



NUML Policy Working Paper  
NPS-RE-001



**Regularize | Digitize | Optimize**

# **Transforming Real Estate into an Inclusive and Sustainable Market**

Dr. Abdul Wahid

Associate Professor (Accounting and Finance)

PhD (Financial Economics)

Post-Doc (Real Estate Investment and Finance)



**Department of Accounting and Finance**  
**National University of Modern Languages Islamabad.**  
[www.numl.edu.pk](http://www.numl.edu.pk)



NUML Policy Working Paper  
NPS-RE-001



## Copyright Statement

© 2025 National University of Modern Languages (NUML). All rights reserved.

This paper, titled Transforming Real Estate into an Inclusive and Sustainable Market, is the intellectual property of NUML. It is protected under copyright laws. No part of this document may be reproduced, distributed, or transmitted in any form or by any means, including photocopying, recording, or other electronic or mechanical methods, without prior written permission from NUML or the author, except in the case of brief quotations used for critical reviews or research, as permitted by copyright law.

For permissions or further inquiries, please contact:

National University of Modern Languages (NUML)

H-9 Islamabad, Pakistan

Email: [abwahid@numl.edu.pk](mailto:abwahid@numl.edu.pk)

Phone: 051-9265100



**Department of Accounting and Finance**  
**National University of Modern Languages Islamabad.**  
[www.numl.edu.pk](http://www.numl.edu.pk)



### Message from Patron-in-Chief

I take immense pride in witnessing the transformative steps being undertaken to address the challenges in Pakistan's real estate sector. The efforts led by the NUML's faculty reflect our commitment to fostering innovation, promoting sustainable development, and enhancing socio-economic inclusivity. Real estate is a cornerstone of our national economy, yet it faces systemic inefficiencies and challenges that hinder its growth and equitable distribution.



**Maj Gen Shahid Mahmood Kayani**  
HI(M), Retd

At NUML, we believe in the power of academia to bridge knowledge gaps and offer actionable solutions. Through rigorous research, collaboration, and cutting-edge technological integration, this policy paper aims to develop a transparent, sustainable, and efficient real estate framework that aligns with international standards. I am confident that the insights and strategies generated through this initiative will not only benefit the real estate sector but also contribute to Pakistan's broader economic development and urban planning. Let us continue to work together, innovate, and create a legacy of excellence for generations to come.

### Message from the Patron

It is with great pride that I extend my support to this groundbreaking initiative aimed at revolutionizing Pakistan's real estate sector. Real estate holds immense potential to drive economic growth, but it also presents significant challenges that require innovative and collaborative solutions. This initiative, led by NUML, underscores our dedication to fostering transparency, sustainability, and inclusivity in one of the most critical sectors of our economy.



**Prof. Dr. Safeer Awan**  
Pro-Rector Academics

By bringing together policymakers, industry experts, and academic researchers, we are paving the way for a real estate framework that not only addresses systemic inefficiencies but also promotes equitable growth and sustainable urban development. NUML's commitment to excellence, innovation, and community engagement drives this initiative, ensuring that the outcomes will have a lasting impact on both the sector and society at large. I commend the Dr. Abdul Wahid for his vision and dedication, and I am confident that this effort will contribute significantly to Pakistan's progress in achieving a resilient and thriving real estate sector.



## **National University of Modern Languages**

The National University of Modern Languages (NUML) was founded in 1969 as an institute to promote cross-cultural communication and understanding through the study of oriental and occidental languages. Initially serving Pakistan's armed forces and government personnel with language training, it was elevated to university status on May 29, 2000. Over the years, NUML has evolved into a hub of academic excellence, offering 27 languages alongside emerging disciplines. In addition to its language programs, the university offers comprehensive undergrad, grad and pos-grad programs in Management Sciences, Computer Sciences, Arts and Humanities, and Social Sciences. The university offers advanced research opportunities through dedicated journals, state-of-the-art facilities, and a strong focus on academic excellence, securing top rankings in research and education quality.

### **Department of Accounting and Finance**

The Department of Accounting and Finance at NUML, established in 2022, exemplifies academic excellence and innovation. Offering a dynamic BS program in accounting, finance, and taxation, the department expanded in 2025 to include advanced fields such as Real Estate Investment and Finance, Forensic Accounting and Cybersecurity in BS Program, and Islamic Banking and Finance in the MS program, addressing global market demands.

As a hub of thought leadership, the department is the proud organizer of the International Conference on Real Estate (ICRE), which commenced in 2024. This annual event has become a premier platform for exploring contemporary challenges and opportunities in real estate, urban development, and sustainability. The Department has initiated a Policy Paper Series on real estate & housing to expand its influence within the industry and strengthen its role in policy advocacy. This initiative aims to address real-time and localized challenges in markets and economies, bridging the gap between academic research and practical policymaking.

Our commitment to global standards is reflected in the international recognition we have achieved. The Association of Chartered Certified Accountants (ACCA) accredits our BS Accounting and Finance program, offering students exemptions for their professional qualifications until 2028. Additionally, the Institute of Public Accountants (IPA) has granted graduates dual membership eligibility with prestigious designatory titles such as “AIPA” and “IFA,” contingent on relevant professional experience. With approximately 1000 students, expert faculty, and state-of-the-art facilities, the department is dedicated to fostering professional excellence, ethical leadership, and global competence in its graduates.



## Preface

Housing is a fundamental human right, integral to dignity, security, and well-being. As the Federal Minister for Housing and Works, I take immense pride in presenting this policy paper, which addresses the systemic challenges in Pakistan's real estate sector and proposes actionable solutions to make housing accessible to all. The Ministry of Housing and Works is committed to ensuring that every citizen can exercise this basic right by fostering affordability, equity, and sustainability within the housing sector.



**Mian Riaz Hussain Pirzada**  
Federal Minister, Ministry of Housing and Works

Our Ministry is taking a leading role in advancing research initiatives that are rooted in data-driven research-based methodologies rather than opinion-based approaches. By prioritizing evidence-based policy development, we aim to empower both academia and decision-makers, enabling informed, transparent, and effective solutions to the complex challenges of housing and urban development. This focus on data-driven insights is key to creating sustainable housing policies that align with global best practices while addressing the unique needs of Pakistan's diverse population.

