



# Enlightenment of Real Estate Development in the United Kingdom for China Based on the Perspective of Low Carbon

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**Abstract.** In recent years, the Chinese real estate industry fluctuates dramatically. However, the UK's real estate industry and housing prices present an upward trend. Therefore, this paper discusses the Chinese real estate problems from the perspective of green and low carbon economy by drawing from the policies of the United Kingdom in the short run and long run. Real estate is supporting industry in China, this industry affects or promotes the rest of the industries in China. Hence, relieving decreasing property prices can stable the Chinese economy. This paper hopes to offer some references for the future researches in Chinese real estate.

**Keywords:** Real estate · Low carbon · China · United Kingdom

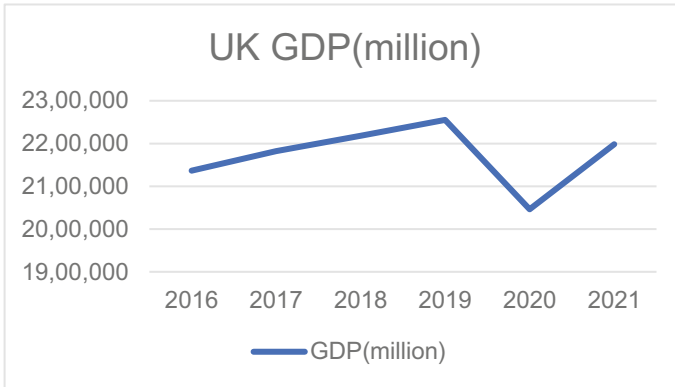
## 1 Introduction

Real estate plays an important role in the Chinese economy, whereas after the rapidly rising house price across the country, house prices start to drop in many cities, which present a very unstable and abnormal situation. Although the United Kingdom is a capitalist state, they choose different policies to control Covid-19, they still present an increasing trend in house prices. In this field, other studies show how covid-19 affects Chinese house prices, but they did not show other countries' policies and approaches to boost the demand for the real estate industry. In addition, the Chinese government pays attention to low carbon and green development. Therefore, this paper researches UK's real estate history and policies and their green and low carbon development in the real estate industry, also discusses the Chinese real estate problems from the perspective of green and low carbon economy, hoping to find effective policies that could be applied in the Chinese real estate industry under the view of low carbon.

## 2 Enlightenment of Real Estate Development in the United Kingdom for China

### 2.1 The History of Real Estate Development in the United Kingdom

The United Kingdom is one of the most developed countries in the world with advanced technology and the most perfect and fully functional financial service. Moreover, the



**Fig. 1.** UK GDP from 2016 to 2021[8]

real estate industry in the United Kingdom is well-developed, attracting many investors. It is mainly because the UK government implemented a reducing stamp duty land tax policy and set a relatively lower interest rate [1]. According to Schrodgers, from 1918 to 2001, the percentage of owner-occupiers in the United Kingdom experienced dramatic growth, from nearly 25% to 60%. After that, it fell by around 58% in 2019 [2]. Therefore, a growing number of people chose to purchase property in the United Kingdom, even after experiencing the financial crisis, Brexit, and the ongoing Covid-19.

When it comes to the history of real estate in the UK, the First World War is a starting point. After World War I, a considerable demand for housing arose, although there was an economic downturn. The UK government intervened in the housing market, which provided council houses, known as the “Addison Act” [3]. The UK government subsidised local authorities and built houses for rent. The time came after the Second World War; the United Kingdom had a severe shortage of homes because the war demolished thousands of buildings. Statistics showed that 750,000 new homes had to be reconstructed throughout England and Wales [5]. As claimed by UK Parliament, 1.1 million homes were built during these two periods [3]. In 1989, the house price plunged by 20% because of “overheating” and was accompanied by some investors buying the houses before the government removed the tax relief from couples [6, 7]. After that, house prices started to go up, and were back to their original level. 2018, the financial crisis swept the world, and it seriously affected the UK’s economy, and the house price witnessed a downward trend. The average house price decreased from £184,000 to £150,000 within a half years (late 2007–early 2009). Until 2014, the house price gradually raised to the original level. The UK government introduced a series of policies and schemes to sustain and recover the house price, such as “HomeBuy Direct”, “Mortgage Rescue Scheme”, and “Homeowners Mortgage Support”. Furthermore, Brexit is a critical point for the British economy. The “Office for National Statistics” showed that, after Brexit Referendum, the GDP still presented an upward trend; during 2019 and 2020, UK GDP suddenly declined and then grew again [8] (Fig. 1).

