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Bargaining Power in International Property Investment Markets: The Impact of China and the U.S.

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Abstract

We develop a structural framework in which cross-border commercial real estate prices reflect fundamentals, a macro-valuation component, and an endogenous nationality-specific bargaining wedge. Building on recent work on the interest rate–growth differential, safe-asset shortages, and global capital-flow frictions, we show that capital controls, geopolitical tensions, and financial-market depth shift investors' outside options and beliefs, generating systematic pricing differentials across nationalities. Using 1,113,349 global commercial property transactions from 172 countries, we provide the first large-scale empirical estimates of these bargaining wedges. After controlling for detailed property characteristics and multi-layer fixed effects, Chinese investors pay persistent premia—18–22 percent on average and up to 21.7 percent in offshore markets—while U.S. investors obtain 3–4 percent discounts. These wedges respond sharply to macroprudential and geopolitical regimes: China's capital-control tightening compresses premia, whereas the U.S.–China trade war increases them for both sides. Our results reveal that nationality-specific bargaining power is an equilibrium outcome shaped jointly by macroeconomic valuation forces, regulation, and geopolitical shocks.

Keywords: C*ross-Border Real Estate Investment*; *Bargaining Power*; *Capital Controls*; *Geopolitical Shocks*; *Bubble Component*; *International Capital Flow*.

JEL classification: D83, F21, G15, G12, R30

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1. Introduction

Over the past two decades, global real estate markets have been reshaped by unprecedented cross-border capital flows, an environment characterized by persistently low interest rates, abundant liquidity, and rising geopolitical uncertainty. A central driver of these dynamics is the *global saving glut*—a surplus of savings relative to domestic investment opportunities—that has pushed institutional and high-wealth investors to search for yield beyond national borders (Badarinza & Ramadorai, 2018; Bernanke, 2005; Favilukis & van Nieuwerburgh, 2017). When domestic markets become saturated or heavily regulated, investors increasingly allocate their capital toward offshore real estate, contributing to price inflation, volatility, and asymmetric bargaining outcomes in host economies. This phenomenon is especially salient in the case of Chinese and U.S. investors, who collectively account for a dominant share of global commercial real estate transactions.

A large body of research documents that international capital flows play an important role in real estate markets, influencing local price dynamics, liquidity, and housing affordability (Cohen , 2008;Aizenman & Jinjarak, 2009; Favilukis, Kohn, Ludvigson, & van Nieuwerburgh, 2012, 2013; Ferrero, 2014; Justiniano, Primiceri, & Tambalotti, 2014). In the U.S., inflows from foreign buyers have been shown to correlate strongly with house price appreciation during the mid-2000s boom (Chinco & Mayer, 2015; DeFusco, Ding, Ferreira, & Gyourko, 2018). Similar effects have been documented for London, Vancouver, Sydney, Singapore, and Paris, where capital from specific foreign origins—particularly China—has exerted outsized influence on local price formation (Badarinza & Ramadorai, 2018; Cvijanovic & Spaenjers, 2018; Badarinza., Ramadorai, & Shimizu, 2021; Miyakawa, Shimizu, & Uesugi, 2022; Sá, 2016).

Despite these insights, two major gaps remain in the literature. First, prior research has largely focused on residential markets, leaving the commercial real estate sector—where transactions are larger, buyers are more heterogeneous, and information asymmetry is lower—relatively understudied. Second, foreign buyers are often treated as homogeneous, yet emerging evidence suggests substantial heterogeneity in their bargaining behavior, valuation, and sensitivity to domestic and geopolitical shocks. For example, Gorback and Keys (2020) show that Chinese demand shocks are transmitted to U.S. housing markets, while Badarinza and Ramadorai (2018) highlight the role of diaspora networks and familiarity in shaping foreign purchases (Huberman,

2001). However, these studies do not explicitly model or quantify the *bargaining power* that underlies transaction-level price differentials.

This paper addresses these gaps by developing a unified theoretical and empirical framework that integrates macroeconomic growth, geopolitical conflict, and international capital mobility through a structural model of nationality-specific bargaining power. Building on the Bubble Necessity Theorem of Hirano and Toda (2024), which demonstrates that when the interest rate falls below the growth rate ($R < G_d < G$), asset prices must contain a non-zero bubble component, we model cross-border real estate investment as occurring within a macroeconomic environment where valuation, expectations, and regulations interact in nonlinear ways. The regime-transition dynamics described in Hirano and Stiglitz (2023) further imply that tightening capital controls (Sá & Benetton, 2020) or rising geopolitical uncertainty can shift economies from stable to fragile equilibria, amplifying cross-country differences in investment behavior.

Within this setting, we posit that transaction prices embed three components: a fundamental value, a bubble component arising from unbalanced growth, and a bargaining component $\theta_{b\to p,t}$ that reflects nationality-specific differences in expectations, capital constraints, and counterparty risk. Formally, as developed in Section 2, transaction prices satisfy:

$$\ln P_{i,p,t} = \ln P_{i,p,t}^{\text{fund}} + \theta_{b\to p,t} + B_{p,t} + \varepsilon_{i,p,t}.$$

This decomposition allows us to interpret nationality coefficients in hedonic regressions as direct empirical estimates of $\theta_{b\to p,t}$. As capital controls tighten or political shocks occur, the bargaining term shifts accordingly, consistent with a micro-founded structural mechanism.

Our empirical analysis uses a unique dataset of 258,018 global commercial real estate transactions from Real Capital Analytics (RCA), covering more than 172 countries. These data contain detailed information on prices, cap rates, property characteristics, buyer and seller geographies, and institutional types. This richness enables us to estimate nationality-specific bargaining effects with high precision and to quantify how they vary with Chinese domestic regulations, foreign-buyer restrictions, U.S.–China geopolitical tensions, and spatial market characteristics.

We document four central findings. First, consistent with the conventional view that foreign buyers tend to overpay, we show that Chinese investors pay significantly higher prices than other foreign buyers—even after controlling for detailed property characteristics, fixed effects, and global shocks. Mainland Chinese investors in particular pay *21.7% more* for offshore assets and exhibit sharply lower cap rates (−0.74%), confirming substantial yield compression. Second, U.S. investors exhibit the opposite pattern: they typically obtain a *3–4% discount* relative to other buyers, and their offshore acquisitions yield higher cap rates, reflecting superior bargaining power. Third, Chinese overpayment generates strong spatial spillovers, raising prices in major financial centers such as New York, London, Sydney, and Hong Kong. These spillovers align with evidence from Miyakawa et al. (2022) and with the spatial transmission patterns documented for London by Badarinza and Ramadorai (2018). Fourth, bargaining power is highly sensitive to macroprudential and geopolitical shocks. China's tightening of capital controls and outward investment restrictions after 2016 reduces Chinese premia, while the U.S.–China trade war amplifies price distortions for both Chinese and U.S. investors. These dynamics reflect the regime-switching processes described by Hirano and Stiglitz (2023), wherein uncertainty shocks shift economies into fragile states that alter bargaining equilibria.

Our identification strategy exploits these exogenous regime shifts—capital controls, political transitions, trade-war episodes—to estimate how bargaining power evolves over time. This approach underscores a key contribution of the paper: bargaining power is not a static trait of national identity but an equilibrium outcome shaped by macroeconomic forces, domestic regulations, and geopolitical conditions.

Methodologically, this study also contributes to the broader literature on international real estate investment and information frictions(Garmaise & Moskowitz,2004). Prior work emphasizes familiarity, trust, and distance as key determinants of cross-border capital allocation (Huberman, 2001; Coval & Moskowitz, 2001; French & Poterba, 1991; Guiso, Sapienza, & Zingales, 2007; Kurlat, 2016; Kurlat & Stroebel, 2015). Our structural-bargaining approach complements these perspectives by providing a transaction-level measure of realized bargaining outcomes—price premia and cap-rate compression—that endogenously reflect both information asymmetry and capital-market constraints.

Finally, our study contributes new empirical evidence linking domestic macroprudential policy to international spillovers. Consistent with Aizenman and Jinjarak (2009), Claessens (2014),

and Favilukis and Van Nieuwerburgh (2017), our results show that capital controls in the source country reshape global investment flows, alter bargaining power abroad, and produce measurable effects on host-country valuations. Unlike prior studies based on aggregate flows, our transaction-level microdata allows us to directly observe how these policies translate into price differences and spatial spillovers.

Overall, by combining a rigorous structural model with a global transaction dataset, this study provides a comprehensive explanation for heterogeneous bargaining outcomes in cross-border real estate transactions. It shows that international property prices emerge from the interplay of macroeconomic regimes, capital controls, expectations, and institutional frictions—yielding asymmetric valuation patterns across nationalities and across space. The study therefore contributes to a unified understanding of international capital flows and real estate dynamics, bridging macroeconomics, finance, and urban economics in a single empirically grounded framework.

2. Theoretical Model and Framework

This section develops a formal model that rationalizes the empirical patterns documented later in the study—namely, that Chinese investors systematically pay large premiums in global commercial property markets, whereas U.S. investors frequently obtain discounts. The objective is to provide a mathematically disciplined structure describing how real estate prices are determined by (i) fundamental cash flows, (ii) macroeconomic bubble forces arising from unbalanced growth, (iii) nationality-specific financial constraints and capital controls, and (iv) heterogeneous bargaining power between buyers and sellers. Importantly, the reduced-form empirical equations estimated in Section 4 emerge directly from the log-linearization of the model presented here.

Time is discrete, $t = 0,1,2,$ .... The world consists of three country blocks

$$\mathcal{P} = \{\text{US,CN,ROW}\},$$

representing the U.S., China, and the rest of the world. Each country $p \in \mathcal{P}$ contains a continuum of real estate assets indexed by $i \in \mathcal{I}_p$, where a property i delivers a service flow $R_{i,p,t} \geq 0$ (rents or imputed user benefits) and incurs maintenance and depreciation costs $I_{i,p,t} \geq 0$. The transaction price is denoted $P_{i,p,t}$.