I commend the National University of Modern Languages (NUML) for its steadfast commitment to research excellence and applaud Dr. Abdul Wahid for his exceptional contributions in this policy paper. His work exemplifies how academia can bridge the gap between research and practice, providing actionable frameworks to address speculative practices, valuation inconsistencies, and regulatory gaps in the real estate sector.

This policy paper underscores the need for collaboration between academia, policymakers, and industry leaders to transform Pakistan's real estate landscape. By leveraging innovative technologies, regulatory reforms, and sustainable practices, we can ensure that housing is no longer a privilege but a universally accessible right.

I invite stakeholders to draw upon the insights presented here and join us in shaping a brighter, more equitable future for Pakistan's housing sector.



# Transforming Real Estate into an Inclusive and Sustainable Market

## Table of Contents

Sr. No	Elements	Page
1	Executive Summary	1
2	Introduction/ Genesis of the Problem	2
3	Data and Methodology	5
4	Key Findings of Analytic Hierarchy Process	8
5	Market for Direct Interaction	10
6	Role of Certification Authority (Regularize)	13
7	Role of Technology (Digitize)	14
8	Role of Intermediaries (Optimize)	16
9	Prospective Implications and Outcomes	17
10	Conclusions and Recommendations	18
11	References	20





## Executive Summary

The real estate sector in Pakistan is a cornerstone of its economy, contributing over almost one quarter of GDP and attracting substantial foreign direct investment (FDI) and local capital. Officially valued at \$450 billion but estimated at \$700 billion due to pervasive under-invoicing, the sector presents immense opportunities. However, systemic inefficiencies, speculative practices, and weak state authority undermine its potential. Issues such as artificial price growth, illegal housing societies, fraudulent file trading, and unchecked urban sprawl reflect the sector's lack of a structured market framework.

This study aims to address these challenges by designing an operational framework based on three pillars: establishing a centralized market forum, ensuring comprehensive information flow, and extension of state authority through a robust governance structure. The methodology combines qualitative and quantitative approaches, including focus group discussions, expert interviews, and an international conference titled "Reimagining the Real Estate: Sustainable Market Growth and Urban Planning". Stakeholders from diverse backgrounds, such as policymakers, urban planners, developers, and academics, participated, ensuring comprehensive insights.

The findings underscore the critical need for a centralized platform to optimize buyer-seller interactions, complemented by the integration of blockchain and AI technologies to enhance transparency and operational efficiency. Additionally, the extension of state oversight is recommended through the establishment of a dedicated regulatory authority. This could take the form of local government involvement, given that land-related matters fall under provincial jurisdiction, or a federally established Real Estate Commission, akin to the SECP, to address taxation-related aspects and enforce regulatory compliance.

The proposed framework offers a roadmap to optimize real estate operations, foster transparency, and bridge the gap between market potential and socio-economic inclusivity. By leveraging technology and strengthening governance, the study lays the foundation for a resilient real estate sector aligned with sustainable urban development goals.

**Keywords: Real Estate, Regularization, Information Asymmetric, Digitization**





## Genesis of the Problem

George Akerlof's seminal work on information asymmetry offers a valuable lens to understand the challenges in Pakistan's real estate sector. Akerlof explained how sellers in the used car market in USA often have more information about the quality of the cars they sell than buyers. This information imbalance leads to adverse selection, where buyers, unable to differentiate between high-quality and defective cars, lower their willingness to pay. As a result, high-quality cars are driven out of the market, leaving only "lemons" behind (Akerlof, 1970).

This concept aptly applies to Pakistan's real estate market, where similar asymmetries between sellers and buyers create inefficiencies and vulnerabilities. One of the primary issues in Pakistan's real estate market is the pervasive problem of disinformation. Many developers and housing societies falsely claim to have obtained No Objection Certificates (NOCs) from regulatory authorities to create a perception of legitimacy (Haque & Hasan, 2022). This disinformation is often amplified through aggressive marketing campaigns that target unsuspecting buyers. For instance, in Islamabad, only 22 out of 200 housing societies have valid NOCs, yet illegal societies continue to advertise and sell properties without legal clearance. Buyers, lured by these claims, invest in properties only to discover later that these assets lack legal standing, leading to significant financial losses and legal complications (Wahid, 2023b). The unchecked dissemination of such misleading information erodes trust and creates an environment where fraudulent practices thrive.

In addition to disinformation, information asymmetry exacerbates the challenges in the real estate sector. Sellers, including developers and marketing agencies, possess detailed knowledge about the market, property valuations, and legal statuses, while buyers often remain uninformed or reliant on inaccurate information (Wahid & Malik, 2023). This imbalance leaves buyers vulnerable to adverse decision-making. A prominent example is the speculative trading of plot files, where developers oversell land, issuing plot files far exceeding the actual land capacity—sometimes by as much as 140% (Babar, 2023; Wahid, 2023a). These plot files, often lacking legal validity, are sold at inflated prices, creating speculative bubbles and leaving buyers with valueless assets. Such practices benefit a small group of developers and traders while undermining the broader integrity of the market (Haque et al., 2024).





Valuation discrepancies further complicate the situation. Properties in Pakistan are frequently undervalued by regulatory authorities such as the Federal Board of Revenue and District Collector, with transactions recorded at 50-60% below their actual market values (Wahid et al., 2021). This practice enables widespread tax evasion, deprives the government of significant revenue, and distorts property valuations (Haque & Qasim, 2022). Without market based valuation mechanisms, the market struggles to attract sustainable investment, perpetuating inefficiencies and speculative trading. The resulting lack of transparency makes it challenging for buyers to make informed decisions, further deepening mistrust in the sector.

The conflict of interest among regulatory authorities further exacerbates these issues. Many government institutions in the form of cooperative housing societies and political influential individuals have stakes in private housing societies, creating a reluctance to enforce stringent regulations (Wahid, 2022). This conflict undermines the credibility of regulatory bodies and allows disinformation and information asymmetry to flourish unchecked. The involvement of these authorities in speculative real estate activities discourages the implementation of robust oversight mechanisms, further perpetuating the sector's challenges (Junaidi, 2022).

The consequences of these challenges are profound. Buyers frequently make adverse decisions, purchasing risky or illegal properties, while speculative trading of plot files creates artificial price surges and bubbles. This speculative environment benefits a select group of sellers and developers at the expense of market integrity and buyer confidence. Moreover, the lack of market-based valuation mechanism perpetuates inconsistencies, erodes trust, and limits the sector's potential for sustainable investment (Azwar & Qasim, 2024).

