent**

Currently, we are already able to observe that some of the effects of the economic turbulence in China are having repercussions around the world. The Chinese government, as we have already seen, is grateful for what may happen in their real estate market in the future. Given that this sector constitutes such a large part of the Chinese economy (see Figure 4), it is important for them that the Chinese economy transition to another sector if necessary. Analyzing the data, it becomes evident that the government is trying to focus on increasing manufacturing activity: in the year after the crossing of the "three red lines" in August 2020, manufacturing activity saw growth of USD 1.049 billion, the largest growth in a year both

net and in percentage terms. This focus on manufacturing activity is increasingly visible when examining China's policies in relation to its trade with other countries. Although China is increasing its manufacturing activity (and in doing so producing more and more goods), it cannot consume all of its production; the Chinese economy is based on its exports, and therefore an increase in manufacturing activity must respond to a more or less equal increase in its exports. Unfortunately for China, it seems that the central government has anticipated this manufacturing production: China has a huge stockpile of goods that it does not need, and therefore it is accused (by the United States (USA) and the European Union (EU)) of having started to practice commercial dumping, that is to say a commercial practice in which a country exports and sells abroad a product or service at a price lower than its domestic price, often below the cost of production, with the aim of conquering market share in another country and subsequently starting to raise prices again , , . These accusations focus on Chinese exports in the automobile, metal products, and chemical industries, whose exports increased by 327%, 100%, and 34%, respectively, in 2023 compared to the previous year. The production and export of Chinese electric vehicles has seen quite remarkable growth (about 400% since 2021) in recent years (partly thanks to this trade dumping practice consisting of subsidies of dubious legality under World Trade Organization (WTO) rules). This situation is one of the clearest cases of the government's renewed focus on the manufacturing sector.

In addition to the central government's renewed investment in manufacturing, we are seeing a significant increase in Chinese investment in foreign real estate. We could attribute this phenomenon to a negative feeling among the Chinese public about the reliability of Chinese real estate as an investment in the future, which would push them to seek other investments that they consider more reliable (see Figure 16). Knowing that the preferred investment of Chinese citizens is real estate, we can expect an increase in investment in foreign real estate - provided that they judge that these markets will be more stable in the future. We notice this trend in recent years mainly in Thailand (one of the most popular tourist destinations outside of China for Chinese citizens) which has had a growth of 14.7% in real estate investment made by foreigners, of which about 50% are Chinese buyers. A similar situation exists in South Korea, where Chinese buyers account for 54% of foreign investment in real estate. In Hungary, Chinese investment is flourishing, reaching approximately €7.6 billion in 2023. Moreover,

« The Hungarian government is launching a new program for non-EU and non-EEA nationals, which will grant them a ten-year residence permit in exchange for a donation to real estate or a trust, as well as for the purchase of real estate.»<sup>43</sup>

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<sup>43</sup> Bánáti, Anna, "Chinese buying apartments in Hungary more and more as investment", *telex.com*, <https://telex.hu/english/2024/05/21/number-of-chinese-investing-in-apartments-in-hungary-increases>, 23 mai, 2024, traduction faite par l'auteur

The implementation of this "golden visa" program reflects a worrying trend by the Hungarian government toward allowing more and more foreign investment into the country (which is already struggling with its own housing bubble). The influx of wealthy Chinese investors looking to buy real estate as a hedge isn't exactly good for any of these countries: it's driving property price increases that can prevent residents from owning their own homes.

In short, we can already see the side effects (often harmful) of China's land financing system spreading around the world. Whether they are unfair trade practices stemming from a renewed reliance on manufacturing to drive economic growth or investment in foreign real estate, these effects are readily apparent. We must now try to predict the effects that may occur in other countries in the future due to a potential collapse of the land financing system.