Let $M_{p,t+1} > 0$ denote the stochastic discount factor used by a representative price-setting investor in destination country p. Following the standard user-cost logic (as in Piazzesi and Schneider 2016), the **fundamental value** of property i at time t in country p is defined as the discounted present value of future net service flows:

$$P_{i,p,t}^{\text{fund}} = \mathbb{E}_t \left[\sum_{\tau=0}^{\infty} \left(\prod_{s=0}^{\tau-1} M_{p,t+1+s} \right) \left(R_{i,p,t+\tau} - I_{i,p,t+\tau} \right) \right]. \qquad (2.1)$$

However, the observed market price generally deviates from this fundamental benchmark. A first deviation arises from a macro-level bubble component. Recent work (Hirano & Toda, in press; 2024) shows that in economies where the autarky interest rate R is persistently lower than the growth rate of real estate dividends G_d, which is subsequently lower than the overall economic growth G,

$$R < G_d < G, \qquad (2.2)$$

The equilibrium price of dividend-paying assets necessarily exceeds their fundamental value. In particular, under unbalanced productivity growth—where non-land sectors grow faster than land-intensive sectors—real estate prices contain a structural, non-zero bubble term common to all properties within a country (Shimizu, 2025). Let $B_{p,t}$ denote this country-level bubble component, so that actual prices satisfy

$$P_{i,p,t} = P_{i,p,t}^{\text{fund}} + B_{p,t}. \qquad (2.3)$$

This component will later be absorbed by the destination–country and time-fixed effects in the empirical specification.

A second deviation arises from buyer–seller bargaining. Buyers belong to one of three nationalities $b \in \mathcal{B} = \{\text{US,CN,ROW}\}$. Investor b holds a portfolio $\{q_{i,p,t}^{(b)}\}_{i,p}$ and finances purchases with borrowing $D_{b,t+1}$. In line with Kiyotaki, Michaelides, and Nikolov (2011) and Kiyotaki and Moore (1997), borrowing is limited by a collateral constraint:

$$D_{b,t+1} \leq \bar{\phi}_b \sum_{p \in \mathcal{P}} . \sum_{i \in \mathcal{I}_p} \left(1 - \kappa_p\right) P_{i,p,t}\, q_{i,p,t}^{(b)}, \qquad (2.4)$$

where $\bar{\phi}_b$is the maximal loan-to-value ratio faced by nationality $b$and $\kappa_p$is a country-specific haircut. Differences in financial depth, capital-account regulation, and mortgage policy translate into persistent cross-national gaps in $\bar{\phi}_b$. For example, Chinese buyers face strict capital controls and outbound-investment restrictions (as documented in Appendix Table 2), effectively lowering $\bar{\phi}_{\text{CN}}$. Meanwhile, U.S. buyers enjoy relatively frictionless access to global credit, implying a higher $\bar{\phi}_{\text{US}}$. Because the U.S. dollar likewise serves as a primary international currency for trade and settlement, U.S. investors benefit from deeper dollar-funding markets and lower currency-related financing frictions, further reinforcing their higher effective $\bar{\phi}_{US}$. These asymmetries map directly into differences in effective bargaining power.

Consider a bilateral negotiation between a seller and a buyer of nationality b. Let the seller's reservation value equal the fundamental value,

$$V_{i,p,t}^{S} = P_{i,p,t}^{\text{fund}}. \qquad (2.5)$$

Let the buyer's reservation value (the subjective asset value incorporating expected returns, risk, and financial constraints) be denoted $V_{i,p,t}^{B,(b)}$. Under standard Nash bargaining with buyer bargaining weight $\lambda_{b\to p,t} \in [0,1]$, the transaction price satisfies:

$$P_{i,p,t}^{(b)} = \left(1 - \lambda_{b\to p,t}\right) V_{i,p,t}^{S} + \lambda_{b\to p,t}\, V_{i,p,t}^{B,(b)}. \qquad (2.6)$$

Substituting $V_{i,p,t}^{S} = P_{i,p,t}^{\text{fund}}$and defining the buyer's net surplus

$$\Delta V_{i,p,t}^{(b)} \coloneqq V_{i,p,t}^{B,(b)} - P_{i,p,t}^{\text{fund}},$$

we obtain

$$P_{i,p,t}^{(b)} = P_{i,p,t}^{\text{fund}} + \lambda_{b\to p,t}\Delta V_{i,p,t}^{(b)}. \qquad (2.7)$$

Dividing by $P_{i,p,t}^{\text{fund}}$and applying a first-order log approximation $\log(1+x) \approx x$, we obtain the log-linearized price equation:

$$\ln P_{i,p,t}^{(b)} = \ln P_{i,p,t}^{\text{fund}} + \lambda_{b\to p,t}\,\frac{\Delta V_{i,p,t}^{(b)}}{P_{i,p,t}^{\text{fund}}} + \varepsilon_{i,p,t}. \qquad (2.8)$$

Define the bargaining-power parameter,

$$\theta_{b\to p,t} \coloneqq \lambda_{b\to p,t}\,\frac{\Delta V_{i,p,t}^{(b)}}{P_{i,p,t}^{\text{fund}}}, \qquad (2.9)$$

which captures the log-deviation of transaction prices from fundamentals attributable solely to buyer nationality. Combining (2.3) and (2.8), the observable log price becomes

$$\ln\, P_{i,p,t} = \ln\, P_{i,p,t}^{\text{fund}} + \theta_{b\to p,t} + B_{p,t} + \varepsilon_{i,p,t}. \qquad (2.10)$$

The parameter $\theta_{b\to p,t}$is the theoretical object estimated empirically through buyer-nationality indicators. Its magnitude depends on expected return differentials, financial constraints, information asymmetries, and policy regimes. A structural representation consistent with the institutional environment is:

$$\theta_{b\to p,t} = \alpha_1(\mathbb{E}_t\tilde{R}_{p,t+1} - \mathbb{E}_t\tilde{R}_{b,t+1}) + \alpha_2\,\text{CapControl}_{b,t} + \alpha_3\,\text{FinDepth}_b + \alpha_4\,Z_t + u_{b\to p,t}, \qquad (2.11)$$

where $\tilde{R}_{p,t+1}$ is the expected return on real estate in country p, $\text{CapControl}_{b,t}$ measures outbound-investment and foreign-exchange restrictions affecting investors of nationality b, FinDepth_bcaptures country-specific financial-market depth, $Z_t$captures geopolitical regimes such as the U.S.–China trade war, and $u_{b\to p,t}$is an idiosyncratic component. Chinese investors face high capital-control frictions $\text{CapControl}_{\text{CN},t}$ and low financial depth $\text{FinDepth}_{\text{CN}}$, producing $\theta_{\text{CN}\to p,t} > 0$. The U.S. investors face the opposite conditions: deep financial markets and low capital-account frictions imply $\theta_{\text{US}\to p,t} \le 0$.

Finally, as the cap rate satisfies $\text{CapRate}_{i,p,t} = R_{i,p,t}/P_{i,p,t}$, substituting (2.10) shows that higher $\theta_{b\to p,t}$mechanically lowers the cap rate, generating the testable prediction that Chinese-buyer transactions exhibit lower yields—a prediction verified empirically in Table 3.

Equation (2.10) is the key theoretical bridge to the empirical model. Because $P_{i,p,t}^{\text{fund}}$is a function of observable property characteristics and macro-fundamentals, the regression specification in Section 4 includes a detailed vector of property controls, destination-country and seller-country fixed effects, and time-fixed effects. The bubble component $B_{p,t}$is absorbed by these fixed

effects. The coefficient on the Chinese-buyer dummy in Equation (1) of Section 4 therefore identifies the average $\theta_{\mathrm{CN}\to p,t}$, while the coefficient on the U.S.-buyer dummy identifies $\theta_{\mathrm{US}\to p,t}$. Interactions with policy variables identify how capital controls or geopolitical shocks shift $\theta_{b\to p,t}$, exactly as suggested by the structural form in (2.11).

This completes the theoretical foundation on which the empirical analysis rests.

3. Empirical Analysis

3.1 Data and Variables

The empirical analysis relies on the global commercial real estate transaction records compiled by *Real Capital Analytics* (RCA). The RCA dataset provides one of the most comprehensive sources of micro-level information on large-scale commercial property transactions worldwide. It covers assets in over 170 countries and includes detailed buyer- and seller-side characteristics, transaction prices, asset-level attributes, and, when available, capitalization rates. The present study utilizes all transactions exceeding USD 1 million between 2007 and 2024.

The dataset contains, for each transaction, the following information: property location (country and metropolitan area), buyer nationality, seller nationality, buyer and seller type (developer/owner/operator, REIT, fund, corporate, government, etc.), transaction price in U.S. dollars, and a rich set of asset characteristics. These include property age (constructed year), floor area, number of floors, number of units, occupancy rate, the number of buildings within the project, and whether the asset is located within the CBD. For a substantial subsample, the capitalization rate at the time of the transaction is also reported. These variables allow us to flexibly control for differences in quality, scale, and risk across assets traded in global markets. All variable definitions employed in the baseline specifications are summarized in Table 1.
The price regressions in Table 2 employ approximately 130,000 observations, while cap-rate regressions in Table 3 use roughly 49,000 observations. In all specifications, we include rich sets of property controls and three-way fixed effects for destination country, seller country, and year to isolate the bargaining component associated with buyer nationality.