George Akerlof proposed the establishment of a certification authority to mitigate the effects of information asymmetry by providing buyers with verified information about the quality of goods, thus restoring trust and efficiency in markets. Applying this concept to Pakistan's real estate sector, a state-backed certification authority could play a pivotal role in addressing the challenges of disinformation and information asymmetry. While platforms like Zameen.com, Gharana, and OLX have emerged as forums for property listings, they primarily operate as intermediaries without direct bidding processes or regulatory oversight. These platforms lack the authority to verify property legitimacy, valuations, or compliance with legal requirements, leaving buyers vulnerable







to fraud and speculative practices. A state certification authority could ensure standardized property valuations, verify NOCs, and regulate transactions by integrating blockchain technology for transparency and implementing direct bidding mechanisms. Such measures would foster accountability, enhance buyer confidence, and create a more sustainable and inclusive real estate market in Pakistan.

This study aims to examine how information asymmetry and disinformation create systemic issues in Pakistan's real estate sector, including overselling of plot files, illegal housing societies, and valuation challenges. It will explore how the state can play a pivotal role as a certification authority to mitigate these issues, enhance transparency, and foster a sustainable and inclusive real estate market. The study will also propose a comprehensive framework for reducing information asymmetry, ensuring fair practices, and promoting the long-term growth of the sector. By addressing these challenges, the research seeks to contribute to the development of a regulated and efficient real estate ecosystem in Pakistan.

## **1.2 Objective of the Study**

This study is guided by the following objectives:

1. Examine how information asymmetry and disinformation contribute to systemic issues in Pakistan's real estate sector, including the overselling of plot files, the proliferation of illegal housing societies, and valuation discrepancies.
2. Investigate how state-backed certification mechanisms can mitigate information asymmetry, enhance transparency, and regulate real estate practices to foster a sustainable and inclusive market.
3. Develop a framework to reduce information asymmetry, ensure fair practices, and promote the long-term growth of a transparent and efficient real estate ecosystem in Pakistan.





## Data and Methodology

This study employed a structured, multi-faceted methodology spanning two years to address the pressing challenges in Pakistan's real estate sector. Combining qualitative and quantitative approaches, it utilized Focus Group Discussions (FGDs), detailed interviews, desk reviews of policies and laws to prioritize issues and develop actionable solutions. The study was grounded in an initial debate sparked by a seminal article by Nadeem Ul Haque and Ahmed Waqar Qasim, which called for the abolition of DC and FBR rates to allow real estate transactions to operate as a free market with direct buyer-seller interactions. While the article effectively criticized the inefficiencies of these pricing mechanisms, it overlooked critical aspects such as titling, ownership dispute, and fraudulent activities such as plot files, illegal housing societies and weak record management.

Without intermediaries and market makers like brokers and liquidators, markets risk perpetuating information asymmetries, as highlighted by George Akerlof in his influential paper emphasized that without effective state intervention and regulatory oversight, markets with asymmetric information tend to fail, as they cannot differentiate between high-quality and low-quality goods (Akerlof, 1970). This phenomenon, known as adverse selection, highlights the essential role of regulators in ensuring transparency and fostering trust. According to Akerlof, the state and regulatory frameworks must create mechanisms, such as standardization and quality certification, to reduce uncertainty and facilitate market efficiency. These insights became foundational in framing the study's focus on the dual roles of market forces and regulatory mechanisms in the real estate sector.

The first phase of the study was conducted under the National Research Program for Universities (NRPU) project No. 16596, funding from this project enabled sessions in major cities, including Lahore, Karachi, Islamabad, Multan, Faisalabad, Peshawar, and Quetta. These cities were selected for their significant growth potential and the unique challenges they face, such as urban sprawl, price bubbles, illegal housing societies, fraudulent practices, and inefficiencies in the plot file system.

FGDs and interviews in these cities involved diverse stakeholders, including developers, housing society owners, real estate agents, economists, urban planners, and officials from the Federal Board of Revenue (FBR) and development authorities. The discussions delved into the pressing issues of





the sector, exploring their causes and consequences. Through the AHP methodology, participants were asked to compare these challenges pairwise, ranking their relative importance. This iterative process transformed qualitative insights into measurable priorities, creating a robust hierarchy of challenges based on consensus. AHP also validated the coherence of stakeholder judgments by calculating consistency ratios, ensuring logical and reliable analysis.

In each session, participants converged on the most critical issues by refining and shrinking questions across multiple rounds of discussion. Over a year of data collection, these sessions provided a rich pool of insights, culminating in the formulation of the themes for the international conference. These themes were designed to reflect the sector's most pressing challenges while offering actionable paths for sustainable solutions.

The second phase of the study revolved around the international conference on real estate (ICRE 2024) themed “*Reimagining the Real Estate: Sustainable Market Growth and Urban Planning*” which served as a platform for further refining and validating the findings of the first phase. The two-day event featured 12 sessions, including four academic research presentations and eight roundtable discussions led by 50 industry leaders—economists, urban planners, FBR officials, and development authority representatives—alongside 40 academic experts from local and international universities. The discussions addressed critical issues identified during the FGDs, ensuring alignment with stakeholder priorities.

Drawing on Akerlof's insights into reducing quality uncertainty, the conference explored mechanisms to enhance transparency and build trust in the real estate market. Proposed solutions included digitizing property records, introducing standardized titling systems, and leveraging technology to reduce information asymmetry. The iterative application of AHP during the conference further refined these solutions, ensuring they were actionable and aligned with stakeholder consensus.

Post-conference, the study entered its final phase of refinement. The strategic focus points developed during the conference were revisited to design an operational framework that could ensure the practicality and sustainability of the proposed interventions. This phase involved detailed reviews and feedback from 15 subject matter experts, whose insights helped finalize the





framework and validate its applicability. This iterative and collaborative process ensured that the proposed interventions addressed the sector's challenges effectively and were grounded in both empirical evidence and stakeholder consensus.

The methodology adopted for this study exemplifies a rigorous and systematic approach to addressing the complexities of Pakistan's real estate sector. By integrating Akerlof's theoretical insights, empirical evidence from NRPU-supported FGDs and interviews, and stakeholder-driven discussions, the study bridges the gap between academic theory and practical implementation. The combined use of AHP, the collaborative platform of ICRE 2024, and expert reviews provides a robust foundation for actionable recommendations and strategic future directions. The resulting policy framework represents an evidence-based and sustainable roadmap for addressing the challenges and opportunities in Pakistan's evolving real estate landscape.





