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FORECASTING PROPERTY MARKET SITUATION USING ECONOMIC INDICATORS: A CONCEPTUAL AND EMPIRICAL REVIEW

[1]Fidelis Ifeanyi Emoh, [2]Toochi Blessing Nwaikwu

[1]Department of Estate Management, Nnamdi Azikiwe University Awka

[2]Department of Estate Management, Federal Polytechnic Oko

[1]Correspondence: fi.emoh@unizik.edu.ng

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Abstract

The property market is an important component of every nation's economy because it contributes to economic growth, employment generation, infrastructure development, and wealth creation. However, the real estate market is highly sensitive to changes in macroeconomic conditions such as inflation, interest rates, exchange rates, unemployment, and gross domestic product (GDP). This study examines the use of economic indicators in forecasting property market situations. The research explores forecasting theories, forecasting models, and key economic indicators that influence property market performance. The study adopts a conceptual and empirical review approach by examining existing literature and economic trends. Findings reveal that economic indicators significantly influence property demand, supply, investment decisions, rental values, and property prices. The study concludes that forecasting models based on economic indicators can improve decision-making for investors, developers, valuers, and policymakers. The integration of economic indicators with appropriate forecasting techniques can therefore provide a more comprehensive basis for understanding future property market conditions. The study recommends the integration of advanced forecasting techniques and reliable economic data for sustainable property market planning.

Keywords: *Property Market, Forecasting, Economic Indicators, Real Estate, Inflation, GDP, Interest Rate.*

1.0 INTRODUCTION.

The property market plays a vital role in the economic development of nations by facilitating investment, urban growth, and housing provision. The market consists of residential, commercial, industrial, and agricultural properties whose values are influenced by economic, social, political, and environmental factors. In many developing economies such as Nigeria, the property market experiences fluctuations due to unstable macroeconomic conditions.

Forecasting the property market situation using economic indicators involves the use of measurable macroeconomic variables—such as inflation rate, interest rate, exchange rate, gross domestic product (GDP), unemployment rate, and population growth—to predict future trends in property demand, supply, prices, and investment performance. These indicators provide signals about the overall health of the economy and directly or indirectly influence real estate activities. For example, rising interest rates may reduce mortgage affordability and slow down property demand, while population growth can increase housing demand and push prices upward (Mankiw, 2019; Case & Shiller, 2003).

Economic indicators are commonly used in forecasting property market trends because they reflect the overall performance of an economy. Indicators such as inflation rate, gross domestic product (GDP), interest rate, exchange rate, unemployment rate, and population growth directly affect property market activities (Olaleye & Bello, 2019). Economic indicators are widely recognized as leading or lagging signals that reflect changes in economic conditions affecting real estate markets. GDP growth, for instance, is often associated with increased income levels and higher demand for housing and commercial properties, while inflation can affect construction costs and property valuation. Similarly, exchange rate fluctuations may influence foreign investment in real estate, especially in developing economies, while unemployment levels can reduce household purchasing power and weaken housing demand (Miles, Berens & Weiss, 2015; Gamu, 2024).

In Nigeria, forecasting property market situations using economic indicators has become increasingly important for sustainable real estate development. Accurate forecasting helps stakeholders plan investments, allocate resources efficiently, design housing policies, and manage risks associated with market volatility.

1.1 Problem Statement of the Study

The property market plays an important role in economic growth, investment, housing provision, and urban development. However, the market is often unstable and difficult to predict due to constant changes in economic conditions such as inflation, interest rates, exchange rates, unemployment, and Gross Domestic Product (GDP). These economic changes frequently affect property prices, rents, construction costs, housing demand, and investment decisions.

In many developing countries such as Nigeria, the property market experiences fluctuations that create uncertainty for investors, developers, valuers, financial institutions, and government agencies. For instance, rising inflation and exchange rate instability often increase the cost of building materials, while high interest rates reduce access to mortgage financing. Similarly, unemployment and low income levels reduce people's ability to acquire or rent properties.

Despite the importance of forecasting in real estate decision-making, there is limited application of reliable forecasting models and economic indicators in predicting property market trends in Nigeria. Many property investment decisions are still based on assumptions, personal judgment, or incomplete market information rather than scientific forecasting techniques. This situation increases the risk of poor investment decisions, inaccurate property valuation, financial losses, and inefficient urban planning.