### **B) Potential effects in the future**

Based on what we have already observed, we can attempt to formulate some hypotheses about the potential consequences of disruptions in China's land finance system, real estate market, and financial sector. First, we can say with a fair degree of certainty that China's trade practices will remain largely unchanged. We expect the Chinese government to continue to emphasize the manufacturing sector, which has proven to be both profitable and reliable for China. Regarding its trade with other countries, to the extent that the EU and the US plan measures to compete economically with China and its alleged dumping of goods, we can expect the Chinese government to impose reactionary tariffs. To compensate for a possible loss in trade volume with these countries, we can predict that China will attempt to increase its trade (as it already does) with Russia and the generally non-aligned countries of the global South. Finally, as India focuses heavily on increasing its own manufacturing activity, we anticipate heightened tensions between India and China, due to Indian companies competing against lower prices and China's greater production capacity.

Regardless of the outcome of the Chinese land financing problem, we can predict certain effects that should result from it. First, we expect a sharp slowdown in Chinese economic growth, perhaps even a decline in GDP. The global effects of the latter are based in particular on the importance of foreign investment from other countries. The greater this presence, the more harmful the effects will be. We can already see that companies have anticipated this: foreign investment in China is at its lowest in 30 years, having declined by 80% since 2022. It is difficult to overcome these general expectations. To the author's knowledge, there is no literature dealing with this type of question, or at least no literature that would apply to this question and provide more precision.

### **C) Summary of the Section**

In summary, we have presented the readership with an overview of the significant effects resulting from a disruption in the Chinese land financing system and its risks within the Chinese economy. In short, the consequences will be rather linked in their exchanges with other countries (which we can already notice today), but we can also foresee financial spillover effects due to the presence of foreign investment in China. The latter should not be felt at the level of 2008, since the situations are different: in fact, the Chinese economy is relatively isolated compared to the countries most affected by the global financial crisis of 2007-2008. Extrapolating data on the diffusion of the 2008 effects provided by Zhang et al. (2023) and Chen & Chiang (2022), we can theorize that the extent to which the G7 countries could be affected by a Chinese recession would be significantly reduced (by a factor of about 30%). However, it should be noted that these predictions remain hypotheses based on a set of data chosen to support our argument; our reasoning here has its limits.