Brexit did not affect UK housing prices too much; according to ONS, the UK average house price increased from £205,464 to £274,712 from January 2016 to December 2021 [9]. It displayed an upward trend, even though housing prices had some fluctuations.

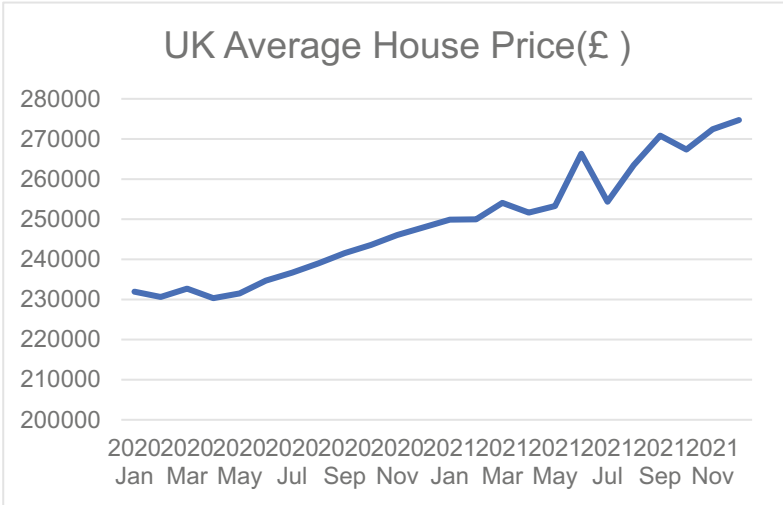
Following the Covid-19 outbreak in the UK, the government introduced different approaches to control the outbreak; for example, they adopted the self-isolation rules, which forced people who tested positive have to self-isolate in the home for ten days [11]. Although the number of people who tested positive rose significantly, house prices did not decrease. The BBC announced that the property value in 2021 was more significant than that of 2020, around 10.2%, and it is the fastest growth rate in the past 14 years [10].

Overall, the UK government's policy or approaches helped them pass irregular periods, and until now, house price is still rising.

## 2.2 Experience and Cost of Real Estate Development in the United Kingdom

The UK real estate market is a nearly complete and stable market, because of policies implemented by the UK government. They made relatively correct choices during some special periods, such as the financial crisis and the epidemic, against the economic downturn. Firstly, in order to boost falling house prices caused by the 2008 Financial Crisis, the New Labour government tried to rescue collapsing housing prices by redistributing 1 billion pounds to the real estate industry. They implemented the "HomeBuy Direct" policy, which targeted people who purchased the property for the first time. The buyers could apply for a 30% property value loan, but they had to buy the newly developed building, and their income must be below £60 000 [6]. Over the same period, the UK government also introduced Mortgage Rescue Scheme (MRS) and Homeowners Mortgage Support (HMS). MRS helped people who cannot afford their monthly house payments, and the property cannot be sold. MRS could help them to reduce their monthly house payments. If the government classified these payments are unsustainable, the housing association should buy the property and rent it back to the owner of the property at 30% market renting price, within 3 years. MRS accepted around 6,000 borrowers [6]. Furthermore, the financial crisis also causes rising unemployment and declining income, at this time, the whole mortgage was unaffordable for some people. The bank gave grace to them, and the government pay 80% losses to the bank. HMS directly benefited 42,000 homeowners. These interventions by the New Labour government were mainly by investing or redistributing the government funding to prevent housing prices from decreasing [6].