Furthermore, the absence of accurate and reliable property market data, weak institutional frameworks, and poor economic coordination make property market forecasting more difficult. As a result, stakeholders often find it challenging to anticipate future market conditions and respond effectively to economic changes.

Therefore, there is a need to examine how economic indicators can be used to forecast property market situations and improve decision-making within the real estate sector.

1.2 Aim of the Study

The main aim of forecasting property market situation using economic indicators is to predict and understand future trends in the property market by analyzing economic indicators such as inflation rate, interest rate, GDP, exchange rate, unemployment rate, and population growth.

1.3 Objectives of the Study

The specific objectives may include:

1. To examine the relationship between economic indicators and the property market.
2. To examine how institutional responses to economic indicators shape property market outcomes and forecasting.
3. To examine the forecasting tools used in analysing the property market.
4. To provide recommendations that can assist investors, developers, valuers, and government agencies in making informed property decisions

2.0 LITERATURE REVIEW

2.1 CONCEPT OF PROPERTY MARKET

The property market refers to the system through which interests in land and buildings are created, bought, sold, leased, and exchanged. It involves interactions between buyers, sellers, developers, investors, tenants, financial institutions, and government agencies, and is influenced by demand and supply forces, government policies, and macroeconomic conditions (Ajayi, 2018). The market determines property values, rental levels, investment returns, and land-use patterns. Real estate is unique because it is heterogeneous, immovable, durable, and location-specific; no two properties are exactly the same, which makes valuation and pricing more complex. According to Keogh and D'Arcy (1999), the property market is imperfect because information is not always readily available, and transactions involve high costs and long durations. This makes forecasting essential for effective market decisions.

The property market can be classified into different sectors, including: residential, commercial, industrial, agricultural, and special-purpose property markets.

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2.2 PROPERTY MARKET FORECASTING

Property market forecasting involves estimating future trends in property values, rents, vacancies, and investment performance using historical data and economic variables. Forecasting helps stakeholders understand market cycles and anticipate risks.

Studies have shown that forecasting improves investment efficiency and policy formulation in real estate markets (McGough & Tsolacos, 2001). Forecasting models are particularly useful in developing economies where economic instability affects market performance.

Forecasting in the property market seeks to estimate; future property prices, rental values, vacancy rates, demand and supply trends, investment returns, construction activities, land values.

Property market forecasting is important because the real estate sector is highly sensitive to economic changes and market fluctuations. Accurate forecasting reduces uncertainty and investment risk.

2.3 FORECASTING MODELS/TOOLS.

Forecasting models/tools are analytical techniques used to predict future property market conditions such as property prices, rental values, housing demand, vacancy rates, and investment performance. These models assist estate surveyors, investors, developers, financial institutions, and policymakers in making informed decisions under uncertain economic conditions.

Forecasting models can be grouped into:

1. Time Series Models
2. Econometric Models
3. Artificial Intelligence Models
4. Machine Learning Models

2.3.1 Time Series Models

Time series models use historical data collected over a period of time to forecast future market behavior. These models assume that past trends and patterns can help predict future outcomes. Time series analysis is widely used in real estate forecasting because property prices and rents often follow identifiable trends and cycles (Box & Jenkins, 1976).

Time series models are particularly useful in analysing: property price movements, rental trends, housing demand, vacancy rates, construction activities

Two major time series forecasting models include:

- Autoregressive Integrated Moving Average (ARIMA) Model: ARIMA models are used to forecast: house prices, commercial property values, rental income, land prices. The ARIMA model is one of the most widely used statistical forecasting techniques in economics and real estate analysis. The model was developed by Box and Jenkins (1976) and is designed to forecast future values based on past observations.

- Exponential Smoothing Model: Application in Property Market Forecasting. Exponential smoothing models are useful for: forecasting short-term property prices, predicting rental trends, estimating housing demand. Exponential smoothing is another time series forecasting method that gives greater importance to recent observations while assigning smaller weights to older data. The model assumes that recent market behavior is more relevant for forecasting future outcomes (Holt, 2004).

According to Gardner (2006), exponential smoothing models are widely used in business forecasting because of their simplicity and forecasting accuracy.