## Findings and Analysis

The Analytic Hierarchy Process (AHP) applied across three rounds reveals significant insights into the challenges and solutions within Pakistan's real estate sector. The findings highlight the systemic inefficiencies, mismanagement, and speculative practices that hinder sustainable market growth and the prioritization of actionable solutions to address these issues.

In the first round, we find that the lack of a centralized market forum emerged as the most critical challenge, ranked highest in Round 1 with a relative importance of 25%. This finding underscores the urgent need for a structured platform to ensure transparency and streamline interactions among market players, including buyers, sellers, and regulators. Artificial price growth and speculative bubbles, also ranked with 25% importance, further amplify affordability issues and economic disparity. These bubbles, driven by speculative investments and inadequate regulatory mechanisms, deepen economic inequalities by making housing unaffordable for the majority. Under-invoicing and valuation discrepancies, ranked third with 20%, highlight the significant revenue losses and market distortions caused by inconsistent valuation practices, particularly those led by the Federal Board of Revenue (FBR) and District Collector (DC) rates.

Other challenges such as unregistered plot file trading (15%) and illegal housing societies and urban sprawl (10%) reflect the lack of oversight and governance. These issues perpetuate speculative practices, environmental degradation, and inefficient resource allocation. Weak environmental oversight and political and economic conflicts of interest, both ranked lowest at 5%, still indicate pressing concerns, particularly in terms of ecological sustainability and policy. In Round 2, the establishment of a centralized market forum was ranked the highest solution with 40% importance. This platform is essential for creating a transparent and equitable market by addressing challenges like speculative trading and under-invoicing.

The extension of state authority, ranked third at 35%, is vital for regulatory enforcement and ensuring consistent valuation practices. The integration of blockchain and AI technologies, ranked second with 25%, offers promising avenues for enhancing efficiency and transparency, particularly in valuation and record-keeping. Round 3 consolidated the findings into strategic actions. The three core areas of focus include: (1) the creation of a centralized market forum to facilitate transparency, (2) leveraging technology like blockchain and AI to enhance market efficiency, and (3) establishing robust regulatory mechanisms through a dedicated certification authority or creation of real estate commission. These strategies provide a roadmap for addressing systemic inefficiencies and promoting sustainable growth in Pakistan's real estate sector.







**Table 1: Result of three rounds of Analytic Hierarchy Process**

Key Challenges / Solutions	Criteria for Evaluation	Priority Ranking	Relative Importance (%)	Proposed Solutions / Strategic Focus
<b>Round 1: Identification of Key Challenges</b>				
Lack of a centralized market forum	Transparency, structured market interactions	1	25%	-
Artificial price growth and speculative bubbles	Affordability issues, economic disparity	2	25%	-
Under-invoicing and valuation discrepancies	Revenue loss, market distortion	3	15%	-
Unregistered plot file trading	Fraud, market instability	4	15%	-
Illegal housing societies and urban sprawl	Environmental impact, regulatory failure	5	10%	-
Weak environmental oversight	Ecological degradation, unsustainable growth	6	5%	-
Political and economic conflicts of interest	Policy stagnation, inequality	7	5%	-
<b>Round 2: Evaluation of Potential Solutions</b>				
Lack of a centralized market forum	Matched with Centralized market forum	1	25%	Facilitate transparent interactions between market players.
Artificial price growth and speculative bubbles	Matched with Integration of blockchain and AI	2	25%	Enhance transparency, accuracy, and market efficiency.
Under-invoicing and valuation discrepancies	Matched with Formation of Real Estate Commission	3	15%	Standardize valuations and enforce regulations.
Unregistered plot file trading	Partially resolved through Centralized forum	4	15%	Improve oversight to eliminate speculative plot file trading.
Illegal housing societies and urban sprawl	Regulatory enforcement and sustainable planning	5	10%	Manage urban sprawl and promote sustainable urban development.
Weak environmental oversight	Sustainable planning policies	6	5%	Mitigate environmental risks and promote sustainability.
Political and economic conflicts of interest	Governance and policy reforms	7	5%	Reduce conflicts of interest and improve governance.
<b>Round 3: Strategic Focus</b>				
Centralized market forum	Transparency, accessibility	1	40%	Facilitate transparent interactions between market players.
Extension of state authority	Regulation, policy enforcement and Certification	2	35 %	Certification of property i.e. ownership, size and location etc. to reduce information asymmetry
Integration of blockchain and AI technologies	Efficiency, fraud prevention	3	25%	Enhance transparency, accuracy, and market efficiency.





## Market for Direct Interaction

The first step in this framework is the creation of a centralized web-based forum that facilitates direct interaction between buyers and sellers, addressing a core inefficiency in the real estate market. Traditionally, intermediaries or unregulated brokers often dominate the process, leading to inflated prices, fraudulent practices, and lack of transparency. This forum eliminates such intermediaries, allowing buyers (demand) and sellers (supply) to connect directly and negotiate property transactions. Sellers initiate the process by listing their properties on the platform. Each listing includes essential details, such as property location, size, features, and initial price expectations. This data serves as the starting point for engagement. Buyers, on the other hand, access these listings to review available properties and participate in a bidding process. This method ensures that prices are determined fairly based on market dynamics, fostering competition and transparency. The platform provides a structured environment where both parties can engage openly, reducing information asymmetry and enabling more informed decision-making. By streamlining negotiations and creating a trustworthy space for transactions, this step sets the foundation for a modernized real estate market.

This forum is designed to integrate and streamline the interactions of four key stakeholders: buyers, sellers, intermediaries & liquidators, and certification authorities, ensuring a transparent and efficient real estate marketplace. Buyers and sellers form the demand and supply sides, respectively, and are the central participants in this platform. They are empowered to engage directly, participate in transparent bidding processes, and negotiate transactions freely. Sellers can list their properties for auction or sale, while buyers assess, bid, and finalize property deals.

Intermediaries and liquidators play a crucial facilitative role in this ecosystem. These entities, registered and regulated by the state, act as brokers or liquidators, ensuring that the bidding and transaction processes are seamless. Leveraging their expertise in market trends and historical pricing, they assist sellers in setting appropriate auction prices and posting bids on the forum. They also support buyers by organizing property viewings, such as open houses (commonly practiced in developed markets), and guiding them through the finalization of deals.