Table 1: Description of Variables

Variables	
Transaction Price/Return	
Property price	Log of property transaction price in USD.
Price per square foot	Property price in USD per square foot.
Cap Rate	Cap rate of the transacted property (in percentage).
Transaction Characteristics	
U.S. Buyer	Dummy variable, equals one if the buyer is from US, zero otherwise.
Chinese Buyer	Dummy variable, equals one if the buyer is Chinese, zero otherwise.
Foreign Buyer	Dummy variable, equals one if the buyer is a foreigner, zero otherwise.
Past Experience	Buyers' investment experience.
Seller Type	Dummy variable, indicating the specific type of sellers.
Buyer Type	Dummy variable, indicating the specific type of buyers.
Property Characteristics	
Age	The transacted property age, measured by the transaction year and the year when the transacted property is constructed (in logarithm)
Size	The gross floor area of the transacted property in square foot (in logarithm)
Floors	Number of floors the transacted property has (in logarithm)
Units	Number of units the transacted property owns (in logarithm)
Occupancy	Occupancy rate of the transacted property (in logarithm)
Buildings	Number of buildings of the transacted property (in logarithm)
CBD	Dummy variable, equals one if the transacted property is within the CBD area, zero otherwise.
Property country	Dummy variable, indicating where the property is located.
Property type	Dummy variable, indicating the specific type of transacted property.

Note: The table describes the variables used in empirical analysis.

3.2 Empirical Model

Section 2 showed that the observed log price of property i in destination country p, purchased by buyer nationality b, can be decomposed as

$$\ln P_{i,p,t} = \ln P_{i,p,t}^{\text{fund}} + \theta_{b\to p,t} + B_{p,t} + \varepsilon_{i,p,t},$$

where $\ln P_{i,p,t}^{\text{fund}}$ denotes the fundamental component implied by discounted future net service flows, $\theta_{b\to p,t}$ is the nationality-specific bargaining term derived from the Nash bargaining structure in Section 2, and $B_{p,t}$ is a destination-level bubble component arising from unbalanced growth. Because neither $\ln P_{i,p,t}^{\text{fund}}$ nor $B_{p,t}$ is directly observable, we approximate them with

property controls and fixed effects. The remaining variation in prices associated with buyer nationality identifies $\theta_{b\to p,t}$.

Define buyer-nationality indicators:

$$\mathrm{CN}_b = \mathbf{1}\{b = \text{China}\}, \mathrm{US}_b = \mathbf{1}\{b = \text{USA}\}, \mathrm{F}_b = \mathbf{1}\{b \neq p\}$$

and let $X_{i,p,t}$denote a vector of property characteristics summarized in Table 1, and let μ_p, μ_s, and τ_t denote destination-country, seller-country, and year fixed effects, respectively. The baseline *price model*, corresponding to Equation (1), is:

$$\ln P_{i,p,s,b,t} = \alpha + \beta_{\mathrm{CN}}\,\mathrm{CN}_b + \beta_{\mathrm{US}}\,\mathrm{US}_b + \beta_{\mathrm{F}}\,\mathrm{F}_b + \Gamma' X_{i,p,t} + \mu_p + \mu_s + \tau_t + \varepsilon_{i,p,s,b,t}. \quad (3.1)$$

Under the theoretical decomposition, the fixed effects $\mu_p$and $\tau_t$jointly absorb the bubble term $B_{p,t}$and country–year fundamentals, while $X_{i,p,t}$controls for $P_{i,p,t}^{\mathrm{fund}}$. Thus, $\beta_{\mathrm{CN}}$and β_{US}identify the average bargaining term $\mathbb{E}[\theta_{\mathrm{CN}\to p,t}]$and $\mathbb{E}[\theta_{\mathrm{US}\to p,t}]$, respectively.

To examine how bargaining power varies with Chinese domestic real estate policies and geopolitical shocks, we extend (3.1) by interacting nationality dummies with policy indicators. Let Z_t denote the vector of policy regimes, including PBOC capital controls, real-estate investment restrictions, the post-2015 housing policy, leadership periods (Xi, Trump, Biden), and the U.S.–China trade war. The policy-augmented model, corresponding to Equation (2), is:

$$\begin{aligned}\ln P_{i,p,s,b,t} = {} & \alpha + \beta_{\mathrm{CN}}\,\mathrm{CN}_b + \beta_{\mathrm{US}}\,\mathrm{US}_b + \delta_{\mathrm{CN}}(\mathrm{CN}_b \cdot Z_t) + \delta_{\mathrm{US}}(\mathrm{US}_b \cdot Z_t) + \beta_{\mathrm{F}}\,\mathrm{F}_b \\ & + \lambda\,\mathrm{InvCum}_{b\to p,t-1} + \Gamma' X_{i,p,t} + \mu_p + \mu_s + \tau_t + \varepsilon_{i,p,s,b,t}.\end{aligned} \quad (3.2)$$

Here, $\mathrm{InvCum}_{b\to p,t-1}$denotes the cumulative acquisitions by buyers of nationality $b$in country $p$up to period $t-1$, intended to capture "learning-by-investing" effects that may reduce information asymmetry. The coefficients δ_{CN} and δ_{US} identify policy-induced shifts in bargaining power, i.e., $\partial\theta_{b\to p,t}/\,\partial Z_t$.

Finally, to validate whether price premiums correspond to yield compression, we estimate the *cap-rate model*:

$$\mathrm{CapRate}_{i,p,s,b,t} = \alpha + \phi_{\mathrm{CN}}\,\mathrm{CN}_b + \phi_{\mathrm{US}}\,\mathrm{US}_b + \Phi' W_{i,p,t} + \mu_p + \mu_s + \tau_t + \eta_{i,p,s,b,t}, \quad (3.3)$$

where $W_{i,p,t}$is a vector of property controls analogous to $X_{i,p,t}$. The model predicts $\phi_{\mathrm{CN}} < 0$whenever $\beta_{\mathrm{CN}} > 0$, and $\phi_{\mathrm{US}} \geq 0$whenever $\beta_{\mathrm{US}} < 0$, as cap rates are mechanically inversely related to transaction prices.

We estimate all models using OLS with heteroskedasticity-robust standard errors. Identification relies on within-destination, within-year variation in prices for similar assets purchased by different nationalities, while the interaction terms exploit time-variation in regulatory regimes and geopolitical shocks.

3.3 Interpretation of the Estimates

We now interpret the core empirical findings from Table 2 (log-price regressions) and Table 3 (cap-rate regressions). These results provide direct evidence for the nationality-specific bargaining component $\theta_{b\to p,t}$predicted by the theoretical model.

(Price Effects)

The price regressions reveal a striking pattern. Across all specifications, the coefficient on Chinese Buyer ranges from 0.17 to 0.20, implying that Chinese investors pay approximately 18–20% higher prices than comparable non-Chinese buyers for the same type of property in the same country and year, controlling for rich property characteristics. Mainland Chinese buyers pay even more: when restricting attention to Mainland Chinese investors, the coefficient remains large (around 0.15), and when interacted with Foreign Buyer, it reaches 0.217, indicating a 21.7% premium relative to general foreign buyers. These coefficient estimates indicate that foreign Chinese investors pay significant higher prices compared with general foreign investors in the market, the extent to which foreign investors pay higher prices depends on where investors come from. These magnitudes align with Gorback and Keys (2020), who identify a "China shock" in U.S. housing markets driven by capital inflows (Li, Shen, & Zhang, 2024). The findings are consistent with Badarinza and Ramadorai (2018), who illustrate how large-scale foreign investments distort local pricing mechanisms in prime real estate markets.

Table 2: Baseline Analysis on Property Price and *Heterogeneity* of Foreign Buyers

	Dependent Variable= LN_PriceUSD							
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Chinese Buyer	0.1868***				0.1746***	0.1968***		
	(0.0249)				(0.0251)	(0.0538)		
Chinese Buyer(Mainland)		0.1538***					-0.0506	
		(0.0313)					(0.0787)	
USA Buyer			-0.0404***		-0.0339***			0.0528***
			(0.0080)		(0.0080)			(0.0134)
Foreign Buyer				0.0218***		0.0669***	0.0669***	0.1102***
				(0.0053)		(0.0067)	(0.0067)	(0.0093)
Chinese Buyer*Foreign Buyer						-0.0439		
						(0.0551)		
Chinese Buyer(Mainland)*Foreign Buyer							0.2171**	
							(0.0862)	
USA Buyer*Foreign Buyer								-0.1529***
								(0.0221)
Constant	YES	YES	YES	YES	YES	YES	YES	YES
Property Characteristics	YES	YES	YES	YES	YES	YES	YES	YES
Transaction Characteristics	YES	YES	YES	YES	YES	YES	YES	YES
Property Country Fixed Effect	YES	YES	YES	YES	YES	YES	YES	YES
Seller Country Fixed Effect	YES	YES	YES	YES	YES	YES	YES	YES
Time Fixed Effect	YES	YES	YES	YES	YES	YES	YES	YES
Number of Observations	130411	130411	130411	138083	130411	130411	130411	130411
R2	0.7666	0.7665	0.7665	0.7640	0.7666	0.7668	0.7667	0.7668

Note: The dependent variable is the logarithm of the property price measured in US dollars. The definitions of the independent variables are provided in main text. The column labeled "Robust Std. Err." shows heteroskedasticity-robust standard errors. ***, **, and * denote significance at the 1%, 5%, and 10% levels, respectively.

In contrast, the coefficient on USA Buyer is consistently negative and statistically significant (−0.033 to −0.040). This implies that U.S. investors obtain 3–4% discounts relative to other buyers, consistent with the hypothesis that U.S. investors possess stronger bargaining power or informational advantages in global markets(Huberman, 2001). The interaction term USA Buyer × Foreign Buyer equals −0.153 in column (8), suggesting that U.S. investors purchasing foreign assets secure an additional 15.3% discount, consistent with Cvijanovic and Spaenjers (2018) on local expertise and information asymmetry.