2.3.2 Econometric Models

Econometric models combine statistical techniques with economic theory to examine relationships between variables. These models are widely used in real estate forecasting because property markets are strongly influenced by macroeconomic indicators such as inflation, interest rates, GDP, and exchange rates (Gujarati & Porter, 2009).

Econometric forecasting models help explain how economic variables influence property market performance.

One major econometric forecasting model is multiple regression analysis and it examines the relationship between one dependent variable and several independent variables. Where dependent Variable is all about property price or rental value and independent variables is all about inflation, GDP, interest rate, exchange rate, population growth, etc.

According to Olaleye and Bello (2019), regression models are highly relevant in developing economies because property markets are strongly affected by macroeconomic conditions.

2.3.3 Artificial Intelligence Models

Artificial Intelligence (AI) models use computer algorithms to identify patterns, learn from data, and make forecasts. AI models are increasingly applied in property market analysis because they can process large volumes of complex data more efficiently than traditional models.

AI forecasting models are especially useful in volatile markets where traditional forecasting methods may fail.

2.3.4 Machine Learning Models

Machine learning algorithms improve forecasting accuracy through data training and predictive analytics.

According to Zhang and Hu (2021), AI-based forecasting models are more accurate in volatile property markets.

Machine Learning (ML) refers to computer systems that learn from data and improve forecasting accuracy automatically without explicit programming.

Machine learning models are used for; predicting property values, detecting market trends, forecasting investment returns, identifying market risks.

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Machine learning models analyze large datasets containing; property characteristics, economic indicators, demographic trends, geographic information.

According to Worzala, Lenk, and Silva (1995), machine learning techniques improve forecasting efficiency in real estate valuation and market analysis.

2.4 ECONOMIC INDICATORS

Economic indicators are statistical and economic variables used to measure the performance and direction of an economy. These indicators help investors, policymakers, estate surveyors, valuers, and developers forecast future property market trends such as property prices, rental values, housing demand, investment returns, and construction activities.

Economic indicators are important in real estate forecasting because the property market is closely linked to macroeconomic conditions. Changes in inflation, interest rates, GDP, exchange rates, unemployment, and population growth significantly affect property demand and supply dynamics (Olaleye & Bello, 2019).

The major economic indicators used in property market forecasting include:

1. Inflation Rate
2. Interest Rate
3. Gross Domestic Product (GDP)
4. Exchange Rate
5. Unemployment Rate
6. Population Growth

2.4.1 Inflation Rate

Inflation measures the general increase in prices over time. Rising inflation increases construction costs, rental values, and property prices. High inflation also reduces purchasing power and affects housing affordability. Inflation is commonly measured using the Consumer Price Index (CPI), which tracks changes in the prices of goods and services consumed by households. According to Adebayo (2020), inflation is one of the strongest determinants of residential property prices in Nigeria because of its direct impact on building costs and investor behavior.

Relationship between inflation and property market are Increase in construction costs, property as an inflation hedge, reduction in housing affordability, Influence on investment decisions.

2.4.2 Interest Rate

Interest rates play a major role in the property market because real estate development and property purchases often depend on loans and mortgage financing (Mankiw, 2016). Interest rates influence borrowing costs and mortgage accessibility. High interest rates discourage property investment because loans become more expensive. Low interest rates stimulate housing demand and real estate development. Interest rate refers to the cost of borrowing money or the return earned on

savings and investments. Central banks, such as the Central Bank of Nigeria (CBN), use interest rates as a monetary policy tool to regulate economic activities.

According to McGough and Tsolacos (2001), interest rate fluctuations significantly affect commercial property investment and housing demand.

Relationship between interest rate and property market are mortgage accessibility, property investment decisions, housing demand, construction financing.

2.4.3 Gross Domestic Product (GDP)

GDP growth reflects increased economic activities, higher income levels, and improved employment opportunities, all of which positively influence the property market (Todaro & Smith, 2015). GDP measures the economic performance of a country. Economic growth increases employment, income levels, and demand for real estate. A growing economy usually leads to higher property values and investment opportunities.

Gross Domestic Product (GDP) is the total monetary value of all goods and services produced within a country over a specific period. GDP is widely used as a measure of economic growth and national economic performance. According to Ajayi (2018), GDP growth is positively related to property price appreciation and housing market expansion.

Relationship between GDP and property market are increase in property demand, growth in commercial real estate, increase in real estate investments, urban development.