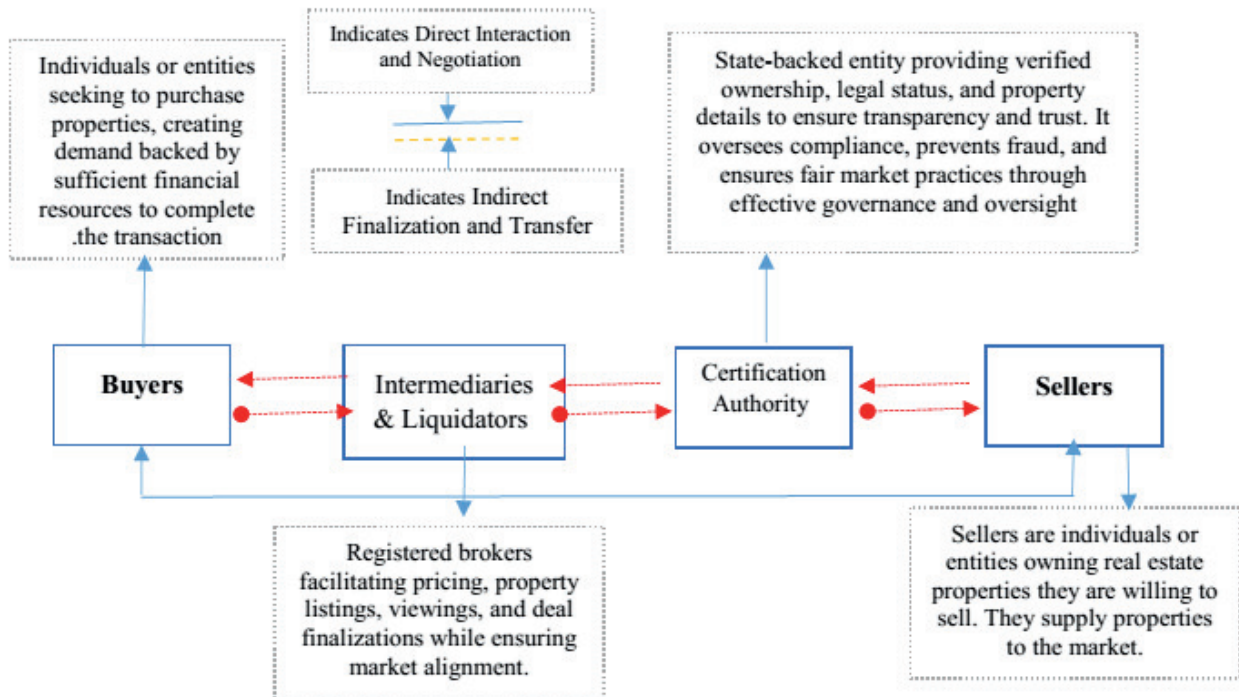
The certification authority, representing the state, ensures the credibility of the marketplace by issuing property certifications. These certifications include vital details such as ownership and title verification, property size and location (including boundary delineations), and disclosures of any legal disputes associated with the property. This process mitigates the risk of fraud and builds trust among participants.

Finally, the regulatory authority, which could be a local government body or a dedicated real estate commission at the federal level, oversees the entire framework. It enforces compliance, prevents market manipulation, and safeguards stakeholders from fraudulent practices. This oversight ensures a fair, competitive, and transparent environment. Together, these stakeholders and their defined roles aim to address current challenges in the real estate sector, providing a sustainable, equitable, and efficient market aligned with international standards.

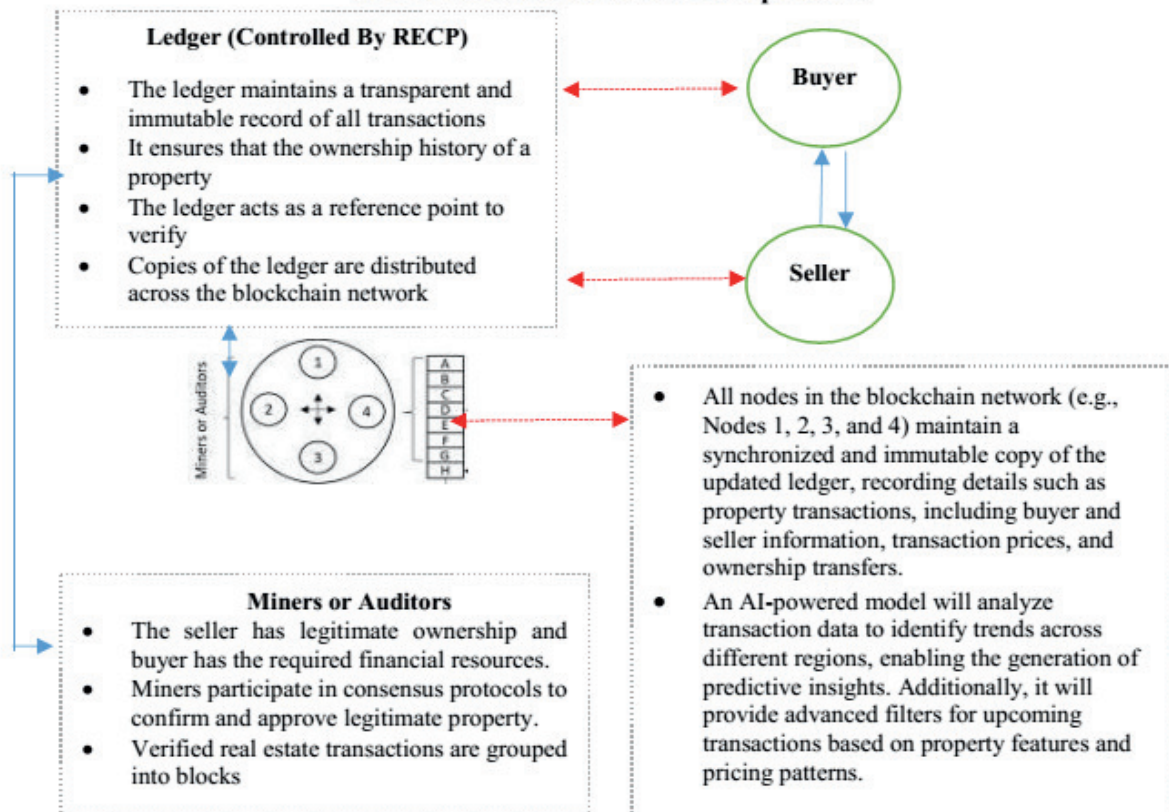




### Operational Framework of Real Estate Market Place (Based on George Akerlof 's Model)



### Role of Blockchain and AI in Its Operations





## Role of Certification Authority (Regularize)

The Certification Authority plays a central role in modernizing and streamlining the real estate sector by ensuring transparency, accountability, and trust among stakeholders. By bridging gaps between buyers, sellers, and intermediaries, the authority ensures secure property transactions, dispute resolution, and compliance with legal and financial obligations. Operating at both provincial (it can be local bodies or Mayor office etc.), and federal level (such as ICT office) or new dedicated authority named Real Estate Commission can be established, it collaborates with local governments for land-related matters and with the Federal Board of Revenue to facilitate tax and fee collection. This forum will compressively oversee following key roles (detailed laws and SOPs may be formulated in later at each level):-