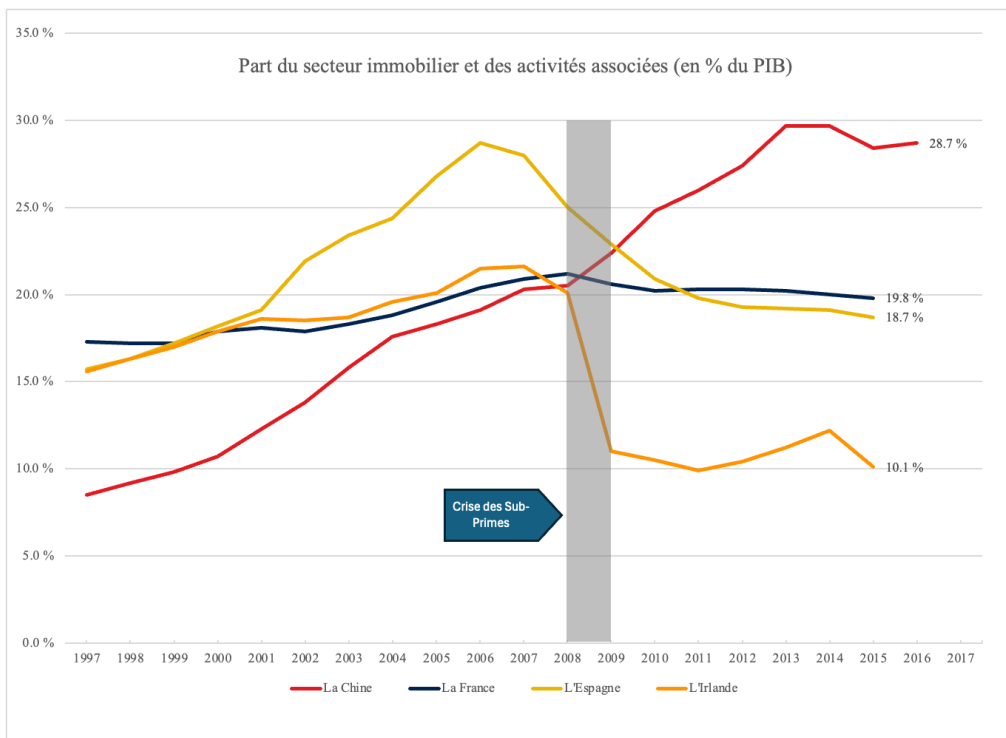
## **Conclusion**

Just recently (May 17, 2024), the Chinese central government announced its intention to allow local governments to lend money and purchase housing built by these real estate companies that are in crisis. Subsequently, local governments will convert these homes (purchased at reduced prices from the real estate companies since they have remained unsold for years) into low-rent housing. This process, under the promise of financial gain, is likely to lead to harmful side effects for the system as a whole. First, this act of subsidization, while supporting real estate companies by artificially keeping them afloat, may encourage the continuation of questionable tax practices, the very people who put them in this crisis situation in the first place. However, this practice remains necessary, considering that the real estate development sector employs approximately 2.5 million Chinese; any decrease in activity would have significant effects on this part of the population and increase unemployment. China already has quite a few problems with the latter, their unemployment rate remains at around 5.2% among the general public, and around 14.7% for non-student youth. , , , In addition, stopping subsidies would lead to even greater debt for local authorities. However, as we have already explained before, this phenomenon of debt accumulation is already a problem to be resolved. In addition, some local authorities are already under too much pressure and have debt that is far too high compared to the norm. It is still worth questioning the government's room for maneuver: is it able to propose a solution to these various problems? The excessive dependence of local authorities on the land financing system supports this double paradox of, on the one hand, too essential to collapse and too problematic to perpetuate itself. There is no immediate and obvious solution to such a dilemma: it would seem that the Chinese government is doomed to delay the day this system collapses as much as possible, and to try to anticipate the consequences as much as possible in order to minimize them. However, this decision could have harmful effects not only for local communities, but also for the real estate market itself. The introduction of so much low-rent housing would exert significant deflationary pressure on the Chinese

real estate market. There are approximately 10,000,000 of these units, and such an influx would have profound effects on the entire real estate market by causing a drop in prices and thus a loss of wealth similar in nature to what we discussed in the second section. In sum, there are many types of risks present in both the Chinese real estate market and the Chinese financial sector because of China's mortgage financing system. How these risks will play out in the future remains an open question. In summary, our approach was threefold. First, we thoroughly explored the land finance system as it exists and operates in the DRC, striving to shed light on its history and dynamics. We then applied the principles of the land finance system to clarify the risks it poses within Chinese real estate markets and the financial sector. Finally, we attempted to predict the global consequences of these problems in the Chinese economy by extrapolating from the policies and measures the central government has already implemented to address some of these issues and from the actions of individual Chinese individuals acting as a cohesive and coherent group regarding their overseas real estate investments. Regarding future literature on the same topic, we suggest more specific studies regarding 1) the regulation of land prices carried out by local governments since 1994 to the present day 2) the interconnection between entire sectors of a country with those of others 3) how to analyze the transmission of risk between two or more countries. These topics deserve special attention without having a sufficiently exhaustive literature.