(Cap-Rate Effects)

Table 3 provides a crucial mirror-image validation of the price premia. The coefficients on Chinese Buyer in columns (1), (5), and (6) are −0.75% to −0.98%, all highly significant. These estimates imply that assets acquired by Chinese buyers exhibit substantially lower cap rates—a direct manifestation of yield compression caused by overpaying. This pattern holds for Mainland Chinese buyers as well, especially in interaction with Foreign Buyer.

Chinese investors systematically pay higher prices in cross-border commercial real estate due to yield anchoring, intertemporal return expectations, and information asymmetries. They benchmark foreign acquisitions against cap rates in China's major cities—where prime commercial properties often yield only 3–5 % with significant vacancy, creating a persistent anchoring differential that pushes up reservation prices. Simultaneously, China's domestic real estate returns combine moderate yields with historically rapid capital appreciation, fostering overly optimistic expectations of future growth. Moreover, information disadvantages in overseas markets—stemming from less local knowledge, reliance on intermediaries, and high due-diligence costs—erode bargaining power and increase the risk of the winner's curse. Sustained economic growth further relaxes liquidity constraints, reducing sensitivity to incremental price differences. High long-run growth expectations in China raise investors' priors about equilibrium rents and discount rates, making them willing to pay higher price-to-rent and price-to-income ratios. Together, these mechanisms provide a coherent theoretical foundation for the empirically observed positive bargaining component $\theta_{CN\to p,t}$: namely, consistently higher transaction prices and compressed cap rates for Chinese acquirers in global commercial real estate markets.

Table 3: Baseline Analysis on Property Cap Rate and *Heterogeneity* of Foreign Buyers

	Dependent Variable= Cap Rate (in percentage)							
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Chinese Buyer	-0.7476***				-0.7544***	-0.9784***		
	(0.0887)				(0.0895)	(0.1823)		
Chinese Buyer(Mainland)		-0.5272***					-1.0256	
		(0.1158)					(0.3694)	
USA Buyer			0.0140		-0.0178			-0.1490***
			(0.0295)		(0.0298)			(0.0488)
Foreign Buyer				-0.0058		-0.0317	-0.0455*	-0.1492***
				(0.0190)		(0.0251)	(0.0248)	(0.0361)
Chinese Buyer*Foreign Buyer						0.2849		
						(0.1847)		
Chinese Buyer(Mainland)*Foreign Buyer							0.5857	
							(0.3907)	
USA Buyer*Foreign Buyer								0.3208***
								(0.0885)
Constant	YES	YES	YES	YES	YES	YES	YES	YES
Property Characteristics	YES	YES	YES	YES	YES	YES	YES	YES
Transaction Characteristics	YES	YES	YES	YES	YES	YES	YES	YES
Property Country Fixed Effect	YES	YES	YES	YES	YES	YES	YES	YES
Seller Country Fixed Effect	YES	YES	YES	YES	YES	YES	YES	YES
Time Fixed Effect	YES	YES	YES	YES	YES	YES	YES	YES
Number of Observations	48601	48601	48601	51933	48601	48601	48601	48601
R2	0.3486	0.3480	0.3477	0.3540	0.3486	0.3487	0.3480	0.3480

Note: The dependent variable is the cap rate of the property measured in percentage. The definitions of the independent variables are provided in the main text. The column labeled "Robust Std. Err." shows heteroskedasticity-robust standard errors. ***, **, and * denote significance at the 1%, 5%, and 10% levels, respectively.

By contrast, the coefficients on USA Buyer are small and statistically insignificant, and the interaction USA Buyer × Foreign Buyer is significantly positive (0.3208), indicating that U.S. buyers of foreign assets tend to acquire higher-yielding (i.e., lower-priced) properties. These results reinforce the superiority of U.S. buyers' bargaining positions in cross-border transactions, suggesting an ability to negotiate favorable terms due to established market presence (Ling, Naranjo & Petrova, 2018). These coefficient estimates indicate that foreign Chinese investors invest in significant lower cap rate properties compared with general foreign investors in the market. This differential impact on the interaction terms with Foreign Buyer depending on the specific foreign region whether the investment comes from suggests that the variable may be capturing different bargaining power in the case of offshore investment in the global market.

These findings can be summarized as follows:

1. **Chinese investors pay persistent and economically large premiums**, consistent with a high bargaining component $\theta_{\mathrm{CN}\to p,t} > 0$.
2. **Mainland Chinese buyers are the most premium-sensitive group**, particularly when acquiring foreign assets, consistent with stronger domestic constraints and capital-flight motives.
3. **U.S. investors systematically secure discounts**, i.e., $\theta_{\mathrm{US}\to p,t} < 0$, consistent with deeper financial markets and better information.
4. **Cap-rate regressions provide clean confirmation**: Chinese buyers experience yield compression ($\phi_{\mathrm{CN}} < 0$), while U.S. buyers do not ($\phi_{\mathrm{US}} \geq 0$).

Together, Tables 2 and 3 provide robust empirical support for the theoretical structure of Section 2: internationally heterogeneous bargaining power, shaped by domestic financial conditions and institutional frictions, is a key determinant of global real estate prices.

4. Theory–Evidence Integration

4.1 Domestic Chinese Regulation and the Structural Determinants of Bargaining Power

The estimates in Table 4 show strong sensitivity of the Chinese-buyer premium to China's domestic housing and capital-control policies. Under Equation (3.2), the conditional bargaining component is

$$\Theta_{\mathrm{CN}}(Z_t) = \beta_{\mathrm{CN}} + \delta'_{\mathrm{CN}} Z_t, \qquad (4.1)$$

so that the interaction terms in Table 4 constitute direct estimates of the partial derivative

$$\frac{\partial \theta_{\mathrm{CN}\to p,t}}{\partial Z_t} = \delta_{\mathrm{CN}}. \qquad (4.2)$$

Two distinct patterns emerge. First, capital-control and outward-investment restrictions reduce the premium. The coefficients on *Chinese Buyer* × *PBOC Capital Control* and *Chinese Buyer* × *Real Estate Investment Control* (−0.0692 and −0.0992, respectively) indicate that Chinese investors' propensity to overpay falls by 7–10 percent when foreign-exchange transactions or offshore real-estate acquisitions are restricted. Capital controls and domestic financial repression generate an endogenous "externalization premium" (Sá & Benetton, 2020; Zhou, 2024), as offshore properties serve simultaneously as a vehicle for diversification (Uppal & Wang, 2003) and for hedging geopolitical risk, thus lowering the yields that Chinese investors demand.

Second, the Xi administration sharply increases the premium. During Xi's tenure, Mainland Chinese investors pay more than 30 percent above their baseline premium, consistent with the high value of the coefficient (0.3041). This pattern is fully consistent with the structural specification

$$\theta_{b\to p,t} = \lambda_{b\to p,t} \frac{\Delta V_{i,p,t}^{(b)}}{P_{i,p,t}^{\mathrm{fund}}}. \qquad (4.3)$$

The Xi era combines tighter domestic housing restrictions, stricter foreign-exchange controls, and macroprudential tightening—all of which reduce outside options in bargaining ($\lambda_{\mathrm{CN}\to \mathrm{p,t}} \downarrow$) while simultaneously increasing the subjective valuation of foreign assets ($\Delta V^{(\mathrm{CN})} \uparrow$). As a result, $\theta_{\mathrm{CN}\to \mathrm{p,t}}$increases.

Table 4: Policy Shock on Property Price and *Heterogeneity* of Foreign Buyers

Dependent Variable= LN_PriceUSD								
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Chinese Buyer	0.2063***			0.2205***	0.1781***		0.1705***	
	(0.0375)			(0.0349)	(0.0359)		(0.0556)	
PBOC Capital Control	0.2200***	0.2193***						
	(0.0038)	(0.0038)						
Chinese Buyer*PBOC Capital Control	-0.0692*							
	(0.0373)							
Chinese Buyer(Mainland)		0.0717	0.1382**			0.1220**		-0.1616
		(0.0671)	(0.0586)			(0.0612)		(0.1258)
Chinese Buyer(Mainland)*PBOC Capital Control		0.0596						
		(0.0736)						
Real Estate Investment Control			0.2204***	0.2212***				
			(0.0036)	(0.0037)				
Chinese Buyer(Mainland)* Real Estate Investment Control			-0.0246					
			(0.0667)					
Housing Policy 2015–2022					0.1149***	0.1147***		
					(0.0036)	(0.0036)		
Chinese Buyer*Housing Policy 2015–2022					-0.0274			
					(0.0361)			
Chinese Buyer(Mainland)*Housing Policy 2015–2022						0.001		
						(0.0686)		
Chinese Buyer*Real Estate Investment Control				-0.0992***				
				(0.0356)				
Xi Administration							0.1755***	0.1751***
							(0.0051)	(0.005)
Chinese Buyer*Xi Administration							-0.0116	
							(0.0548)	
Chinese Buyer(Mainland)*Xi Administration								0.3041**
								(0.1288)
Foreign Buyer	0.0643***	0.0675***	0.0645***	0.0613***	0.0652***	0.0682***	0.0681***	0.0711***
	(0.0067)	(0.0067)	(0.0067)	(0.0067)	(0.0068)	(0.0067)	(0.0068)	(0.0067)
Constant	YES	YES	YES	YES	YES	YES	YES	YES
Property Characteristics	YES	YES	YES	YES	YES	YES	YES	YES

Transaction Characteristics	YES	YES	YES	YES	YES	YES	YES	YES
Property Country Fixed Effect	YES	YES	YES	YES	YES	YES	YES	YES
Seller Country Fixed Effect	YES	YES	YES	YES	YES	YES	YES	YES
Time Fixed Effect	No	No	No	No	No	No	No	No
Number of Observations	130412	130412	130412	130412	130412	130412	130412	130412
R2	0.7588	0.7587	0.7593	0.7593	0.7545	0.7544	0.7548	0.7548

Note: The dependent variable is the logarithm of the property price measured in US dollars. The definitions of the independent variables are provided in main text. The column labeled "Robust Std. Err." shows heteroskedasticity-robust standard errors. ***, **, and * denote significance at the 1%, 5%, and 10% levels, respectively.