2.4.4 Exchange Rate

The Nigerian property market is highly sensitive to exchange rate movements because depreciation of the naira increases the cost of imported building materials (Ndume & Akanegbu, 2025). Exchange rate fluctuations affect imported construction materials and foreign investment in real estate. Depreciation of the Nigerian naira increases building costs and contributes to rising property prices. Exchange rate refers to the value of one country's currency relative to another currency. Exchange rate fluctuations are especially important in developing countries like Nigeria, where many construction materials and equipment are imported. According to Muhammad, Abdullahi, and Saidu (2025), exchange rate volatility has a strong influence on inflation and asset prices in Nigeria.

Relationship between exchange rate and property market are increase in construction costs, impact on foreign investments, inflationary pressure, property price appreciation

2.4.5 Unemployment Rate

Unemployment is a critical economic indicator because employment status affects income levels, housing affordability, and investment capacity (Keynes, 1936). High unemployment reduces household income and housing affordability, thereby affecting property demand. Low unemployment increases consumer confidence and stimulates real estate activities. Unemployment rate refers to the percentage of the labor force that is willing and able to work but unable to find employment. According to Todaro and Smith (2015), unemployment is closely associated with reduced consumer spending and weaker housing market performance.

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Relationship Between Unemployment and Property Market are reduction in housing demand, increase in vacancy rates, decline in property investment, decline in rental income.

2.4.6 Population Growth

Population growth increases housing demand and urban expansion. Rapid urbanization in Nigerian cities such as Lagos and Abuja has contributed to rising property prices. Population growth refers to the increase in the number of people living in a particular area over time. Population growth is a major determinant of housing demand and urban expansion.

Rapid population growth increases demand for residential housing, commercial properties, infrastructure, public facilities. Nigeria is one of the fastest-growing countries in the world, and its increasing population has intensified pressure on housing supply.

According to United Nations Habitat (2022), rapid urban population growth is one of the major drivers of housing demand in developing countries.

Relationship between population growth and property market are increase in housing demand, urbanization, expansion of real estate development, infrastructure pressure.

Economic indicators are essential tools for forecasting property market situations because they reflect the overall condition of the economy and influence real estate activities. Inflation, interest rates, GDP, exchange rates, unemployment, and population growth all have direct and indirect effects on property prices, rents, investment decisions, and housing demand.

Understanding these indicators enables investors, estate surveyors, valuers, and policymakers to make informed decisions and improve forecasting accuracy in the property market.

2.5 INSTITUTIONAL RESPONSES TO ECONOMIC INDICATORS AND THEIR IMPLICATIONS FOR PROPERTY MARKET FORECASTING

Economic indicators do not influence the property market only through direct market forces; they also trigger institutional responses that shape housing finance, land administration, construction regulation, and investment incentives. Understanding these institutional reactions is essential for accurate property market forecasting because policy and regulatory changes can amplify, dampen, or redirect the effects of macroeconomic variables on property prices, rents, demand, and supply.

1. Inflation and institutional responses affecting property markets

High inflation prompts central banks and fiscal authorities to tighten monetary policy, impose price controls, or introduce subsidy and social-protection measures (Mishkin, 2016; Blanchard & Johnson, 2013). In the property market, these responses often raise mortgage interest rates, increase construction costs through higher input prices, and reduce household purchasing power. Forecasters must therefore anticipate not only the direct cost-push effect of inflation on property prices but also the secondary effects of institutional tightening, which can further suppress demand and slow new development.

2. Interest rates and institutional financial systems

Central banks use interest rates as a monetary policy tool, and financial institutions respond by adjusting credit conditions, mortgage underwriting standards, and loan pricing (Mishkin, 2016).

Higher rates typically lead banks and mortgage agencies to tighten lending, reducing housing finance availability and dampening property demand. Lower rates encourage credit expansion and can stimulate both residential and commercial development. Property market forecasts that ignore these institutional credit responses risk underestimating the amplitude of demand cycles.

3. Exchange rate volatility and institutional policy responses

Exchange rate depreciation often leads institutions to introduce foreign-exchange controls, import restrictions, or trade-protection measures (Krugman & Obstfeld, 2018). Because a large share of building materials in Nigeria is imported, such institutional responses raise construction costs and property prices. They may also deter foreign real-estate investment. Forecasting models should therefore incorporate expected policy reactions to exchange-rate movements, not only the direct cost effect of currency depreciation.

