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Evaluating the Influence of Purchase Restriction Policies on Resource Consumption and Sustainable Development in Hainan

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Abstract

The paper aims to find out how changes in climate change affect how people think and feel. This paper analyzes 1456 papers published This study uses a Systematic Literature Review (SLR) to demonstrate the impact of purchase restriction policy on resource consumption and sustainable development. The study provides insights in the context of Hainan. It was found that uncontrolled real estate expansion causes significant constraint on resources. In this regard, the purchase restriction policies are a feasible policy perspective to mitigate the adverse consequences. Limiting or perhaps controlling real estate expansion is crucial for limiting land use, water consumption, and promoting energy efficiency. There is also a critical point of real estate expansion post which the total energy efficiency reduces. It is imperative to consider these and limit such development. This study also highlights significant gap in literature which ought to be filled. It suggests policy implications which will ensure proper resource consumption and sustainable development in the long run.

Keywords: *Purchase Restriction Policy, Hainan, Real Estate, Resource Consumption, Sustainable Development.*

Introduction

Hainan has emerged as a region crucial for China's experiments regarding economic and environmental policies. It came into existence in 1988 with the aim of becoming a Special Economic Zone (SEZ) (Cadario et al., 2010). Although this region remained in the shackles of extreme poverty, had inadequate infrastructure, and was generally backward, it managed to make economic progress by attracting investment. Investments came from domestic as well as international sources. However, Cadario et al. (2010) states that by 1989 until late 1991, Hainan's journey to become the leader in terms of experiments in agricultural, industry, and human resource development, slowed down. This continued until 2020 when Chinese authorities released the Overall Plan for the Construction of Hainan Free Trade Port (FTP) (Interesse, 2022). In this context, the purchase restriction policies were imposed. According to Wang et al. (2024), the purchase restriction policies manifest via the housing market. They affect China's real estate supply but do not directly alter land transfer prices. Such policies are usually designed to regulate the acquisition of property and curb speculative investment. It reflects a broader effort to ensure that development aligns with sustainability goals in the face of environmental and social pressures.

Sustainable development underscores equitable and efficient allocation of resources. It emphasizes the need for a non-decreasing quality of life (Asheim, 1994). It mandates maintaining a balanced consumption of resources. However, in resource intensive sectors such as real estate, this balance is cumbersome to maintain. Yang (2024) suggested that purchase restrictions hinder investment and consumption in the short run, however, they guarantee market stability and industrial optimization in the long run. It also has a nuanced impact on employment as it facilitates mobility of labor toward high-tech and service-oriented industries but constraints employment in real estate. Moreover, Wu et al. (2020) posit that post the 2003 real estate policy shock in China, resource misallocation across industries increased. Therefore, on one hand these industries increase a region's GDP, on the other, it placed immense pressure on the region's natural resources and foster misallocation. The purchase restriction policies are aimed at tackling these unsustainable practices while simultaneously promoting long-term stability.

This study will utilize a Systematic Literature Review (SLR) approach to evaluate the influence on purchase restriction policies on resource consumption and sustainable development in Hainan. It will examine the

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interplay between these policies and real estate sector. The aim will be to determine whether such interventions are able to redirect the province toward sustainable development. The analysis will explore whether such policies have limited resource-intensive projects or whether they have inadvertently exacerbated other issues. The latter may include housing shortages or increased inequality. For this purpose, the study has been divided into the following sections: Literature Review, Methodology, Findings, Discussion, and Conclusion. The study is expected to provide insights into the effectiveness of purchase restrictions in terms of key challenges that include resource conservation, environmental protection, and equitable development.

Literature Review

Real Estate Development and Resource Consumption

Real Estate is a critical driver of economic growth. In fact, the real estate market worldwide is expected to reach a value of us $634.90 trillion by 2024 (Statista, 2024). The growth in the world real estate sector has been shown in Figure 1. It is expected to rise even further with projections reaching US$727.80 trillion by 2029 as shown in Figure 1 (Statista, 2024). Additionally, the share of residential real estates is significantly more commercial ones.