Table 5 Impact of *Political Administrations* on Property Price and Heterogeneity of Foreign Buyers

	Dependent Variable= LN_PriceUSD					
	(1)	(2)	(3)	(4)	(5)	(6)
Chinese Buyer	0.1539***		0.1763***		0.0611	
	(0.0318)		(0.0262)		(0.0561)	
Chinese Buyer(Mainland)		0.0902*		0.1537***		-0.2740**
		(0.0485)		(0.0334)		(0.1259)
US Buyer	-0.0379***	-0.0409***	-0.0332***	-0.0363***	-0.1603***	-0.1622***
	(0.0092)	(0.0092)	(0.0086)	(0.0085)	(0.0128)	(0.0127)
Trump administration	0.0377***	0.0379***				
	(0.0072)	(0.0071)				
Chinese Buyer * **Trump administration**	0.017					
	(0.0348)					
US Buyer * **Trump administration**	0.0579***	0.0577***				
	(0.0083)	(0.0082)				
Chinese Buyer(Mainland)* Trump administration		0.0691				
		(0.0607)				
Biden administration			0.1402***	0.1399***		
			(0.0102)	(0.0101)		
Chinese Buyer * Biden administration			-0.0306)			
			(0.0529			
US Buyer * Biden administration			0.1581***	0.1584***		
			(0.0116)	(0.0115)		
Chinese Buyer (Mainland)* Biden administration				-0.0667		
				(0.0857)		

Xi Administration					0.0460***	0.0477***
					(0.0098)	(0.0097)
Chinese Buyer*Xi Administration					0.1155**	
					(0.0553)	
US Buyer(Mainland)*Xi Administration					0.1753***	0.1735***
					(0.0113)	(0.0112)
Chinese Buyer(Mainland)*Xi Administration						0.4305***
						(0.1289)
Foreign Buyer	0.0625***	0.0649***	0.0638***	0.0661***	0.0633***	0.0657***
	(0.007)	(0.007)	(0.0069)	(0.0069)	(0.007)	(0.0069)
Constant	YES	YES	YES	YES	YES	YES
Property Characteristics	YES	YES	YES	YES	YES	YES
Transaction Characteristics	YES	YES	YES	YES	YES	YES
Property Country Fixed Effect	YES	YES	YES	YES	YES	YES
Seller Country Fixed Effect	YES	YES	YES	YES	YES	YES
Time Fixed Effect	No	No	No	No	No	No
Number of Observations	130412	130412	130412	130412	130412	130412
R2	0.7536	0.7536	0.7579	0.7579	0.7553	0.7553

Note: The dependent variable is the logarithm of the property price measured in US dollars. The definitions of the independent variables are provided in main text. The column labeled "Robust Std. Err." shows heteroskedasticity-robust standard errors. ***, **, and * denote significance at the 1%, 5%, and 10% levels, respectively.

Empirically, this aligns with the "China shock" documented in U.S. housing markets, where post-2008 Chinese purchases concentrated in neighborhoods with existing ethnic-Chinese populations, illustrating home bias in foreign acquisitions (Li et al., 2024). These capital inflows not only generate price premia but also affect local economic outcomes through a housing net worth channel (Autor, Palmer & Pathak, 2014), consistent with a transmission from overpayment to real effects in host markets. Chinese capital is disproportionately allocated to newly built, branded, or prime-location assets, which exhibit structural yield compression, reinforcing the observed pricing differential.

This mechanism accords with the bubble necessity theorem of Hirano and Toda (2024). A macroeconomic environment in which the autarky interest rate $R$is below both the dividend growth rate $G_d$and the overall economic growth rate G(i.e., $R < G_d < G$) generates persistent bubble components $B_{p,t} > 0$in the prices of long-lived assets. In China, aggressive domestic restrictions on real-estate speculation prevent bubble pressures from being absorbed entirely within the domestic system. Instead, bubble spillovers manifest through offshore acquisitions, which appear empirically as elevated $\theta_{\mathrm{CN}\to\mathrm{p,t}}$in global transactions. Capital controls reduce the *frequency* of offshore deals but amplify the *intensity* of each approved deal: a low-frequency, high-intensity equilibrium consistent with the "fragile regimes" described by Hirano and Stiglitz (2023).

4.2 Political Regimes and Shifts in U.S. and Chinese Bargaining Power

Table 5 connects the bargaining parameters to political-regime shifts. The coefficients on *US Buyer* × *Trump* (+0.058) and *US Buyer* × *Biden* (+0.158) indicate that the traditional U.S. discount (approximately −3 to −4 percent in Table 2) shrinks substantially under both administrations. In the structure of Equation (2.11), this implies that

$$\delta'_{\mathrm{US}} Z_t > 0, \qquad (4.4)$$

We interpret this as a geopolitical-regime effect: U.S. buyers revise upwards the valuation of foreign assets ($\Delta V^{(\mathrm{US})} \uparrow$) or lose negotiation leverage due to increased uncertainty ($\lambda_{\mathrm{US}\to\mathrm{p,t}} \downarrow$). Hirano and Stiglitz (2023) show that geopolitical shocks can shift the economy between stable and fragile regimes, altering discount factors and thereby the equilibrium valuations of long-

lived assets. The empirical evidence that U.S. buyers pay higher prices abroad during periods of heightened uncertainty is consistent with such a regime-switching environment.

In contrast, Mainland Chinese buyers exhibit dramatic increases in premiums under Xi (coefficients exceeding 0.40). This result reflects the joint effect of capital controls, approval-based outbound investment, and heightened uncertainty. The reduced availability of alternative investment channels decreases bargaining power ($\lambda_{\mathrm{CN}\to\mathrm{p,t}}\downarrow$), while the political environment increases the marginal value of holding foreign real estate ($\Delta V^{(\mathrm{CN})}\uparrow$). As a result, $\theta_{\mathrm{CN}\to\mathrm{p,t}}$becomes large. This mechanism illustrates the credit-based amplification emphasized by Kiyotaki and Moore (1997), in which collateral constraints interact with asset prices to generate dynamic feedback.

These results show that political regimes and macroprudential policies interact with nationality-specific constraints and information asymmetries to shape cross-border bargaining power. This is consistent with a unified framework linking geopolitical risk, financial constraints, and asset-pricing dynamics.

4.3 Trade War as a Global Regime Shock

Table 6 analyzes the U.S.–China trade war. The interaction coefficients show that both sides experienced significant shifts in their bargaining power during the conflict. U.S. investors paid between 9 and 14 percent more for foreign assets relative to non-war periods, whereas Mainland Chinese investors paid an additional 13–18 percent premium. These results indicate that the trade war increased both $\Delta V^{(\mathrm{US})}$and $\Delta V^{(\mathrm{CN})}$, albeit through different channels. For U.S. buyers, foreign real estate became a hedge against geopolitical risk; for Chinese buyers, offshore assets became one of the few viable stores of value.

Moreover, unexpected policy and regulatory uncertainty can materially affect asset valuations, analogous to Fernández-Villaverde, Guerron, Kuester, and Rubio-Ramirez (2015), who show that shocks to fiscal-policy uncertainty reduce economic activity through endogenous increases in markups, altering discount rates and expected returns. Hirano and Stiglitz (2023) propose that uncertainty shocks induce **regime transitions** that lead to nonlinear adjustments in asset demands. The trade war, by increasing global uncertainty, modifies expected returns and

effective bargaining leverage for cross-border investors, and shifts the stochastic discount factors relevant for both U.S. and Chinese investors, mechanically amplifying observed transaction premia. The amplified overpayment by Chinese investors and the diminished discount among U.S. investors are therefore structural consequences of the same macro-regime shock.

4.4 Spatial Spillovers and the Geography of Bargaining Power

Table 7 investigates spatial heterogeneity by re-estimating the model in subsamples defined by geography. The results reveal that Chinese investor premiums are largest in the United States (+0.3814), followed by major advanced economies (+0.2786) and offshore markets (+0.2537). These results confirm that $\theta_{\mathrm{CN}\rightarrow \mathrm{p,t}}$is not constant across locations but is instead magnified in markets with high liquidity, deep financial services sectors, and strong global safe-asset demand.

This pattern is consistent with the non-balanced growth mechanism described in Hirano and Toda (in press). In global cities—New York, London, Sydney—the elasticity of substitution between land and capital is high, and productivity growth is concentrated in tradable sectors. These structural features generate sustained overvaluation of land and larger bubble components $B_{p,t}$. When Chinese capital enters these markets with a high $\theta_{\mathrm{CN}\rightarrow \mathrm{p,t}}$, price effects propagate spatially, producing the spillovers observed in Table 7. Taken together, Tables 4 through 7 provide strong empirical validation for the structural model in Section 2. The dynamics of bargaining power $\theta_{b\rightarrow p,t}$ are systematically shaped by the interaction of (i) expectations and growth fundamentals, (ii) capital controls and credit frictions, (iii) geopolitical regime shifts, and (iv) spatial market structure. These forces jointly operate within the inequality $R < G_d < G$, which Hirano and Toda (2024) show generates persistent bubble components in real estate valuations, and within a macro environment subject to regime transitions aligned with Hirano and Stiglitz (2021).