## Graphiques pt. 3

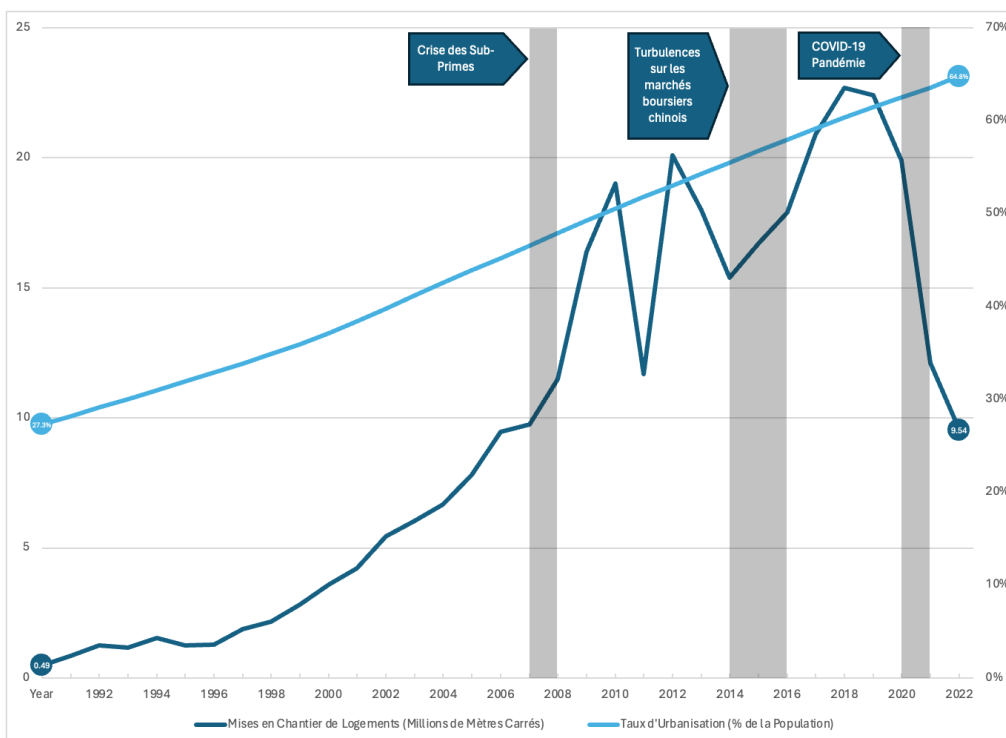
Tous les graphiques ont été créés par l'auteur, sauf indication à la contraire.



**Graph. 4.** Part du secteur immobilier et des activités associées (en % du PIB)

Source : KLEMS ; Carré, Thomas, et al. *La dépendance de la croissance chinoise au secteur immobilier*.

Ministère de l'Économie, des Finances, et de la Souveraineté Industrielle et Numérique, août, 2022, p. 2 ; Kenneth, Rogoff, et Yuanchen, Yang. *Has China's Housing Production Peaked ? China and the World Economy*, Vol. 21, 2021.