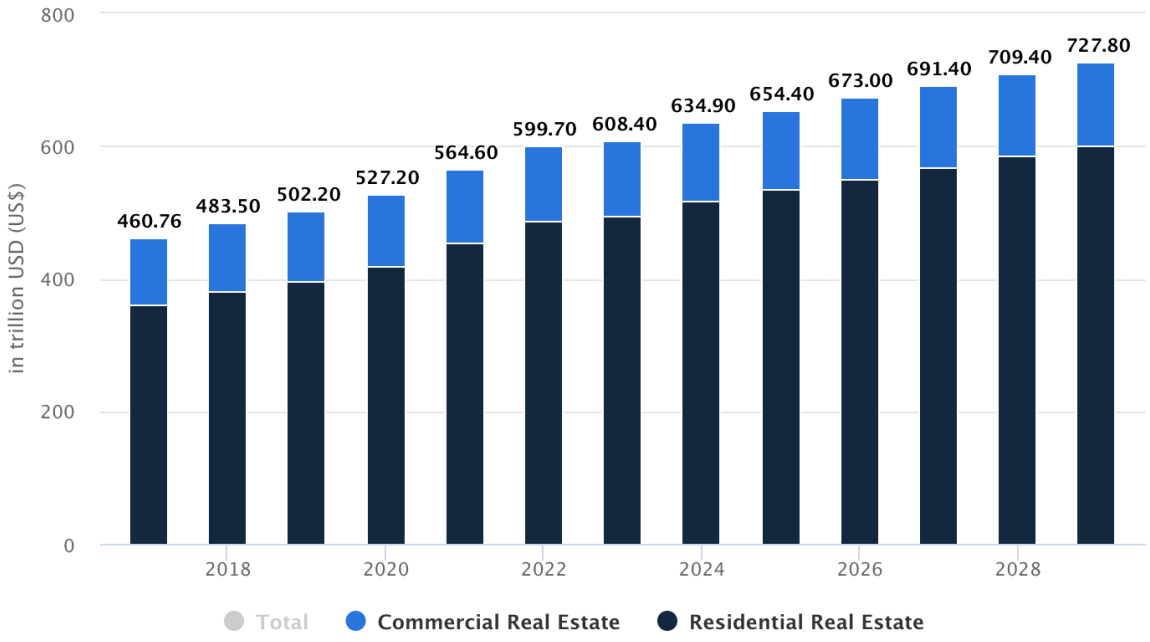

Figure 1. Worldwide Real Estate Market Value (Statista, 2024)

Although this industry drives in economic growth, its contribution to resource consumption is also substantial. Supply without demand constitutes a significant waste of resources as inferred by Meng and Bu (2024) with the help of a two stage DEA model. They also found that increasing per capital residential building area and leveraging demand for improved living conditions are powerful indicators of efficient production. This approach is essential for sustainable development of the real estate sector.

In the context of China, as of 2022, the area of real estate used for development enterprises was 9,049.99 million square meters, with 6.396.96 million square meters for residential construction and 1205.87 million square meters of land entailed newly started construction projects (National Bureau of Statistics China, 2023). Thus, real estate uses a considerable amount of land available in the nation. Additionally, real estate also influences energy efficiency. Chen et al. (2019) analyzed provincial level panel data from 2004-2012 to

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find that real estate investment does improve total factor energy efficiency in most Chinese provinces. However, the cases of Beijing, Shanghai, Hainan, and Zhejiang posit exceptions to those results. Additionally, Li et al. (2018) found that energy demand alongside CO_2 emissions is expected to peak in 2030 with 3.9 Gtce of total final energy consumption. Chinese per capital electricity consumption will likely increase to 1100 kWh in 2030 and 2000 kWh in 2050, which likely constitutes a major proportion of the total final energy consumption. Another resource that is increasingly depleted due to real estate expansion is water. Yan et al. (2023) predicted that China's total water consumption by the year 2030 is expected to be 552.9 billion m^3 with 95.7 million m^3 used for domestic consumption and 95.7 million m^3 for industrial purpose. The latter also includes the real estate industry. Thus, these figures capture the extensive utilization of resources in the face of real estate. Unplanned expansion may be detrimental for households and environment alike (Correia et al., 2024). It inculcates deforestation, loss of arable land, and increased carbon emissions. As Hainan has limited land resources, the corresponding ecological sensitivity is expected to amplify these challenges. This mandates the need for sustainable management of the real estate sector. Therefore, purchase restriction policies might be able to limit real estate expansion by controlling speculative investment. This will align with the broader societal and environmental goals.