Secondly, the UK government introduced the HTB was in England in April 2013, followed by the Welsh and Scottish. There are two main rules for borrowers: First, they could apply for an equity loan, and the total value of this loan could be 20% of the property value; second, borrowers could apply for a loan that is 40% of the property value, however, this property must be belonged to Greater London Authority (GLA) and restricted as a new building. HTB encouraged people to borrow or apply for loans, and boost the demand for housing. There is another version of the HTB equity loan, the total price for the house must be below £600,000 within a newly developed building, and this version is aimed at first buyers and people who want to replace their home. The maximum mortgage could reach 20% of the house price. After launching HTB, there



**Fig. 2.** UK Average House Price from January 2020 to December 2021

were over 195,000 properties, whose total value was 49.9 billion pounds within five years. In addition, the full value of the applied loan is 10.7 billion pounds [12].

However, this scheme has some constraints. Firstly, the scheme pushed up house prices as the demand for houses increased. Followed by this, the cost of purchasing a home is higher than before, and it is greater than the cost of building the house. Hence, the final winners are the builders and landowners who attended the HTB scheme. Secondly, as the price of house increases, the market value also increases. If the homeowners choose to sell, they must pay back the government as the market value; this is a financial burden for homeowners [12].

Thirdly, Stamp Duty Land Tax is a tax paid by people who purchased a residential property or land over £250,000 [13]. On July 8, 2020, the UK government introduced the reduced rates of SDLT to buyers from July 8, 2020 to June 30, 2021, from July 1, 2021 to September 30, 2021, still could enjoy this favorable policy [14]. The UK government aimed to avoid possible falling house prices caused by COVID-19. Buyers who purchased a property less than £500,000 did not pay SDLT during this period [15]. According to ONS (Fig. 2), the UK average house price increased from £236,687 in July 2020 to £263,321 in June 2021 and finally increased to £270,823 in September 2021 [9].

Therefore, the reduced SDLT effectively boosts the house price because it attracts lots of investors.

The last one is According to COLUMBIA THREADNEEDLE Investments, the carbon emitted by the building in the UK accounts for 40% of total carbon emissions [16]. UK Green Building Council (UKGBC) published a framework about how the building achieves net zero. UKGBC divides buildings into two types: construction and operational energy. “Construction” means new or refurbishing and renovating buildings, and “operation energy” means buildings in operation. The final target is “Net zero carbon-whole life”. Moreover, this framework also describes how to reduce carbon emissions

during construction and operation, improve renewable energy supply, and eliminate the rest of the carbon emissions [17]. Pursuing low-carbon or net-zero carbon is beneficial for the future sustainable development of the real estate industry.

### **2.3 The Status and Existing Problems of Chinese Real Estate**

Real estate and its related industries contributed 25%-30% of GDP in China, and the loans which belong to real estate stand at 27% of loans issued by Chinese banks. Therefore, real estate is a pillar industry of the Chinese economy [18]. However, the Chinese real estate industry faced serious challenges; according to CaiXin Global, in 2021, the Top 100 real estate developers' total sales revenues were down by 36.7% compared with last year's. According to CRIC, the total monthly sales revenue of the top 100 Chinese real estate developers displayed a fluctuating but overall downward trend in 2021 [19]. Due to the bankruptcy of some Chinese real estate developer, which holds large-scale assets, consumers lose confidence in these developers; they choose not to invest in the property. For example, a Chinese property developer is facing more than 2 trillion yuan in debt.