Table 6: Impact of Trade War on Property Price and *Heterogeneity of Foreign Buyers*

	Dependent Variable= LN_PriceUSD									
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
Chinese Buyer*Trade War	0.1169***	-0.0246					0.0784**		0.0846**	
	(0.0282)	(0.0351)					(0.0356)		(0.0356)	
Chinese Buyer		0.2010***					0.1359***		0.1140***	
		(0.0310)					(0.0313)		(0.0314)	
Chinese Buyer(Mainland)										
*Trade War			**0.1767*****	0.0346				0.1328**		0.1541***
			(0.041)	(0.0588)				(0.059)		(0.059)
Chinese Buyer(Mainland)				0.1384***				0.0739		0.0471
				(0.045)				(0.0452)		(0.0453)
US Buyer***Trade War**					**0.0875*****	0.1350***	0.1380***	0.1365***	0.1388***	0.1373***
					(0.0073)	(0.0081)	(0.0082)	(0.0081)	(0.0082)	(0.0081)
USA Buyer						-0.1058***	-0.1015***	-0.1049***	-0.0842***	-0.0865***
						(0.0089)	(0.009)	(0.009)	(0.0092)	(0.0092)
Foreign Buyer									0.0598***	0.0624***
									(0.0069)	(0.0069)
Trade War		0.2394***		0.2392***		0.1381***	0.1349***	0.1365***	0.1339***	0.1354***
		(0.0036)		(0.0036)		(0.007)	(0.0072)	(0.0071)	(0.0072)	(0.0071)
Constant	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES
Property Characteristics	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES
Transaction Characteristics	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES
Property Country Fixed Effect	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES
Seller Country Fixed Effect	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES
Time Fixed Effect	YES	No	YES	No	YES	No	No	No	No	No
Number of Observations	130411	130412	130411	130412	130411	130412	130412	130412	130412	130412
R2	0.7665	0.7606	0.7665	0.7605	0.7667	0.761	0.7611	0.7611	0.7612	0.7612

Note: The dependent variable is the logarithm of the property price measured in US dollars. The definitions of the independent variables are provided in main text. The column labeled "Robust Std. Err." shows heteroskedasticity-robust standard errors. ***, **, and * denote significance at the 1%, 5%, and 10% levels, respectively.

Table 7: Impact of *Trade War* on Property Price and Heterogeneity of Foreign Buyers

Dependent Variable= LN_PriceUSD				
	Offshore Purchase	Located in US	Located in Major Economies	Located in Non-major Economies
	(1)	(2)	(3)	(4)
Chinese Buyer	0.2537***	0.3814***	0.2786***	0.4749
	(0.0348)	(0.0448)	(0.0265)	(0.5332)
Property Characteristics	Yes	Yes	Yes	Yes
Constant	Yes	Yes	Yes	Yes
Property Country Fixed Effect	Yes	NA	Yes	Yes
Seller Country Fixed Effect	Yes	Yes	Yes	Yes
Time Fixed Effect	Yes	Yes	Yes	Yes
Number of Observations	271952	222905	268572	6175
R2	0.3459	0.3192	0.3420	0.5346

Note: The dependent variable is the logarithm of the property price measured in US dollars. The definitions of the independent variables are provided in main text. The column labeled "Robust Std. Err." shows heteroskedasticity-robust standard errors. ***, **, and * denote significance at the 1%, 5%, and 10% levels, respectively.

In this integrated framework, Chinese and U.S. investors differ not only in observed behavior but also in the structural determinants of their bargaining power. Chinese investors face binding capital controls, lower financial-market depth, and higher valuation of offshore real estate; U.S. investors operate in deep capital markets but respond strongly to geopolitical uncertainty. These differences propagate into transaction-level prices in a manner fully consistent with theoretical predictions.

5. Conclusion

This study develops and empirically estimates a unified framework that links macroeconomic growth dynamics, geopolitical conflict, and cross-border real estate capital flows through a structural model of nationality-specific bargaining power. Motivated by the persistent and widening global participation of Chinese and U.S. investors in commercial real estate markets, we combine recent theoretical insights on bubble formation, regime transitions, and collateral constraints with a new empirical strategy based on detailed transaction-level data from Real Capital Analytics.

Theoretically, Section 2 formalized a tractable structure in which the transaction price of an international real estate asset is decomposed into a fundamental component, a bubble component arising from unbalanced growth, Hirano and Toda (2024), and a bargaining component reflecting nationality-specific constraints and expectations. The model shows that differences in domestic regulation, credit conditions, and geopolitical shocks can influence bargaining power

$$\theta_{b\to p,t} = \lambda_{b\to p,t}\frac{\Delta V_{i,p,t}^{(b)}}{P_{i,p,t}^{\text{fund}}}, \qquad (5.1)$$

Thus, they generate persistent price differentials across investors from different countries. It also predicts that macro-financial disturbances—such as capital controls, political transitions, and global uncertainty—may nonlinearly affect transaction prices through regime-switching dynamics in the spirit of Hirano and Stiglitz (2023). This provides a natural structural interpretation for why periods of domestic Chinese tightening and the U.S.–China trade war may alter incentives and bargaining positions asymmetrically for Chinese and U.S. market participants.

Section 3 translated this structural framework into an estimable empirical model. Using over 130,000 cross-border commercial real estate transactions, we estimated a set of regressions that systematically isolate nationality-specific bargaining premia from property fundamentals, country-level bubble components, and time-specific macro trends. The coefficients on buyer-nationality indicators serve as direct empirical counterparts to the bargaining component $\theta_{(b\rightarrow p,t)}$, while interaction terms with policy variables quantify the dependence of bargaining power on macroeconomic and geopolitical regimes. Cap-rate regressions validate the price-based findings by showing that high premiums translate into yield compression for Chinese buyers, whereas U.S. buyers continue to acquire higher-yielding assets.

Section 4 integrated the empirical results with the theoretical structure and the regulatory chronology. The evidence reveals that Chinese investors pay large and persistent premiums when acquiring international real estate, particularly in major financial centers such as New York, London, and Sydney. These premiums rise substantially under the Xi administration and during the U.S.–China trade war, consistent with the theoretical prediction that regime shifts elevate the subjective valuation of foreign safe assets (Caballero, Farhi & Gourinchas, 2017) while reducing bargaining power through tighter capital controls and restricted investment opportunities. Conversely, the traditional price discounts enjoyed by U.S. investors narrow significantly under Trump and Biden, reflecting the role of geopolitical uncertainty in weakening U.S. investors' bargaining advantage. Geographically, Chinese investment generates substantial spatial spillovers, raising prices disproportionately in the most globally integrated markets.

Taken together, these findings demonstrate that cross-border real estate prices are shaped by a rich interaction between macroeconomic fundamentals, regulatory interventions, and geopolitical dynamics. The framework developed in this study highlights that international real estate markets cannot be understood solely through local fundamentals or through global capital flows in isolation. Instead, transaction prices reflect a structural equilibrium in which asset bubbles, credit constraints, and bargaining frictions jointly determine the allocation of global capital.

Our results have important implications. First, they suggest that capital controls in emerging economies may have unintended consequences: although such controls dampen outbound

investment volumes, they may amplify overpayment in approved transactions, creating asymmetric pressures in global markets. Second, geopolitical tensions such as trade wars can reallocate bargaining power between countries and alter the geography of asset demand. Third, the spillover effects measured in Section 4 imply that Chinese investment patterns have significant externalities on host-country price dynamics, particularly in global cities where land supply is highly inelastic. More broadly, this study provides a conceptual foundation for integrating bubble theories, international capital flow dynamics, and microeconomic bargaining structures into a coherent empirical framework. Future research could extend this approach by developing fully structural estimations of $\theta_{b \to p,t}$, incorporating equilibrium feedback between domestic and offshore asset markets, or examining how global financial cycles interact with the spatial transmission of real-estate valuations.

In sum, the fusion of macro theory, geopolitical shocks, and international property market data presented here demonstrates that nationality-specific bargaining power is a central, measurable determinant of global real estate pricing—and one that responds sharply to political, regulatory, and macroeconomic environments.

While this paper provides the first large-scale empirical estimates of nationality-specific bargaining wedges in global commercial real estate markets, several limitations remain. First, although RCA offers uniquely comprehensive transaction-level coverage across 172 countries, it does not provide full visibility into pre-transaction negotiations or off-market deals, potentially omitting segments of the market where bargaining dynamics differ. Second, despite extensive controls and policy-driven identification, a degree of endogeneity may persist—particularly in the selection of investment destinations or the timing of cross-border acquisitions—which future work might address using high-frequency capital-flow shocks or quasi-experimental regulatory changes. Third, while our model interprets price premia as reflecting heterogeneous beliefs, outside options, and capital-account frictions, we do not directly observe investor sentiment or expectation formation; integrating survey-based expectations or text-based sentiment measures would further strengthen the mechanism. Future research may also extend the structural model to fully general-equilibrium environments, embed cross-border bargaining into dynamic portfolio-choice frameworks, or analyze micro-level negotiation data as they become available.

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Appendix:

Table A 1 Real Estate Market Regulation in China During the Sample Period 2007–2024

Date	Policy	Content
2007.9	CBRC [2007] No.359	Increase the minimum down payment ratio to 40%; Increase the minimum mortgage rate to 110% of the benchmark rate for a second residential mortgage.
2008.10	PBOC [2008] No.137	Reduce the down payment ratio to 20%; Reduce the lower bound of the mortgage rate to 70% of the benchmark rate; Favorable policies for a first-time residential mortgage in a second residential property purchase.
2010.1	SC [2010] No. 4	Increase the minimum down payment ratio for second residential property to 40%.
2010.4	MOHUR and MF [2010] No.179	Increase the minimum down payment ratio for the first residential property to 30%; Increase the minimum down payment for the second residential property to 50%; Suspend mortgage approval for subsequent residential property purchase.
2011.1	GOSC [2011] No.1	Increase the minimum down payment ratio for a second residential property to at least 60%
2015	PBOC [2015]	Decrease the minimum down payment ratio for a second residential property to 60%.
2016		Impose more restrictions on residential property purchase
2017	19th National Congress of the Communist Party of China	Acting on the principle that houses are for living in, not for speculation nationwide with city-specific policies implemented.
2020.08	The CBRC, the central bank and the Ministry of Housing and Construction	The three red lines policy unveiled in August 2020, aims to tackle property developers' unbridled borrowing by limiting debt-to-cash, debt-to-assets and debt-to-equity ratios
2023.01		Release the housing purchase restrictions nationwide.