Purchase Restriction Policies: Objectives and Outcomes

Purchase restriction policies are primarily aimed at regulating the property market. Zheng et al. (2023) states that Housing Policy Restrictions (HPR) in China imposes administrative restrictions on home purchase eligibility. The main aim of these policies is to curb speculative demand and prioritize housing availability for the locals. However, in Langfang city which lies at proximity to Beijing, HPR increased housing prices by 8.07% within 500 meters of the buffer zone, which continued up to 1000 meters where prices rose by 6.70% (Li et al., 2020). However, beyond the buffer, the prices decreased. Instance such as these raise questions regarding the effectiveness of these policies. Moreover, if adjacent cities implement restriction policies, the prices of local houses will increase thereby causing a ripple effect on housing prices (Zhang et al., 2021). However, barring these exceptional cases, the general aim of this policy is to reduce speculative investment and control the soaring housing prices in the corresponding nation. In this context, Kuang et al. (2020) employed a dataset consisting of 1830 listed non-real estate firms to explore the impact of expected purchase restriction on corporate innovation. They found that these policies facilitate innovation across non-real estate firms by hindering investment in the real estate sector. This by default reduces pressure on resource consumption and takes an initiative toward sustainable development.

Methodology

This study employs a Systematic Literature Review (SLR) approach evaluate the influence of purchase restriction policies on resource consumption and sustainable development. The SLR approach allows a structured and comprehensive analysis of existing research. It enables scholars to collect relevant evidence for their topic such that it fits the pre-specified eligibility criteria (Mengist et al., 2020). This ensures that the findings are grounded in a robust synthesis of peer reviewed literature. The SLR approach has been chosen due to its systematic and replicable approach. It reviews and synthesizes existing knowledge. This being said, the goal of this study is to identify patterns, gaps, and best practices in the real estate sector. The study provides a nuanced understanding of the effectiveness and limitations of these policies in the context of Hainan.

Data Collection Process

The source used for collecting articles for this study was Google Scholar. The search strategy included a combination of key words that were used to identify the relevant studies. The search terms have been stated as follows:

- Purchase restriction policies
- Housing Purchase Restrictions

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- Real Estate China
- Resource Consumption
- Sustainable Development
- Hainan Real Estate Market

Boolean operator AND was used to combine the above search terms such that refined results were obtained.

The studies that were included in the analysis were all published between 2010 to 2024. This ensured that only those articles which captured recent developments and policy impacts, were included in the analysis. Older seminal work was considered however, this was limited to theoretical context only. Additionally, the study only includes literature that are written in English. Furthermore, all sources were evaluated for credibility. The focus was particularly on peer-reviewed articles and government/organizational reports available on Google Scholar.

Inclusion Criteria

- Studies that explicitly analyze purchase restriction policies.
- Research focused on the real estate sector, particularly in Hainan or similar regions.
- Literature addressing resource consumption and sustainable development.
- Studies providing empirical evidence or well-substantiated theoretical analysis.

Exclusion Criteria

- Studies focusing solely on unrelated sectors.
- Articles with insufficient methodological rigor or lack of transparency in data sources.
- Literature discussing general economic policies without specific reference to real estate or purchase restrictions.