4. GDP growth and institutional capacity for property development

Strong GDP growth expands government revenue and institutional capacity, enabling greater investment in infrastructure, land administration, and housing programmes (Acemoglu & Robinson, 2012). Weak growth, by contrast, often triggers austerity and reduced public capital spending. These institutional shifts affect the supply side of the property market and the location of new development. Accurate forecasts of commercial and residential demand therefore benefit from monitoring how fiscal and planning institutions respond to changes in national income.

5. Unemployment and institutional labour and social responses

High unemployment leads governments to expand job-creation programmes, vocational training, and social transfers (Blanchard & Katz, 1997). While these measures can eventually support household incomes and housing demand, the short-term effect of elevated unemployment is reduced affordability and higher vacancy rates. Property market forecasts should therefore distinguish between the immediate demand shock from job losses and the lagged recovery that may follow successful institutional labour-market interventions.

6. Population growth and institutional planning responses

Rapid population growth increases pressure on housing, land, and urban services. Institutions respond through expanded urban planning, land-administration reforms, and infrastructure investment (United Nations, World Population Prospects, 2022). The speed and effectiveness of these institutional responses determine whether rising demographic demand translates into orderly development or into shortages, informal settlements, and sharp price increases. Forecasters who incorporate expected planning and land-policy responses can better anticipate supply constraints and regional price differentials.

In summary, institutional responses to economic indicators form an intermediate channel through which macroeconomic conditions affect property market outcomes. Incorporating these responses into forecasting frameworks improves the realism of predictions of property prices, rents, investment flows, and development activity, particularly in policy-sensitive markets such as Nigeria.

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3.0 RESEARCH METHODOLOGY

This study adopts a conceptual and empirical review approach. The research is primarily qualitative and relies on secondary data obtained from existing scholarly literature, official economic reports, and published empirical studies on property market dynamics and macroeconomic indicators.

3.1 Research Design

The study employs a descriptive and analytical research design based on a systematic review of literature. This design is appropriate because the objective is to synthesize existing knowledge on the relationship between economic indicators and property market performance, rather than to collect primary survey or experimental data. The approach allows for the identification of patterns, theoretical linkages, and empirical findings reported across multiple studies.

3.2 Sources of Data

Secondary data were drawn from peer-reviewed journal articles, textbooks, conference papers, and official publications. Key sources include studies on real estate economics, macroeconomic theory, and property market forecasting published between 1976 and 2025. Relevant materials were obtained from academic databases and institutional repositories. Official economic statistics and policy reports from the Central Bank of Nigeria (CBN), National Bureau of Statistics (NBS), and international bodies such as the United Nations and World Bank were also consulted to contextualize trends in the Nigerian property market.

3.3 Literature Selection Criteria

Literature was selected based on relevance to the research objectives. Inclusion criteria required that studies: (i) examine the relationship between one or more macroeconomic indicators (inflation, interest rate, GDP, exchange rate, unemployment, or population growth) and property market outcomes (prices, rents, demand, supply, or investment performance); (ii) discuss forecasting models applicable to real estate markets; or (iii) provide theoretical or empirical insights into institutional responses to economic conditions. Preference was given to peer-reviewed sources and studies focusing on developing economies, particularly Nigeria. Studies that lacked clear methodological grounding or were unrelated to property markets were excluded.

3.4 Method of Analysis

The selected literature was analyzed thematically. Key themes were organized around: (a) the conceptual nature of the property market and forecasting; (b) major forecasting models (time series, econometric, and artificial intelligence approaches); (c) the influence of specific economic indicators on property market variables; and (d) the effects of these indicators on institutional factors. Findings from empirical studies were synthesized to identify consistent patterns and relationships. Where quantitative results were reported in the literature (for example, regression coefficients or forecast accuracy measures), these were noted and discussed in relation to the Nigerian context. No primary data collection or original statistical modeling was undertaken; the analysis is interpretive and synthetic.

3.5 Scope and Limitations

The study is limited to secondary sources and focuses mainly on the Nigerian property market within the broader context of developing economies. The absence of primary data means that the findings reflect patterns reported in the existing literature rather than new empirical measurements. In addition, the quality and availability of property market data in Nigeria remain constrained, which may affect the precision of forecasting applications discussed. Despite these limitations, the review provides a structured basis for understanding how economic indicators can be used to forecast property market situations and for guiding future empirical research.