### 1.Certification of Property Features

- The Certification Authority verifies and certifies key property attributes, including title/ownership, size (e.g., marla, kanal, square feet), location, and boundaries.
- Using Google Maps and GIS technology, it ensures accurate geo-tagging of properties, providing precise boundary delineations and proximity to key amenities.
- AI-powered tools validate this data, flagging inconsistencies or disputes to ensure all certified information is accurate and trustworthy.

### 2.Ownership and Title Verification

- The authority authenticates property titles, ensuring that ownership records are legitimate and free from disputes.
- Blockchain technology is utilized to create an immutable record of ownership, preventing unauthorized changes and reducing the risk of fraudulent claims.
- Certified title documents serve as secure and verifiable proof of ownership for buyers, sellers, and intermediaries.

### 3.Facilitating Ownership Transfer and Payment Settlement

- The Certification Authority oversees the legal transfer of ownership, ensuring that the process adheres to regulatory standards and is transparently documented.
- It integrates AI and blockchain to streamline payment settlements, ensuring secure and timely transactions between buyers and sellers.







- Collaborates with the Federal Board of Revenue (FBR) to calculate and impose taxes, duties, and fees, ensuring compliance with government regulations and revenue collection.

#### **4. Promoting Market Transparency and Accountability**

- By maintaining a centralized, accessible database of certified properties, the Certification Authority provides stakeholders with reliable data to make informed decisions.
- AI tools analyze transaction trends and pricing patterns, offering predictive insights for buyers and sellers.
- The transparent certification and payment process fosters accountability, minimizes fraud, and aligns with FBR's requirements for taxation and duty enforcement.

### **Role of Technology (Digitize)**

The integration of blockchain, artificial intelligence (AI), and geographic information systems (GIS) revolutionizes real estate operations, empowering the Certification Authority, enhancing buyer-seller interactions, improving pricing accuracy, and fostering a more efficient, transparent, and eco-friendly platform.

#### **1. Enhancing Certification Authority Functions**

- Blockchain ensures secure, immutable records of property ownership, transaction history, and certifications, minimizing disputes and eliminating fraudulent activities.
- GIS provides precise property location data, boundary delineations, and proximity to key amenities, ensuring that certifications are accurate and trustworthy.
- AI automates the validation process by cross-referencing property details with historical records and market trends, reducing human error and administrative overhead.

#### **2. Improving Buyer-Seller Interactions**

- Blockchain establishes trust by ensuring all property details are transparent and tamper-proof, facilitating seamless and secure transactions between buyers and sellers.





- AI-powered chatbots and recommendation systems provide personalized guidance, helping buyers explore properties that meet their preferences in terms of size, location, price, and features.
- GIS-based virtual tours allow buyers to assess properties remotely, enhancing convenience and reducing the need for physical visits.

### **3. Enhancing Pricing Trends and Accuracy**

- AI algorithms analyze limited comparable properties and vast market data to generate accurate pricing trends, providing sellers with optimal pricing recommendations.
- Buyers can access AI-driven predictive insights to identify properties that offer the best value, aligning with their budget and preferences.
- Blockchain provides real-time access to transaction histories and market trends, ensuring pricing transparency and reducing the risk of speculative pricing.

### **4. Streamlining Buyer Searches and Reducing Costs**

- AI helps buyers filter properties based on specific criteria such as price range, location, proximity to amenities, and environmental factors, significantly reducing search time.
- GIS mapping enhances the user experience by visually displaying property locations and surrounding features, enabling informed decision-making.
- By digitizing processes with blockchain and AI, the platform minimizes costs associated with paperwork, physical visits, and manual errors.

### **5. Promoting Green Practices and Reducing Documentation**

- Blockchain's digital ledger eliminates the need for excessive documentation, reducing paper usage and promoting eco-friendly practices.
- AI and GIS facilitate virtual property tours, minimizing unnecessary travel and its associated environmental impact.
- The platform's automation of processes reduces the reliance on physical paperwork, aligning with global sustainability goals.





## Role of Intermediaries (Optimize)

Intermediaries and liquidators will be registered firms, operating as private or public limited companies, and officially recognized as brokers under regulatory oversight. The authority will establish standardized consultancy fees, calculated as a fixed percentage of each transaction, ensuring transparency and fairness. These entities will function similarly to brokers in developed markets, providing professional services to streamline real estate operations. Their responsibilities encompass key roles such as initiating accurate property bidding, facilitating virtual and physical property visits, marketing properties, negotiating deals, and ensuring seamless documentation and ownership transfers. This framework ensures that intermediaries and liquidators cater to the diverse needs of the real estate sector while upholding compliance and efficiency.

- **Facilitating Accurate Pricing and Compliance:** Intermediaries and liquidators assist sellers in initiating property bids by ensuring accurate pricing based on market trends, historical data, and current demand. They also guide sellers in fulfilling key Standard Operating Procedures (SOPs), such as providing verified property documents, adhering to auction regulations, and ensuring transparency in the bidding process. This role ensures fairness and consistency in property valuations, creating a reliable marketplace.
- **Supporting Virtual and Physical Property Visits:** To enhance buyer convenience, intermediaries arrange virtual tours using advanced technologies like 3D walkthroughs and detailed video presentations. They also coordinate physical visits to the properties, organizing open houses or scheduled tours. These efforts allow buyers to assess the properties thoroughly before making decisions, bridging gaps between buyers and sellers effectively.
- **Property Marketing and Negotiation:** Intermediaries play a critical role in marketing properties to potential buyers through various channels, including online platforms, social media, and traditional advertisements. They highlight key features and competitive advantages of properties to attract maximum interest. Additionally, they act as negotiators, ensuring that both buyers and sellers reach mutually beneficial agreements, minimizing conflicts and misunderstandings.
- **Facilitating Documentation and Ownership Transfer:** Intermediaries and liquidators streamline the process of property documentation and ownership transfer.