Once the data was collected, it was grouped into themes such as effectiveness of purchase restrictions policies, resource conservation impacts, unintended consequences, and lessons from other comparable regions. Each source was critically evaluated to demonstrate its contribution to understand the relationship between purchase restriction policies, resource consumption, and sustainable development. This also included careful evaluation of the quality of evidence, research design, and whether the study was relevant to the context of Hainan. Additionally, the analysis also identified gaps in existing literature. This was particularly in the context of understanding long-tern impacts of the purchase restriction policies on resource allocation and sustainable development.

The combination of search terms used along with the number of results found and the number of studies shortlisted are given in Table 1.

Key Words	**Total Results**	**No. of Articles Chosen**
Purchase restriction policy AND resource consumption AND China	17,800	3

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Purchase restriction policy OR housing purchase restriction AND resource consumption and China	18,000	6
Purchase restriction policy OR housing purchase restriction AND sustainable development AND Hainan Real Estate	14,800	4

Note that the study adheres to the ethical practices. It ensures proper citation of all sources and maintain transparency in the research process. Furthermore, extra care is taken to avoid any bias in selection and interpretation of literature.

Findings

Consider Table 2 which captures the shortlisted studies and their inferences to discuss the findings of this study. 13 studied survived the screening and were included in the list of short-listed studies that examined the impact of the corresponding policy on resource consumption and sustainable development. From the analysis, it was found that the impact of purchase restriction policy on land and housing prices was quite pronounced. However, it varied across regions and tiers of cities. Wang et al. (2024) found that there is a statistically significant impact of the policy on land sales. This impact was primarily negative with land prices increasing in first-tier cities and decreasing in second and third-tier ones. Wu and Li (2017) also found similar results as they witnessed housing prices reducing across first and second-tier cities. The impact of reduced prices is higher in cities that have historically recorded higher prices. On the other hand, Zhang et al. (2021) underscored a strong spillover effect. There was a 10.3% increase in residential land prices in across neighboring cities. This was driven by speculative demand that was redirected to these regions after the purchasing restriction policies were announced. These findings demonstrate that restriction policies such as the HPR, effectively cool down targeted markets. However, the spillover effects may inadvertently contribute to increased pressure on resources across surrounding areas. These may further complicate the formulation of strategies that encompass allocation of resources.

Additionally, the impact of purchase restrictions extends beyond the housing market at times when they affect resource allocation and productivity. Liu et al. (2023) revealed that HPR policies did improve total factor productivity. They reduced capital misallocation within the treatment cities which basically were the ones where the policies were implemented. This was achieved by reallocating band credit from speculative housing loans toward industrial uses. This benefitted the credit-constrained firms. Furthermore, Wu et al. (2020) also emphasized on the real estate booms. These often lead to misallocation of resources and cause their dispersion. This hinder firm productivity which suggests that HPR policies may potentially mitigate these inefficiencies as they will end up curbing speculative investments. These findings collectively underscore the role of housing policies in promoting sustainable economic productivity. They help in aligning resource use with productive sectors instead of allocating them to speculative activities.

Housing Purchase Restrictions also affect environmental outcomes and urban development patterns. Chen et al. (2019) demonstrate that real estate development improves energy efficiency initially. This happens up to a certain level beyond which inefficiencies start emerging. The result is thus an inverted-U shaped curve at shown in Figure 2. This raises the need for a controlled expansion of the real estate. It is crucial to align the objectives of the HPR policies such that it limits an unsustainable urban sprawl. In addition to this, Weng et al (2021) analyzed changes in green space challenge across urban areas. They attributed the significant losses in green spaces to socio-economic factors such as population growth and urbanization.

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Therefore, as strict environmental policies that were introduced post-2015 mitigate green space loss, regulatory interventions that balance expansion with ecological preservation become important.