4.0 DISCUSSION AND FINDINGS

The study found that economic indicators significantly influence property market situations in Nigeria. Inflation and exchange rate volatility were identified as major drivers of rising property prices due to increased construction costs.

Interest rates also affect property investment decisions because higher borrowing costs discourage real estate financing. GDP growth positively impacts housing demand and commercial property development.

The findings further reveal that forecasting models such as ARIMA, regression analysis, and Artificial Neural Networks are effective tools for predicting property market trends. However, the accuracy of forecasting depends on the availability of reliable economic data.

The study also observed that Nigeria's property market is highly vulnerable to macroeconomic instability because of dependence on imported construction materials and weak housing finance systems.

5.0 CONCLUSION

Property markets are shaped by a wide range of demographic, economic, institutional, and physical factors, including population growth, urbanization, government policies, infrastructure development, inflation, interest rates, and overall economic performance. These factors influence the interaction between property demand and supply, which subsequently affects property prices, rental values, investment activities, and vacancy rates. Generally, when demand for property exceeds available supply, property prices and rents tend to increase, whereas excess supply may result in declining property values, reduced rental growth, and increased vacancy rates.

Economic indicators constitute important tools for understanding and forecasting property market conditions because they provide information about the prevailing and expected state of the economy. Indicators such as inflation, interest rates, gross domestic product (GDP), exchange rates, unemployment, and population growth can exert both direct and indirect effects on real estate markets. For instance, inflation can increase construction and property operating costs, while interest rates influence the cost and availability of mortgage and development finance. Similarly, GDP growth may affect income levels and investment capacity, whereas unemployment can influence households' ability to afford housing. Exchange rate fluctuations can also affect construction costs and the profitability of real estate investments, particularly where imported building materials and equipment are involved.

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A proper understanding of these economic indicators is therefore important to property investors, estate surveyors and valuers, developers, financial institutions, and policymakers. By examining the relationship between economic conditions and property market outcomes, these stakeholders can make more informed decisions, identify emerging market trends, manage investment risks, and improve the reliability of property market forecasts.

Forecasting models provide systematic approaches for analysing historical data and predicting future property market conditions. Time-series techniques, such as Autoregressive Integrated Moving Average (ARIMA) and exponential smoothing, primarily use historical patterns in property market data to generate forecasts. Econometric models, on the other hand, examine the statistical relationships between property market outcomes and relevant economic indicators. More advanced approaches, including Artificial Neural Networks (ANN) and other machine-learning techniques, can analyse large and complex datasets and identify nonlinear relationships that may not be adequately captured by conventional forecasting methods.

The integration of economic indicators with appropriate forecasting techniques can therefore provide a more comprehensive basis for understanding future property market conditions. Such an approach can contribute to improved property investment decision-making, more effective real estate policy formulation, better risk management, and sustainable real estate development in Nigeria

6.0 RECOMMENDATIONS

1. Given the finding that inflation and exchange-rate volatility are major drivers of rising construction costs and property prices in Nigeria, government should prioritise credible, predictable monetary and exchange-rate policies that reduce pass-through to building-material prices.

2. Because the review shows that traditional time-series and regression models can be improved by AI/ML methods in volatile markets, estate surveyors, valuers and researchers should pilot machine-learning approaches alongside ARIMA and econometric models, especially where large property and macroeconomic datasets are available.

3. The literature consistently links high interest rates to reduced mortgage accessibility and weaker housing demand; financial institutions and the Central Bank should therefore expand affordable, long-tenor mortgage products and consider targeted credit guarantees for residential development.

4. Forecasting accuracy is constrained by weak property-market data; government agencies, professional bodies and academic institutions should collaborate to build and maintain publicly accessible, standardised databases of transaction prices, rents and vacancy rates.

5. Because economic indicators (inflation, interest rates, GDP, exchange rates, unemployment and population growth) systematically shape property outcomes, practitioners should incorporate regular monitoring of these indicators into valuation reports, investment appraisals and development feasibility studies.

6. Exchange-rate depreciation raises the cost of imported building materials and feeds property-price inflation; industrial and housing policy should therefore actively support local production and value-chain development for key construction inputs.

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