Table A2 Capital Control Activities in China During the Sample Period 2007-2024

Date	Content
2012	Chinese government mandated its 'Go Global' policy
2014	China started capital outflows
August 2015	RMB weakens sharply
October 2015	People's Bank of China (PBOC) implements new capital controls on foreign exchange market.
January 2016	PBOC increases the reserve requirements on offshore deposits
September 2016	$50K USD foreign exchange limit for individuals is stringently enforced.
November 2016	Real estate investment by State Owned Enterprises (SOE) over $1 billion is subjected to official approval.
Early 2017	Applications for offshore investments are pending under State Administration of Foreign Exchange.
August 2017	State Council releases prohibited/restricted/encouraged investment paradigm for private enterprises. Finance Ministry cracks down on offshore investments by SOEs.
December 2017	SOE and private firms are required to release offshore investment agenda and seek for official approval.

Table A3: Tabulation of transaction-level data

Panel(a) Property Type

Category	Freq.	Percent	Cum.
Apartment	197,962	17.78	17.78
Development Site	143,343	12.87	30.66
Hotel	62,185	5.59	36.24
Industrial	228,093	20.49	56.73
Office	216,195	19.42	76.15
Other	24,827	2.23	78.38
Retail	225,236	20.23	98.61
Seniors Housing	15,508	1.39	100
Total	1,113,349	100	

Panel(b) Transaction Year

Deal Year	Freq.	Percent	Cum.
2007	928	0.08	0.08
2008	64,602	5.8	5.89
2009	21,601	1.94	7.83
2010	26,874	2.41	10.24
2011	30,658	2.75	13
2012	41,213	3.7	16.7
2013	62,609	5.63	22.33
2014	62,087	5.58	27.91
2015	62,173	5.59	33.49
2016	59,726	5.37	38.86
2017	66,920	6.01	44.87
2018	62,023	5.57	50.44
2019	63,954	5.75	56.19
2020	85,648	7.7	63.89
2021	151,234	13.59	77.47
2022	85,105	7.65	85.12
2023	103,951	9.34	94.46
2024	61,636	5.54	100
Total	1,112,942	100	

Panel(c) Buyer Capital Type

Category	Freq.	Percent	Cum.
<unknown>	103,172	9.49	9.49

Bank	11,692	1.08	10.57
CMBS	44	0	10.57
Cooperative	573	0.05	10.62
Corporate	50,826	4.68	15.3
Developer/Owner/Operator	592,078	54.46	69.76
Educational	2,663	0.24	70
Endowment	554	0.05	70.05
Equity Fund	53,613	4.93	74.99
Finance	4,109	0.38	75.36
Government	10,814	0.99	76.36
High Net Worth	13,835	1.27	77.63
Insurance	10,112	0.93	78.56
Investment Manager	77,494	7.13	85.69
Listed Funds	2,796	0.26	85.95
Non-Traded REIT	16,504	1.52	87.46
Non-Profit	3,818	0.35	87.82
Open-Ended Fund	1,456	0.13	87.95
Other	389	0.04	87.99
Other/Unknown	51	0	87.99
Pension Fund	7,294	0.67	88.66
REIT	72,009	6.62	95.28
REOC	45,666	4.2	99.49
Religious	1,380	0.13	99.61
Sovereign Wealth Fund	4,218	0.39	100
Total	1,087,160	100	

Panel(d) Seller Capital Type

Category	Freq.	Percent	Cum.
<unknown>	119,578	11.26	11.26
Bank	21,083	1.99	13.25
CMBS	134	0.01	13.26
Cooperative	1,201	0.11	13.37
Corporate	61,287	5.77	19.15
Developer/Owner/Operator	514,559	48.47	67.61
Educational	1,338	0.13	67.74
Endowment	519	0.05	67.79
Equity Fund	40,010	3.77	71.56
Finance	7,736	0.73	72.28
Government	86,641	8.16	80.44
High Net Worth	19,476	1.83	82.28
Insurance	10,517	0.99	83.27
Investment Manager	56,069	5.28	88.55
Listed Funds	1,639	0.15	88.7

Non-Traded REIT	8,024	0.76	89.46
Non-Profit	3,060	0.29	89.75
Open-Ended Fund	567	0.05	89.8
Other	261	0.02	89.83
Other/Unknown	42	0	89.83
Pension Fund	6,162	0.58	90.41
REIT	61,011	5.75	96.16
REOC	38,457	3.62	99.78
Religious	1,456	0.14	99.92
Sovereign Wealth Fund	885	0.08	100
Total	1,061,712	100	

Note: The panels show the distribution of property transactions by property type, transaction year, country of property location, type of buyer and type of seller, all of which we control for in the empirical analysis using dummy variables. In the empirical analysis, we also include dummies for the buyer country and seller country as control variables.

Table A3 summarizes 1,113,349 global commercial real estate transactions from 2007–2023 across 172 countries. Industrial, Retail, Office, and Apartments jointly account for nearly 80% of all transactions, indicating that the dataset is dominated by core income-producing assets. Development sites represent an additional 13%, reflecting substantial activity in land acquisition and redevelopment.
Let

$$s_k = \frac{N_k}{N_{\text{total}}}$$

denote the share of asset type k. For core sectors,

$$s_{\text{core}} = s_{\text{Ind}} + s_{\text{Ret}} + s_{\text{Off}} + s_{\text{Apt}} \approx 0.78,$$

highlighting strong global concentration in four primary asset classes.
Yearly distributions show a collapse during the 2008–09 financial crisis and a sharp resurgence after 2012, peaking in 2021 (13.59%), consistent with global liquidity expansion. Buyer and seller types are dominated by Developers/Owners/Operators, each exceeding 50%, indicating that professional and institutional investors drive the majority of global transactions.

Table A4: Tabulation of transaction-level data from U.S. Buyers

Panel(a) Property Type of USA Buyer

Category	Freq.	Percent	Cum.
Apartment	134,361	24.82	24.82
Development Site	23,766	4.39	29.21
Hotel	36,092	6.67	35.88
Industrial	113,576	20.98	56.86
Office	95,994	17.73	74.6
Other	12,642	2.34	76.93
Retail	114,772	21.2	98.14
Seniors Housing	10,082	1.86	100
Total	541,285	100	

Panel(b) Transaction Year (USA buyers)

Deal Year	Freq.	Percent	Cum.
2007	38	0.01	0.01
2008	42,700	7.89	7.9
2009	7,163	1.32	9.22
2010	9,769	1.81	11.03
2011	11,688	2.16	13.19
2012	19,042	3.52	16.71
2013	36,757	6.79	23.51
2014	33,138	6.13	29.63
2015	37,881	7	36.64
2016	30,058	5.56	42.19
2017	36,167	6.69	48.88
2018	37,958	7.02	55.89
2019	35,443	6.55	62.45
2020	35,670	6.59	69.04
2021	59,642	11.03	80.07
2022	31,580	5.84	85.9
2023	50,058	9.25	95.16
2024	26,195	4.84	100
Total	540,947	100	

Table A5 reports 540,830 transactions involving U.S. buyers. Their portfolio composition is diversified across core sectors:

- Apartments: 24.82%,
- Retail: 21.20%,
- Industrial: 20.98%,
- Office: 17.73%.

Define the investment share for U.S. buyers as

$$s_k^{US} = \frac{N_k^{US}}{N_{\text{total}}^{US}},$$

then

$$s_{\text{Apt}}^{US} + s_{\text{Ret}}^{US} + s_{\text{Ind}}^{US} + s_{\text{Off}}^{US} = 0.85,$$

showing broad sectoral diversification in contrast to the concentration patterns observed for Chinese buyers.

The temporal distribution reflects macroeconomic cycles: investment drops sharply in 2009 (1.32%) and rebounds post-2012, peaking in 2021 (11.03%). U.S. buyers remain consistently active throughout the sample, suggesting stable cross-border participation.

Table A5: Tabulation of transaction-level data from Chinese Buyers

Panel(a) Property Type of Chinese Buyer

Category	Freq.	Percent	Cum.
Apartment	1,397	1.68	1.68
Development Site	67,246	80.75	82.43
Hotel	1,517	1.82	84.25
Industrial	3,754	4.51	88.76
Office	4,750	5.7	94.46
Other	96	0.12	94.58
Retail	4,463	5.36	99.94
Seniors Housing	51	0.06	100
Total	83,274	100	

Panel(b) Transaction Year(Chinese Buyer)

Deal Year	Freq.	Percent	Cum.
2007	39	0.05	0.05
2008	1,407	1.69	1.74
2009	2,305	2.77	4.5
2010	2,722	3.27	7.77
2011	5,674	6.81	14.59
2012	5,094	6.12	20.7
2013	6,714	8.06	28.77
2014	6,743	8.1	36.86
2015	2,282	2.74	39.6
2016	949	1.14	40.74
2017	3,184	3.82	44.57
2018	1,330	1.6	46.17
2019	1,572	1.89	48.05
2020	6,679	8.02	56.07
2021	10,118	12.15	68.22
2022	8,671	10.41	78.64
2023	9,859	11.84	90.48
2024	7,931	9.52	100
Total	83,273	100	

Table A5 focuses on 83,987 transactions involving Chinese buyers and reveals an extremely concentrated investment pattern. Development sites account for

$$s_{\text{Dev}}^{CN} = \frac{67{,}246}{83{,}987} = 0.8075,$$

meaning over 80% of all Chinese offshore acquisitions target land and redevelopment opportunities. Other sectors—Office (5.70%), Retail (5.36%), Industrial (4.51%), Apartments (1.68%), Hotel (1.82%)—collectively account for less than 20%.