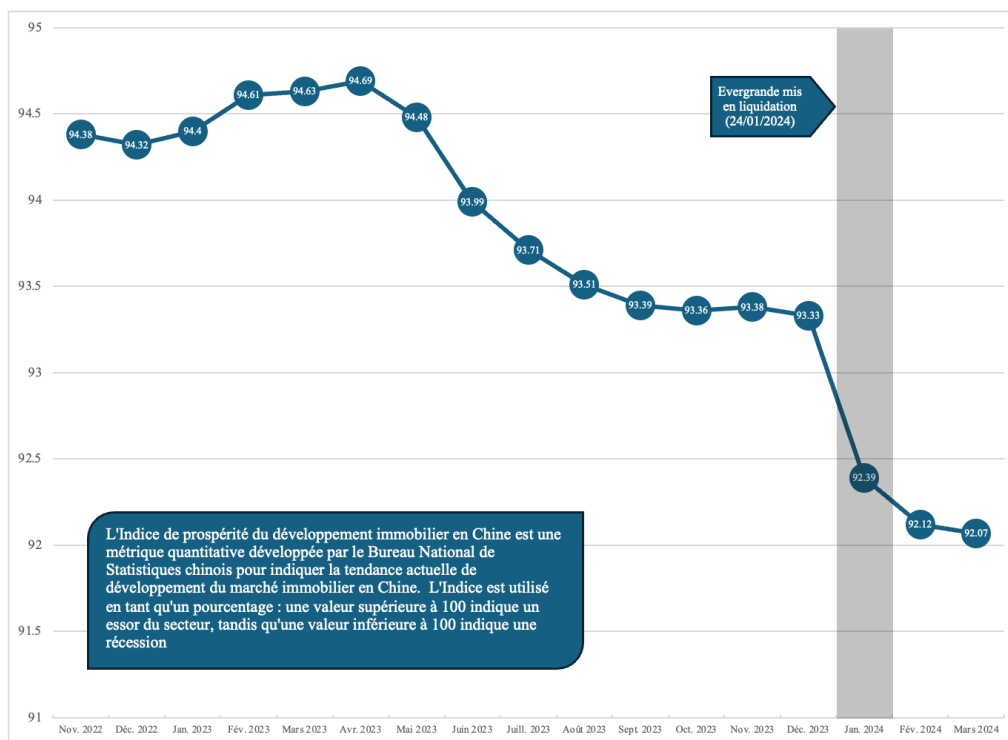


**Graph. 16.** Mise en Chantier de Logements (Millions de Mètres Carrés)

Sources : Trading Economics, "Chinese Housing Starts", [tradingeconomics.com](https://tradingeconomics.com/china/housing-starts),

<https://tradingeconomics.com/china/housing-starts>, 3 mai 2024 ; Macrotrends, "Chinese Urban Population 1964-2024" [macrotrends.com](https://www.macrotrends.net/global-metrics/countries/CHN/china/urban-population) <https://www.macrotrends.net/global-metrics/countries/CHN/china/urban-population>





**Graph. 17.** Indice de Prospérité du Développement Immobilier en Chine  
Source : National Bureau of Statistics, China

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## THE CONSTITUTIVE ELEMENTS OF AN ECONOMY: LAND FINANCE IN CHINA AND THE RISKS THAT IT POSES FOR THE CHINESE ECONOMY

In 1994, China enacted sweeping reforms of its fiscal system, changing the way that its local governments generated their revenue. These reforms were one of many designed to help China shift from a planned to market economy and reduce its budget deficit. These reforms re-allocated the vast majority of tax revenue from the Chinese local governments to instead be directed exclusively toward the central, national government. In the space of a year, the local governments saw their fiscal revenue drop on average 42%, while their expenses remained roughly the same (see Figure 1). As a result, local governments had to find another source of funding, which took the form of the system of land finance as we know it today. Although it has never been officially recognized by the Chinese central government, the system resulting from this fiscal reform has become a common practice among local governments. Its operation relies on the difference in value between urban and rural land, with the advantage that local governments derive from this being that they are the only entities able to convert land from rural to urban. The latent profit that exists between these two land classifications along with strict controls on maximum sale prices for rural land, has enabled local governments across China to fill the financial void left by the 1994 budget reform. Simplified to the extreme, since 1994, local governments have been buying up rural land at low prices to resell it at high prices all the while using these profits to build infrastructure (with the goal of increasing the value of existing urban land) and to subsidize enterprises (to increase the economic activity in their cities). This system has proved highly lucrative over the years and this success is due in part to the appeal of real estate to the Chinese, who regard it as the investment par excellence. Recently, however, cracks have started to appear in the foundations of this system : local governments have taken to extreme debt financing to enable larger and large development projects while the property development companies operate with concerning asset-to-debt ratios. With over 30% of the Chinese economy relying on the real estate market and its upstream and downstream industries, the Chinese government has begun to attempt to regulate an industry that has operated under the table for too long. Are their efforts too late? Currently, the debt servicing of 12 out of the 31 Chinese provincial governments exceeds their monthly revenue, and outstanding bond totals in these same provinces account for over 50% of their GDP. This thesis attempts to provide a detailed and comprehensive resource that covers the basics of the system of land finance in China, the risks that have emerged in the Chinese real estate and financial sectors as a result of this system, and the effects that might be felt in the near future across the markets of the world.