They ensure that all legal requirements are met, including the preparation and submission of contracts, title deeds, and other essential documents. Collaborating with regulatory authorities, they facilitate smooth and compliant ownership transfers, minimizing delays and potential disputes. This role ensures that transactions are not only efficient but also legally sound and transparent.

## Prospective Implications and Outcomes

Developing a web-based platform powered by blockchain, AI, and GIS, regulated by the Certification Authority and facilitated by intermediaries, will revolutionize the real estate sector. This innovative system will ensure transparency, reduce information asymmetry, and eliminate fraud through secure and immutable blockchain records. AI will optimize pricing trends, assist buyers in finding properties aligned with their preferences, and streamline transactions, while GIS will provide precise location and boundary details. The platform will exclude illegal housing societies, eliminate the outdated patwari system, and minimize costs through automation. These advancements will create a sustainable and inclusive market, attract foreign direct investment (FDI), particularly from expatriates, and reduce speculative price bubbles, fostering trust and long-term stability in the real estate ecosystem. This will bring following socio-economic corns:-

- Comprehensive and transparent data flow, powered by blockchain and AI, ensures that buyers and sellers have access to accurate property details, minimizing information gaps and enabling informed decision-making.
- Blockchain-based certification of titles and ownership eliminates ambiguity and ensures secure, immutable records. This reduces ownership disputes and fosters trust among stakeholders.
- The use of blockchain and AI reduces the likelihood of fraudulent activities by ensuring verifiable and tamper-proof transactions, creating a secure marketplace.
- The Certification Authority ensures that only verified and legal housing societies can participate in the market, preventing unauthorized developments and enhancing market credibility.
- Digitized property records maintained on blockchain eliminate reliance on the traditional patwari system and manual record-keeping, which are often slow, error-prone, and corrupt.





- Automated processes, virtual property tours, and reduced reliance on middlemen lower transaction costs for buyers and sellers, making real estate transactions more efficient.
- A regulated and transparent system fosters long-term sustainability and inclusivity, attracting diverse participants and creating equal opportunities for all stakeholders.
- Addressing longstanding issues such as fraud and ownership disputes builds confidence among expatriates. Secure property acquisition through platforms like Roshan Digital Account makes investing in real estate attractive for overseas Pakistanis.
- Expatriates can directly transfer funds to sellers through secure and verified channels, ensuring transparency and eliminating intermediaries.
- Transparency and the reduction of information asymmetry curb speculative practices and price manipulation, stabilizing market trends and ensuring fair pricing.
- Secure systems and reliable certifications foster trust among buyers, sellers, and investors, encouraging greater participation and ensuring equitable growth in the real estate sector.
- Centralized regulatory oversight ensures compliance with legal and environmental standards, promoting ethical practices and sustainable urban development.

## Conclusion & Recommendations

The transformation of Pakistan's real estate sector into a transparent, sustainable, and inclusive market is both necessary and achievable. By leveraging technologies like blockchain, AI, and GIS, and ensuring effective governance through the Certification Authority and intermediaries, the sector can address longstanding issues such as fraud, information asymmetry, speculative practices, and inefficiencies in documentation. This framework not only streamlines property transactions but also attracts foreign direct investment, promotes sustainable urban development, and ensures equitable access for all stakeholders. A centralized, technology-driven platform regulated by competent authorities has the potential to revolutionize the real estate landscape, fostering trust, efficiency, and long-term growth.

1. **Establish a Web-Based Market Forum:** Create a centralized digital platform for buyer-seller interaction. The platform will incorporate direct bidding mechanisms and transparent pricing, effectively eliminating outdated DC rates and FBR valuation methods.







This system will foster transparency, streamline transactions, and establish a fair market where prices are determined by actual demand and supply. It will reduce reliance on intermediaries and mitigate fraudulent practices, enhancing trust among market participants.

**2. Establish a Certification Authority:** Set up a regulatory body (existing like ICT or a dedicated Real Estate Commission) to certify property attributes, such as title, ownership, and legal status. The authority will digitize the certification process and integrate it with a centralized database. This will standardize property validation, eliminate the need for multiple NOCs, and reduce the influence of intermediaries like the patwari system. Buyers and sellers will have access to verifiable property details, promoting accountability and minimizing disputes.

**3.Utilize Blockchain, AI, and GIS for Data Integrity:** Employ blockchain for immutable transaction records, AI for predictive market insights, and GIS for precise property geo-tagging. These technologies will operate under the Certification Authority, with intermediaries providing necessary facilitation. The integration of advanced technologies will ensure accurate, fraud-free data, improve market valuation mechanisms, and enhance operational efficiency. It will attract foreign investments by providing a secure and transparent marketplace, ultimately boosting economic growth.

**4. Link NADRA Database to the Real Estate Platform:** Integrate the NADRA database with the centralized real estate platform to streamline taxation, ownership transfer, and documentation processes. NADRA's comprehensive identity verification system will enhance the accuracy and reliability of these processes.

- Linking NADRA will ensure that ownership details, financial transactions, and property records are linked to verified national identity data, reducing errors and fraudulent claims.
- The integration will create a transparent trail of transactions, making it easier to track and regulate ownership changes and tax obligations.
- The system will facilitate real-time verification of ownership and compliance with tax regulations, fostering trust among stakeholders and ensuring adherence to government policies.