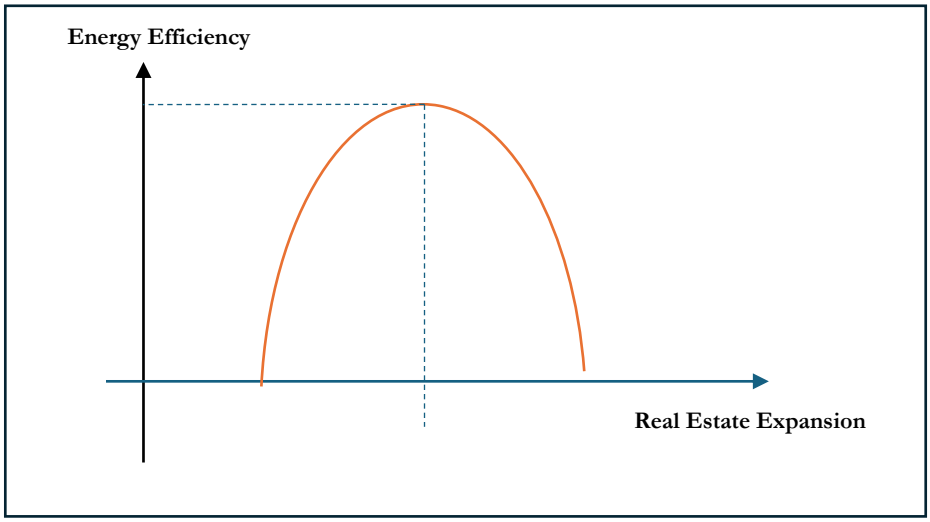

Figure 2: Inverted-U Shaped relationship Between Real Estate Expansion and Energy Efficiency

[Created by author based on findings from Chen et al. (2019)]

A critical challenged posited by HPR policies encompass their spillover effects. These create regional disparities across housing markets and resource pressures. Wu et al. (2023) identified these spillover effects. They inferred that housing prices increase across neighboring cities especially the ones with low-risk markets. As an extension to this, Zheng et al. (2021) found that speculative demand redirects from regulated cities to the unregulated ones. These cause an increase in house prices across the latter regions that creates an uneven regional resource utilization. These findings thus highlight the significance of designing policies that account for the inter-city dynamics. This will ensure that there is equitable and sustainable resource allocation across regions. This development was further supported by Zou et al. (2021) that suggests that HPR policy adoption is often driven by administrative pressures instead of local economic needs. These raise concerns regarding the long-term sustainability. This further reiterates the need for more tailored approaches that are context-specific such that the policies can effectively address local challenges and also promote sustainable development. Another significant finding from the study was from Kang et al. (2024). They capture the interaction between environmental factors and housing market. The authors demonstrated the need for sustainable housing prices. Extreme heat negative impacts housing prices. This reduces demand, labor inflows, and long-term residency intensions across the regions affected by heat. These findings thus align with the increased need to necessitate policies that address environmental risks besides integrating climate resilience into urban planning. This will ensure sustainable development across regions such as Hainan that are quite vulnerable to climate change.

Table 2. Shortlisted Studies and their Findings

Name of Author(s)	Objective	Methodology	Findings	Relevancy

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Wang et al. (2024).	To analyze the impact of purchase restriction policy on residential land supply	Panel of 273 cities from 2004 to 2018	Statistically significant negative impact of the policy on land sales. However, the impact on land price is positive across first-tier cities and decreases across second and third-tier ones. The effect weakens across central and western China.	Captures the impact of purchase restrictions on land as a resource.
Fang et al. (2016)	To examine housing price trends, financial burden on households, and systemic factors that shape the real estate market. Additionally, to assess if the Chinese housing market boom has similar characteristics to the US housing bubble burst	Constructed housing price indexes across 120 cities in China from 2003 to 2013. Combined a hedonic regression and repeated sales method.	Housing price in first tier cities increased by 13.1% annually whereas third-tier cities experience slightly slower growth that averaged 10.5% to 7.9% respectively. Low-income households faced significant financial burdens on participating in the housing market. Additionally, land supply was tightly controlled by the government and housing was treated as a financial investment vehicle.	Land supply is controlled by the government and it directly influences housing prices, Thus, strategic policies on allocation of land may impact resource use. Moreover, rapid urban expansion also increases demand for construction material and urban infrastructure that ties housing market to resource consumption.
Wu et al. (2020)	To examine how real estate boom impacts resource misallocation	Fixed effects model	Industries linked to real estate experience more dispersion in firm productivity and resource allocation	It mentions real estate boom and how this might correlate with resource consumption. This further encapsulates an inference regarding the impact of purchase restriction on resource consumption and allocation
Meng and Bu (2024)	To examine resource utilization in different phases of real estate development	Data Envelopment Analysis (DEA)	The real estate development needs to be fixed based on market demand as uncontrolled expansion might lead to production inefficiencies.	The purchase restriction policies are aimed at controlling expansion of real estate such that resources are not strained.