## Bibliographie

### Sources académiques principalement utilisées :

Ambrose, Brent, et al. *Understanding the Risk of China's Local Government Debts and Its Linkage with Property Markets*. Décembre, 2015

Ang, Yuen Yuen *How China Escaped the Poverty Trap*. Cornell University Press, 2016, pg. 86.

Bai, Chong-En, et al. *The Long Shadow of China's Fiscal Expansion*. Brookings Papers on Economic Activity, vol. 2016 no. 2, 2016, p. 129-181.

Carré, Thomas, et al. *La dépendance de la croissance chinoise au secteur immobilier*. Ministère de l'Économie, des Finances, et de la Souveraineté Industrielle et Numérique, août, 2022

Clark, W.A.V., Huang, Y. & Yi, D. *Can millennials access homeownership in urban China?* Journal of Housing and the Built Environment 36, 69–87, 2021

Chen, Chien-Fu, et Chiang, Shu-hen. *From systematic to systemic risk among G7 members : Do the stock or real estate markets matter ?* Journal of International Financial Markets, Institutions & Money, 26 mai, 2022.

Engle, Robert F. Et Manganelli, Simone. *CAViaR : Conditional Autoregressive Value at Risk by Regression Quantiles*. Journal of Business & Economic Statistics, octobre 2004.

Han, Zenglin, et al. *Synergistic analysis of the resilience and efficiency of China's marine economy and the role of resilience policy*. Marine Policy, octobre, 2021.

Jia, R., et al. *Political selection in China : The complementary roles of connections and performance*. Journal of the European Economic Association, 13(4), 631-668, août 2015

Jiang, Junhua *Can real estate regulatory policies constrain real estate risks to banks? Evidence from China*, Journal of Chinese Economic and Business Studies, 19:1, 35-53, 2021

Jordà, Òscar, et al. *Betting the house*. Journal of International Economics, 31 décembre, 2014

Justiniano, Alejandro, et al. *Credit Supply and the Housing Boom*. Federal Reserve Bank of Chicago, juin, 2019.

Lam, Raphael W., et Moreno-Badia, Marialuz, *Fiscal Policy and the Government Balance Sheet in China*. IMF, août 2023, p. 22

Li, H., et al. *Political turnover and economic performance : The incentive role of personnel control in China*. Journal of Public Economics, 89(9-10), 1743-1762, septembre, 2004.

Lu, Fang et Clarke, Donald *The Law of China's Local Government Debt Crisis: Local Government Financing Vehicles and Their Bonds*. George Washington University - Law School, 12 août, 2016

Kenneth, Rogoff, et Yuanchen, Yang. *Has China's Housing Production Peaked ?*. China and the World Economy, Vol. 21, 2021

Kofner, Stefan. *The German housing system: fundamentally resilient?* Journal of Housing and the Built Environment, 28 novembre, 2013.

Murphy, Lawrence. *The global financial crisis and the Australian and New Zealand housing markets*. Journal of Housing and the Built Environment, septembre, 2011

Ouyang, Zisheng, et Zhou, Xuewei. *Interconnected networks : Measuring extreme risk connectedness between China's financial sector and real estate sector*. International Review of Financial Analysis, novembre 2023

Savills Research, *Office, Guangzhou, February 2024*. Savills Research, février 2024, pg. 2

Shi, Shuping, et al. *Causal Change Detection in Possibly Integrated Systems: Revisiting the Money–Income Relationship*. Journal of Financial Econometrics, 8 février, 2019.

Wang, R., & Hou, J. *Land Finance, land attracting investment and housing price fluctuations in China*. International Review of Economics and Finance, 2021.

Wang, Liang, et al. *Synergistic evolution of resilience and efficiency in the real estate industry : evidence from 35 large and medium-sized cities in China*. Applied Economic Letters, 20 juillet, 2022.

Wei, Donglan, et al. *Housing Vacancy Rate in Major Cities in China: Perspectives from Nighttime Light Data*. Hindawi, 21 septembre, 2020.

Wu, J., *Incentives and outcomes : China's environmental policy*. Capitalism and Society, 9(1), 1-41, février, 2013.