## References

1. Akerlof, G. (1970). The market for lemons: Qualitative uncertainty and the market Mechanism. *Quarterly Journal of Economics*, 84, 488–500. <https://doi.org/10.1016/b978-0-12-214850-7.50022-x>
2. Azwar, M. A., & Qasim, A. W. (2024). Land Titles: A Missing Basic Elemental of the Real Estate Market. <https://pide.org.pk/research/land-titles-a-missing-basic-elemental-of-the-real-estate-market/>
3. Babar, W. (2023). Real estate's fictitious file system. *The Dawn*. <https://www.dawn.com/news/1731800>
4. Haque, N. ul, & Hasan, L. (2022). Housing societies — a Pakistani animal. *The Dawn*. <https://www.dawn.com/news/1711924>
5. Haque, N.-U., & Qasim, A. W. (2022). Build A Real Estate Market: Kill FBR And DC Rates. <https://file.pide.org.pk/uploads/discourse-vol1i2-09-build-a-real-estate-market-kill-fbr-and-dc-rates.pdf>
6. Haque, N. U., Qasim, A. W., & Wajahat, M. N. (2024). File Culture: A Crippling Affliction to the Real Estate Market. <https://pide.org.pk/research/file-culture-a-crippling-affliction-to-the-real-estate-market/>
7. Junaidi, I. (2022). Co-op housing societies won't be allowed to use state institutions' names any more. *Dawn*, 1–2. <https://www.dawn.com/news/1667095>
8. Wahid, A. (2022). Urban Greenness and Pricing Premium on Residential Properties. 1–20. <https://europepmc.org/article/ppr/ppr500851>
9. Wahid, A. (2023a, February 20). Real estate as an economic bogeyman. *The Dawn*. <https://www.dawn.com/news/1738018>
10. Wahid, A. (2023b, May 15). Real estate speculations. *The Dawn*. <https://www.dawn.com/news/1753195/real-estate-speculations>
11. Wahid, A., Kowalewski, O., & Mantell, E. H. (2023). Determinants of the prices of residential properties in Pakistan. *Journal of Property Investment and Finance*, 41(1), 35–49. <https://doi.org/10.1108/JPIF-06-2021-0051>
12. Wahid, A., & Malik, T. N. (2023, October 23). Taming the urban sprawl. *Dawn* <https://www.dawn.com/news/1782995>
13. Wahid, A., Mantell, E. H., & Mumtaz, M. Z. (2021). Under Invoicing in the Residential Real Estate Market in Pakistan. *International Journal of Strategic Property Management*, 25(3), 190–203. <https://doi.org/10.3846/ijspm.2021.14337>



## Advisory Board



Prof. Dr. Oskar Kowalewski  
Professor (Real Estate Investment  
and Finance) IÉSEG School of  
Management, France



Prof. Dr. Nadeem Ul Haque  
Former VC, PIDE/ Former  
Deputy Chairman Planning  
Commission



Dr. Ghulam Sarwar Sandhu  
Former Director General  
CDA



Dr. M. Zubair Mumtaz  
Associate Professor (Real  
Estate Investment and  
Finance), University of Bahrain



Mr. Ghulam Raza Narejo,  
Deputy Country Director  
Islamic Relief Pakistan



Mr. Zahid Latif Khan  
Chairman of Redamco and  
former Chairman of ISE



Mr. Imtiaz Ahmed  
Ex-Chief Planning  
Commission



Mr. Mukarram Jah Ansari  
Member FBR



Prof. Dr. Aamer Taj  
Professor (Public Policy),  
ImSciences Peshawar

## Advisory Board



Mr. Sagheer Mushtaq  
CEO ISE Tower REIT  
Management Company Ltd



Prof. Dr. Faid Gul  
Professor (Finance and  
Investment at NUML)



Prof. Dr. Asghar Naeem  
Professor (Urban Planning)



Mr. Kashif Hameed  
Urban Planner



Barrister. Zafarullah Khan  
Former Minister



Mr. Tahir Shamshad  
Ex-Chairman CDA



Dr. Shujaat Farooq  
Chief of Research / Director  
(Research) at PIDE



Mr. Waseem Hayyat Bajwa  
Member from Ministry of  
Housing and Works



Mr. Arshad Dad  
Chief Advisor CAP

## Key Takeaways and Way-Forward

Genesis of Problem	Proposed Solution	Proposed Framework
<b>Information asymmetry</b> between buyers and sellers leading to disinformation and speculative practices.	Establish a <b>Web-based Centralized Market Forum</b> for direct buyer-seller interaction to reduce intermediaries and ensure transparency.	Develop a <b>state-backed certification authority</b> for property verification, including title, ownership, and valuation.
<b>Pervasive under-invoicing</b> and valuation discrepancies, resulting in revenue loss and market distortion.	<b>Implement Blockchain and AI technologies</b> for secure records, transaction transparency, and predictive insights.	<b>Digitize property</b> records to <b>eliminate</b> reliance on traditional systems like the <b>patwari system and DC/FBR Rate</b> .
<b>Unregistered plot file</b> trading and speculative bubbles undermining market integrity.	<b>Establish a certification authority</b> to enforce regulatory compliance and address unregistered files.	Certification authority will <b>verify property features</b> , including title, ownership, and valuation.
<b>Illegal housing societies</b> , unchecked urban sprawl causing environmental degradation, and social inequalities.	<b>Certification authority using GIS technology for accurate geo-tagging</b> of properties and zoning. Promote sustainable urban planning with stronger local and federal regulatory oversight.	Ensure regulatory bodies <b>validate and license</b> housing societies before operations.
Lack of <b>investor's trust</b> due to fraudulent practices and unclear property ownership.	<b>Certification authority utilizing blockchain-based certification</b> to maintain immutable records of ownership and transactions, ensuring transparency and reducing fraud.	<b>Build a transparent database of certified properties</b> accessible to all stakeholders, fostering trust and confidence in the market.



## About Author

Dr. Abdul Wahid is a distinguished academic, researcher, and Associate Professor at the National University of Modern Languages (NUML), Islamabad. With a PhD in Financial Economics and a Post-Doctorate in Real Estate Investment and Finance from IÉSEG School of Management, France, he is recognized for his pioneering contributions to real estate valuation, sustainable urban policy, under-invoicing in real estate and green finance.



Dr. Wahid's research portfolio includes groundbreaking studies on real estate market regularization, the impact of urban climate and greenness on property valuation, and the integration of blockchain and AI technologies to enhance transparency in real estate markets. He has led and collaborated on multiple high-impact projects, including a Higher Education Commission (HEC)-funded framework for real estate sustainability and a comparative study on housing market efficiencies in developing economies. His work also addresses pressing socio-economic issues such as debt bondage, gender disparities, and economic inequalities, with several projects funded by HEC, RASTA, and international organizations. As a thought leader, he has authored over 20 research publications and contributed to global platforms like the IMF and London School of Economics blogs, as well as Pakistan's Dawn newspaper. Dr. Wahid's dedication to bridging academia and practice is evident in his efforts to create actionable solutions for sustainable urban development, making him a leading voice in real estate research and financial policy.