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Chen et al. (2019)	To examine the impact of real estate investment on Total-factor Energy Efficiency (TEEE)	Provincial level panel data analysis with data spanning from 2004 to 2012	Real estate development up to a certain extent will facilitate economic development and energy efficiency across developing nations. TEEE follows a inverted-U shaped path thus demanding controlled expansion. Except in Beijing, Hainan, and Zhejiang, improving real estate does improve TEEE	This study captures the impact of real estate expansion on energy efficiency. It indirectly analyzes the controlling effect of purchase restrictions on increasing TEEE
Zou et al. (2021)	To examine factors that affect the adoption and duration of HPR across Chinese cities.	A logit model was used to analyze factors that drive cities to adopt HPR. Additionally, an OLS model was used to examine determinants of policy duration among cities. Data was taken from 268 prefecture-level cities between April 2010 to December 2018.	Policy adoption was driven by peer-pressure and top-down pressure. Cities with higher housing prices maintained the policy for longer. The HPR policy is thus shaped by hierarchical administrative structures and not city-specific economic needs. This raises concerns about sustainability and appropriateness of the policy in meeting local housing and economic challenges.	The insights regarding the factors that affect adoption of the policy demonstrates the need for reforms to control expansion. The study also contextualized whether HPR is likely to produce long-term effects that coincides with resource allocation and sustainable practices.
Wu and Li (2017)	To examine the impact os HPR 2010 on Chinese real estate market in terms of housing prices, transaction volumes, housing investment, construction activities, and related upstream and downstream activities	Quasi-Natural Experiment approach with a DiD model to leverage variations across 97 cities from January 2010 to December 2014	Housing prices reduced in first and second-tier cities with the largest effects observed across cities with historically high housing prices. The policy did not effectively curb speculative demand. The upstream industries such as construction showed minimal change.	Inference in terms of the potential role of HPR on resource-intensive construction projects can be drawn.

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Zheng et al. (2021)	To investigate the spatial spillover effects of Home Purchase Restriction (HPR) policies on residential land prices in unregulated neighboring cities in China.	Difference-in-Difference and Triple Difference (DDD) approach	HPR leads to a 10.3% increase in residential land prices in unregulated neighboring cities due to strong spillover effects. Effects differ across regions and land types that reveals spatial heterogeneity.	The findings highlight the importance of considering inter-city spillover effects in policy design, which is directly applicable to your research on sustainable development in Hainan.
Wu et al. (2023)	To examine the spillover effects of home-purchase limit policies on housing prices across 35 large and medium-sized Chinese cities	Spatial Durbin model (SDM) is used to analyze panel data from 2010 to 2019	Positive spillover in neighboring cities with increased housing prices. Spillovers vary by city type where high-risk cities have insignificant spillovers, medium-risk ones have negative spillovers, and low-risk cities have positive spillovers. These are influenced by GDP growth, population, and housing market risks.	This study provides key insights into how housing purchase restrictions can create regional disparities and resource reallocation through spillover effects, aligning with the research focus on sustainable development and resource consumption in Hainan's real estate sector
Kang et al. (2024)	To evaluate the relationship between extreme heat and housing prices	Panel data analysis of housing prices in Chinese cities from 2009 to 2019	Negative correlation between housing prices and extreme heat. If temperature increased by 35 degrees, housing prices reduced by 0.1%. Decline in labor flow into cities, reduced home buying, and higher living costs.	The findings on reduced labor inflows, migration shifts, and firm activity in heat-affected cities parallel how purchase restrictions influence real estate dynamics in Hainan.
Liu et al. (2023)	To analyze how China's home purchase restriction (HPR) policy impacts the allocation of credit, firm-level productivity, and capital misallocation in treated cities.	DiD model that uses a natural experiment created by HPR across 46 cities between 2006 and 2013	he policy decreased the dispersion of marginal revenue product of capital (MRPK) within cities, enhancing allocative efficiency.	This study highlights how housing purchase restrictions can influence resource allocation and productivity in non-housing sectors.