Additionally, the spread of Covid-19 leads to an economic downturn in China; people choose to save money rather than consume, leading to falling house prices. Seven cities in 2021 introduced policies that limit the falling house prices; this policy prohibits house prices from continuing to fall or having large price fluctuations [19]. Especially in some cities that experienced a serious Covid-19 epidemic and a high rate of infection, house prices are continuously falling and unstable [20]. The government adopts the policy that blocks the community, street, district, or city, that has positive patients. Therefore, the local income will be affected to some extent, and demand for property will decrease.

Although the Chinese real estate industry performed a downward trend because of Covid-19 and the debt of property developers, sustainable and green development of the real estate, such as low carbon, could help this industry and China to develop healthily. The government has already set the goal: China will achieve Peak Carbon in 2030 and Carbon Neutrality in 2060. According to China Jianyin Investment Limited, the real estate industry accounts for 70% of energy-saving and emission reduction potential in China [21, 22]. The government designed to achieve Peak Carbon and Carbon Neutrality in 3 steps: the first step is reducing carbon emissions in the process of construction, the second step is reducing carbon emissions in the process of operation and maintenance, the last step is improving the buildings with the high level of carbon emission. This policy and target could help the Chinese real estate industry becomes more stable in the future and use New Concept to push real estate into a product-oriented market [21].

### **2.4 Advice for the Development of Chinese Real Estate**

Due to the superior performance of UK real estate, there are some enlightenments for China to turn things around. Firstly, the government should give more discounts to first home buyers. At present, the Chinese government regulates that if first-time buyers purchase a property under 90 square meters, then they could enjoy a 1% deed tax rate. Moreover, they could apply for a mortgage loan with a relatively larger amount, and the down payment is relatively small [23]. To push up the declined demand, the government could reduce the sub-fraction of tax payments within the specific period. What's more,

the government could implement different policies to help young people or first-time buyers to purchase properties from selected property developers, and these developers must satisfy “Three Red Line” policy.

Secondly, in the long run, green development could bring the real estate industry to a higher level. The UK has already adopted some low-carbon techniques in the process of construction, for example, QLCWT and SRRCB technology. QLCWT is used to make low-carbon and environmentally friendly walls, and SRRCB is a kind of regenerative building material [24]. The Chinese property developers also could use some advanced and low-carbon technologies or materials to reduce the carbon emissions from the process of construction.

### 3 Conclusion

Due to the bankruptcy of Chinese real estate developers and Covid-19, Chinese house prices in most cities dropped dramatically, and the whole real estate market is choppy. The aim of this research is to find the reasons that the UK real estate industry performed well in recent years, such as HTB policy, reduction of Stump Duty Land Tax, and the Chinese government could learn from these experiences and policies, then formulating policies which are beneficial for China, to improve the declined real estate industry in the short run. Chinese government could implement policies to boost consumption, for example, lowering the interest rate. Additionally, the Chinese government could implement some policies and regulations, such as enjoying lower interest rates and fewer loans when purchasing properties, but these are targeted to specific buyers, such as people who started to work. In the long run, the Chinese government could learn and develop some technologies to achieve Peak Carbon and Carbon neutrality. This paper has several limitations, including the feasibility of the technology, and different country situations, and this study need more empirical studies to test and support. In the future, the author would like to discuss deeply the green and sustainable development of real estate industry.

### References

1. RealVantage, Investing in the UK Real Estate Market, 2021, <https://www.realvantage.co/insights/investing-in-the-uk-real-estate-market/#overview-of-uk-real-estate-market>.
2. D. Lamont, What 175 years of data tell us about house price affordability in the UK, 2021, <https://www.schroders.com/en/uk/adviser/insights/markets/what-174-years-of-data-tell-us-about-house-price-affordability-in-the-uk/>.
3. UK Parliament, “Council Housing”, 2022, <https://www.parliament.uk/about/living-heritage/transformingsociety/towncountry/towns/overview/councilhousing/>.
4. T. Pettinger, History of UK housing, 2018, <https://www.economicshelp.org/blog/15814/housing/uk-housing-history/>.
5. University of the West of England, 5 Meeting the Post-war Housing Shortage, 2008, [https://fet.uwe.ac.uk/conweb/house\\_ages/council\\_housing/section5.htm](https://fet.uwe.ac.uk/conweb/house_ages/council_housing/section5.htm).
6. D. Dorlig, House price: should we welcome a crash?, 2021, <https://ukandeu.ac.uk/long-read/house-prices-crash/>.