Yilmaz, Kabil et Dielbold, Francis X. *Better to give than to receive: Predictive directional measurement of volatility spillovers*. International Journal of Forecasting, 2012.

Yilmaz, Kabil et Dielbold, Francis X. *On the network topology of variance decompositions: Measuring the connectedness of financial firms*. Journal of Econometrics, 2014.

Zhang, Rongjie, et al. *Land finance in China : Analysis and review*. China Economic Review, 26 septembre, 2022.

Zhang, Xinhua, et al. *Multilayer network analysis for measuring the inter-connectedness between the oil market and G20 stock markets*. Energy Economics, avril 2023.

Et al.

**Sources des données :**

Banque Mondiale

Bureau national des statistiques, Chine

Fonds Monétaire International - FMI

Institut des statistiques chinois (NBS)

JP Morgan : Guide à la Chine

KLEMS Europe

La Ministère de l'Économie, des Finances, et de la Souveraineté Industrielle et Numérique de la France

US Census Bureau

Office of the United States Trade Representative

Et al. comme indiqué dans le corps du texte



## Annexe

Variable	Formule
Connexion Totale (TC - Total Connectivity)	$TC = \frac{1}{N(N-1)} \sum_{i=1}^N \sum_{j=1, j \neq i}^N G_{ij}$
Efficacité Globale (GE - Global Efficiency)	$GE = \frac{1}{N(N-1)} \sum_{i=1}^N \sum_{j=1, j \neq i}^N \frac{1}{l_{ij}}$
Degré Moyen des Noeuds (AND - Average Node Degree)	$AND = \frac{1}{2N} \sum_{i=1}^N k_i$
Unicité Rapport de Bord (UER - Uniqueness Edge Ratio)	$UER^\alpha = \frac{1}{K^\alpha} \sum_{i=1}^N \sum_{j=1, j \neq i}^N G_{ij}^\alpha (1 - G_{ij}^\beta)$
Valeur à Risque Auto-régressive Conditionnelle (CAViaR - Conditional Autoregressive Value at Risk)	$CAViaR = VaR_{it}(\phi_{i0}) + \sum_{j=1}^q \phi_{ij} VaR_{it-j}(\phi_i) + \sum_{j=1}^r \phi_{i(q+j)} L(r_{it-j})$

## Glossaire

<b>Terme</b>	<b>Explication</b>
<b>Actif</b>	Un bien possédé
<b>Appréciation</b>	Augmentation de la valeur d'un actif
<b>Bulle Immobilière</b>	Une sur-évaluation de la valeur de l'immobilier qui existe dans une économie. Cela peut engendrer une baisse soudaine en prix.
<b>Économie de Marché</b>	Le marché contrôle la production et l'allocation des biens
<b>Économie Planifiée</b>	Le gouvernement contrôle la production et l'allocation des biens
<b>Financement du Foncier</b>	Le processus par lequel un gouvernement génère des revenus basés sur la terre.
<b>Garantie (d'une dette)</b>	Ce qui sert à assurer le remboursement d'une dette
<b>Obligation</b>	Titre de créance portant un intérêt déterminé et remboursable à une date déterminée
<b>Parité de Pouvoir d'Achat (Purchasing Power Parity - PPP)</b>	Une façon de modifier le pouvoir d'une devise en prenant en compte le coût de la vie dans le pays.
<b>PIB</b>	Produit Intérieur Brut - la valeur annuelle produite par un pays donné
<b>Service (de dette)</b>	Un montant payé (e.g. l'intérêt d'un prêt) régulièrement (normalement c'est mensuellement) pour pouvoir emprunter d'argent
<b>Subventionner (une entreprise)</b>	Soutenir une entreprise en leur fournissant des fonds, réductions, allègements fiscaux, etc. pour qu'elles puissent être plus rentables.
<b>Un défaut (d'une dette)</b>	Lorsque l'on ne peut pas rembourser ses prêteurs à l'heure (ou du tout)