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Feng et al. (2024)	To analyze the capitalization effects of newly constructed urban parks on housing prices in Hangzhou, China.	The study uses a hedonic pricing model that is combined with a DiD estimator.	Housing prices within 1.2 km of urban parks increased by 8.81%, with larger and comprehensive parks having the most significant positive effects. Comprehensive parks increased housing prices by 9.5%, while community parks and theme parks had minimal impact. Larger parks led to an 8.48% rise in nearby housing prices, compared to a 1.76% increase for medium parks. The results highlight the diverse socioeconomic and environmental benefits of larger, multifunctional parks.	This study informs your research by illustrating how urban policies and infrastructure (like parks) influence real estate dynamics, resource allocation, and urban sustainability. It emphasizes the role of tailored urban planning to balance economic growth and equitable resource distribution, a key aspect of sustainable development in Hainan's real estate sector.
Weng et al. (2021)	To analyze the spatial-temporal changes in green space across coastal cities in Southeast China over 20 years (2000–2020) and identify the contributions of socio-economic and geographical factors driving these changes.	A supervised classification method using Landsat TM/OLI imagery and landscape pattern indices.	Green space decreased by only 1% over 20 years, with spatial changes concentrated in southern and coastal areas. Socio-economic factors (53–61% contribution) had a greater impact on green space changes than geographical factors (39–41%). Population and urbanization drove the fragmentation of green space until 2015, after which stricter environmental policies mitigated further fragmentation and encouraged restoration.	This study underscores the importance of urban policies and socio-economic factors in managing green space and resource distribution, providing insights into the ecological management of urban expansion

Discussion

Impact of HPR on Resource Consumption

HPR policies significantly impact land sales and prices. Wang et al (2024) and Zheng et al. (2021) confirm this. Thus, these policies are able to reduce speculative demand across targeted cities. However, they impact unregulated areas adversely. On one hand, speculative demand reduces across targeted cities, on the other, it prices of land increase in the neighboring areas. This encompasses a spillover effect that highlights a reallocation of resource consumption. There is not outright reduction in resource consumption due to the purchase restriction policies. Therefore, concerns regarding overall resource efficiency arises. In the context of Hainan, this may cause a local limitation in projects that tend to be resource intensive. However, it may inadvertently shift these projects to neighboring regions that undermines the sustainability nature of regional development. Similarly, Liu et al. (2023) and Wu et al. (2020) provided evidence regarding that fact that HPR reallocates capital away from speculative investments in real estate. They tend to put the resources

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to better use across the industrial sectors. This type of redirection enhances efficiency of resource allocation and reduced misallocation of financial resources. However, it is important to note that whether this redirection is toward reduced material and energy consumption or not, remain unclear in the context of the real estate sector. For Hainan, these policies might be successful in mitigating wasteful and inefficient use of resources in construction. This in turn may foster better alignment of the policy with sustainable development. Furthermore, Chen et al. (2019) underscored the importance of managing utilization of resources in the development of real estate. This is crucial to maintain energy efficiency. It was found that uncontrolled growth leads to inefficiencies thus purchase restriction policies would be fruitful for curbing excessive construction. It will prevent depletion of resources and ensure that the policies align with energy efficiency goals. However, achieving such outcomes require complementary measures. These measures will address the supply-side dynamics such as promotion of green practices and resource-saving technologies.