7. Sunlife, History of house prices in Britain, 2021, <https://www.sunlife.co.uk/articles-guides/your-money/the-price-of-a-home-in-britain-then-and-now/>.
8. Office for National Statistics, Gross Domestic Product: chained volume measures: Seasonally adjusted £m, 2022, <https://www.ons.gov.uk/economy/grossdomesticproductgdp/timeseries/abmi/qna>.
9. Office for National Statistic, UK House price index: December 2021, 2021, <https://www.ons.gov.uk/economy/inflationandpriceindices/bulletins/housepriceindex/december2021>.
10. K. Peachey & D. Palumbo, Why house prices are rising so fast in a pandemic, 2021, <https://www.bbc.co.uk/news/business-57260261>.
11. J. Sargeant & A. Nice, Coronavirus lockdown rules in each part of the UK, 2022, <https://www.instituteforgovernment.org.uk/explainers/coronavirus-lockdown-rules-four-nations-uk>.
12. Felipe Carozzi, Christian Hilber & X.Yu, ON THE ECONOMIC IMPACTS OF MORTGAGE CREDIT EXPANSION POLICIES: EVIDENCE FROM HELP TO BUY [J] CEPR Discussion paper, 2020, pp. 23-24.
13. Propertymark, Stamp Duty and Land Tax, 2022, <https://www.propertymark.co.uk/professional-standards/consumer-guides/buying-selling-houses/stamp-duty-land-tax.html>.
14. GOV.UK, Stamp Duty Land Tax: temporary reduced rates, 2020, <https://www.gov.uk/guidance/stamp-duty-land-tax-temporary-reduced-rates>.
15. D. Evans, Stamp duty holiday explained, 2021, <https://www.comparethemarket.com/mortgages/content/stamp-duty-holidays/>.
16. N. Buckland & J. Coke, Committing to zero carbon real estate, 2021, <https://www.columbiathreadneedle.co.uk/en/inst/insights/committing-to-zero-carbon-real-estate/>.
17. UK GBC, Net Zero Carbon Buildings: A Framework Definition, 2019, <https://ukgbc.s3.eu-west-2.amazonaws.com/wp-content/uploads/2019/04/05150856/Net-Zero-Carbon-Buildings-A-framework-definition.pdf>.
18. T. Huang, China's looming property crisis threatens economic stability, 2022, <https://www.piie.com/blogs/realtime-economic-issues-watch/chinas-looming-property-crisis-threatens-economic-stability>.
19. Summary and Prospect of China's real estate industry in the third quarter of 2021, 2021, [https://mp.weixin.qq.com/s/sA\\_oC6kV9DXMITtamstDeg](https://mp.weixin.qq.com/s/sA_oC6kV9DXMITtamstDeg).
20. X. Qian, S. Qiu & G. Zhang, The impact of COVID-19 on housing price: Evidence from China [J] Elsevier Public Health Emergency Collection, 2021.
21. CIC Group, A factor changing the development mode of China's real estate, 2022, <http://news.10jqka.com.cn/20220321/c637661777.shtml>.
22. B. Li, How China Plans to Achieve Carbon Peak and Carbon Neutrality, 2021, <https://earth.org/china-carbon-peak-carbon-neutrality/>.
23. Barbie Finance, Preferential policies for first house loan (preferential policies for first property loan 2021), 2021, <https://www.517712.com/qyjydk/22213.html>.
24. Z. Wang (translator), Development trend of low carbon technology in the British real estate industry [J] China Academic Journal Electronic Publishing House, 2021, pp. 3.

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