Impact on Sustainable Development

The impact of HPR policies on sustainable development is ambiguous. This is true for balancing economic, environmental, and social objectives as well. The findings from the analysis suggest that purchase restrictions may directly support environmental sustainability by curbing speculative construction and promoting urban density. Weng et al (2021), in this regard, highlights the role of urban policies in preserving green spaces alongside the mitigation of natural resource fragmentation. In the context of Hainan, such policies could play a critical role in balancing urban growth with environmental preservation. This is because the ecological sensitivity in Hainan in high. However, there is often a lack of environmental goals in HPR. This highlights a potential shortcoming that needs to be addressed. Furthermore, one objective of HPR policies is to improve affordability of housing. However, Zou et al. (2021) and Wu and Li (2017) note that these policies often fail to address the local economic needs. This leads to uneven outcomes. Across certain cases, housing affordability does improve for the middle and low-income residents. Yet, the policy also encompasses an ability to create shortages of supply and exacerbate inequality. For Hainan, in order to ensure social equity via policies, a tailored approach is mandatory especially given the specific housing demand and income levels of residents. Lastly, the studies highlight how HPR influence economic resilience by redirecting investment and stabilizing markets. Liu et al. (2023) found that these policies improve productivity across industries. This suggests better allocation of resources which may enhance economic sustainability. In Hainan, integration of purchase restrictions with the incentives for green construction and sustainable urban planning might be able to amplify their positive impact on long-term economic resilience.

Conclusion

The study critically examined the impact of purchase restriction policies viz a viz Housing Purchase Restrictions (HPR) on resource consumption and sustainable development. The study aimed to provide insights into Hainan's real estate sector keeping in mind this region's transformative journey. The Systematic Literature Review (SLR) reveals thirteen studies that were perfectly relevant for the analysis. Although the studies revealed valuable insights, the lack of literature in the corresponding realm became quite clear given the sparce number of studies that were ultimately drawn upon. The findings of the analysis however did highlight the significant impact of the policies on housing prices, resource allocation, and productivity. Additionally, the study also underscored their broader implications especially in terms of long-term sustainability. Yet, the latter remains quite complex and varies based on the context. Against this backdrop, HPR policies were able to reduce speculative demand. This helped in stabilizing prices across the housing market which in turn promotes efficient allocation of resources. Nonetheless, the findings also underscored the significant spillover effects, also known as ripple effects of the policies across surrounding regions. Speculative activities across these regions increased and all resource-intensive projects shifted to those areas. This greatly undermined regional sustainability. This dynamic suggests that HPR policies achieved localized resource conservation but when it came to addressing broader regional differences, it failed. Furthermore, it was also found that these policies reallocate capital away from real estate speculations and allocate them toward more innovative activities across industries. This makes it a torchbearer for sustainable practices. It enhances resource efficiency and promotes long-term development. However, the lack of direct evidence on the reduction of material and energy consumption suggests that more complementary measures are

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crucial. It is also extremely necessary to control real estate expansion. This will help in maintaining energy efficiency. Overall, this suggests that purchase restrictions alone re incapable to achieve comprehensive sustainability.

The study thus revealed a few gaps in literature that should be considered for future relevance. It was found that most studies focused solely on the economic outcomes of the policies. They did not measure the environmental impacts explicitly that made direct analysis quite cumbersome. Therefore, for Hainan, a region which has converted to a FTP, ecological preservation is crucial. Thus, future research should explore how these policies integrate environmental considerations or whether they do so at all. Moreover, the existing studies mostly analyzed the demand-side. The supply-side activities such as construction and urban planning were not thoroughly considered. This analysis might be able to underscore a need for complementary policies that would promote resource-efficient technologies and green building practices. Additionally, as spillover effects are rampant, the aims of future studies should also be on figuring out measures that would mitigate these impacts. Additionally, some studies also underscore the risks associated with climate change and how they affect real estate sectors. In the context of Hainan, which is quite prone to climate risks, the need for a policy which would address both housing market dynamics and environmental adaptation is crucial. This genre remains relatively underexplored and need to be focused on. Overall, the literature on this subject is relatively scarce, yet the existing studies have created a strong base for future studies to build on.

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