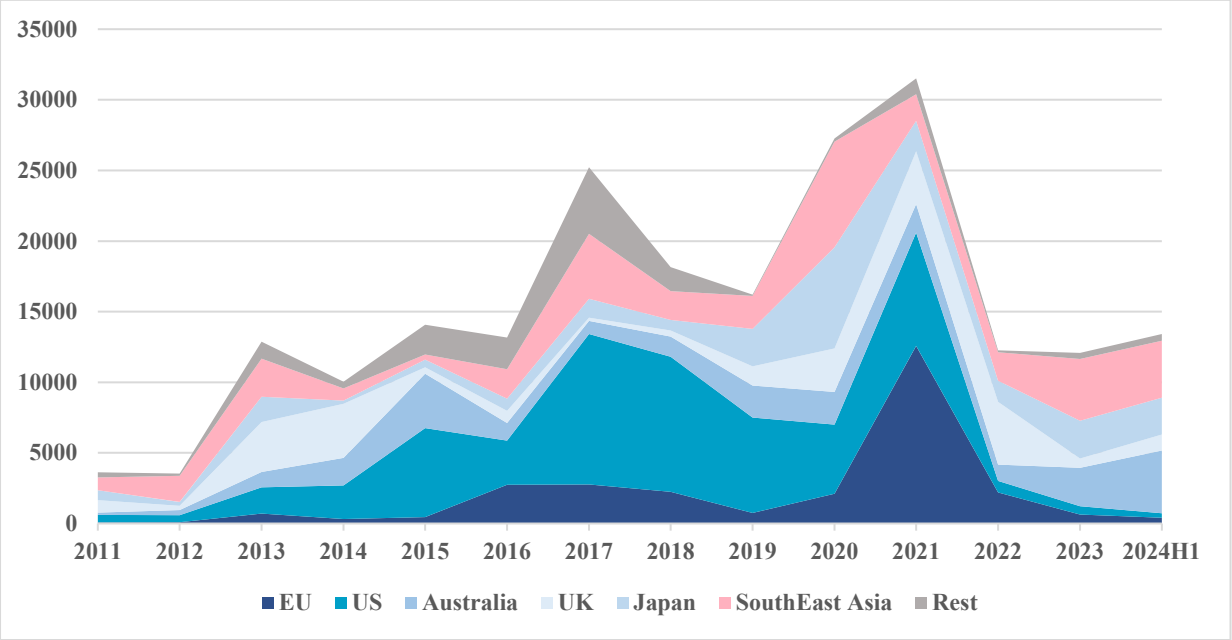
The time-series distribution shows three distinct phases:

1. Surge (2011–2014): Chinese offshore investments reach 8% of global transactions, driven by rapid income growth and the 2012 "Go Global" initiative.
2. Suppression (2015–2019): The share declines to 2–3% due to capital controls and regulatory tightening.
3. Rebound (2020–2023): Activity rises sharply again, peaking at 12.15% in 2021.

These patterns can be summarized as

$$\text{Share}_t^{CN} = f(\text{GoGlobal}, \text{CapControl}_t, \text{TradeWar}_t).$$

indicating strong responsiveness of Chinese investment flows to domestic regulatory constraints and geopolitical shocks.



Note: Chinese offshore real estate investment, 2011-2024H1, in 1 million USD
Source: RCA

Figure A1 Chinese acquired real estate properties offshore

Figure A1 illustrates the geographical distribution of Chinese offshore commercial real estate investment since 2012. Chinese capital is highly concentrated in a small set of advanced economies—primarily the United States, the European Union, the United Kingdom, Australia, and Japan—reflecting their high institutional quality and safe-asset characteristics.
This pattern is consistent with the investment flow function

$$\backslash \text{Flow}_{b,t} = f(B_{b,t}, \theta_{b,t}, \text{CapControl}_t, Z_t).$$

where $\Delta V_{p,t}^{(CN)}$ denotes the relative attractiveness of destination p, CapControl_t captures China's domestic capital-control intensity, and $Z_t$represents geopolitical shocks.
The surge in outbound investment after 2012 corresponds to

$$\frac{\partial \text{Flow}_{CN,p,t}}{\partial \Delta V_{p,t}^{(CN)}} > 0,$$

while the sharp decline following the 2016 capital-control tightening and the 2018 U.S.–China trade war reflects

$$\frac{\partial \text{Flow}_{CN,p,t}}{\partial \text{CapControl}_t} < 0, \frac{\partial \text{Flow}_{CN,US,t}}{\partial Z_t} < 0.$$

Overall, Figure A2 indicates that Chinese offshore investment is jointly shaped by
(i) strong destination-specific demand,
(ii) domestic capital-control policies, and
(iii) geopolitical shocks that reallocate flows across countries.

US vs China,
Investment Share in International Real Estate Market%
60.00%
50.00%
40.00%
30.00%
20.00%
10.00%
0.00%
2007 2008 2009 2010 2011 2012 2013 2014 2015 2016 2017 2018 2019 2020 2021 2022 2023 2024
US share
China Share

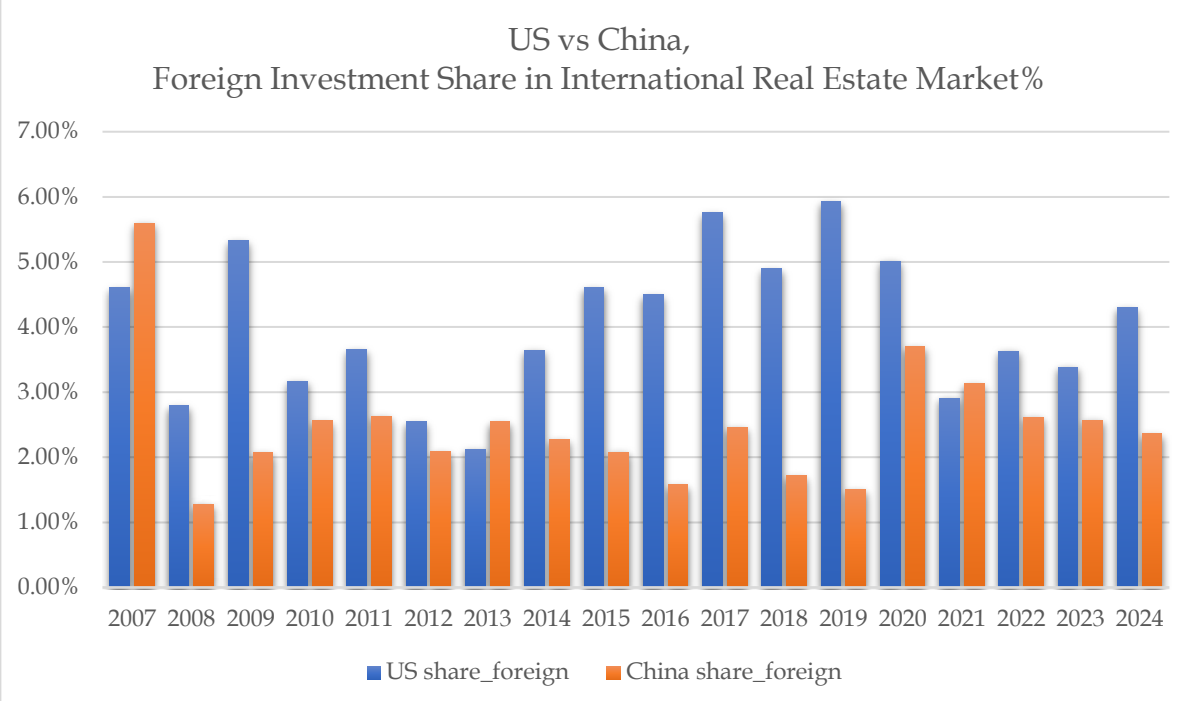

US vs China,
Foreign Investment Share in International Real Estate Market%
7.00%
6.00%
5.00%
4.00%
3.00%
2.00%
1.00%
0.00%
2007 2008 2009 2010 2011 2012 2013 2014 2015 2016 2017 2018 2019 2020 2021 2022 2023 2024
US share_foreign
China share_foreign

Figure A2 Offshore Investment between US and Chinese Buyers

Figure A2 documents the time-series evolution of offshore real estate investment by Chinese and U.S. buyers. Chinese outbound investment exhibits a sharp rise after 2012, a collapse following the 2016 capital-control tightening, and a further decline after the onset of the U.S.–China trade war in 2018. In contrast, U.S. offshore investment remains relatively stable. These dynamics are consistent with the flow equation

$$\text{Share}_t^{CN} = f(\text{GoGlobal}, \text{CapControl}_t, \text{TradeWar}_t).$$

where $B_{b,t}$ captures domestic bubble pressure, $\theta_{b,t}$ reflects nationality-specific bargaining conditions, CapControl_t denotes regulatory tightening, and Z_t captures geopolitical shocks. The post-2012 surge corresponds to rising bubble pressure in China ($\partial \text{Flow}_{CN,t} / \partial B_{CN,t} > 0$), while the 2016–2017 decline reflects the negative effect of capital controls ($\partial \text{Flow}_{CN,t} / \partial \text{CapControl}_t < 0$). The drop in Chinese investment in the U.S. after 2018 is driven by trade-war shocks

$$\frac{\partial \text{Flow}_{CN,US,t}}{\partial Z_t} < 0.$$

Overall, Figure A3 shows that offshore investment flows respond strongly to domestic regulations and geopolitical regime shifts, with Chinese flows exhibiting far greater sensitivity than U.S. flows.

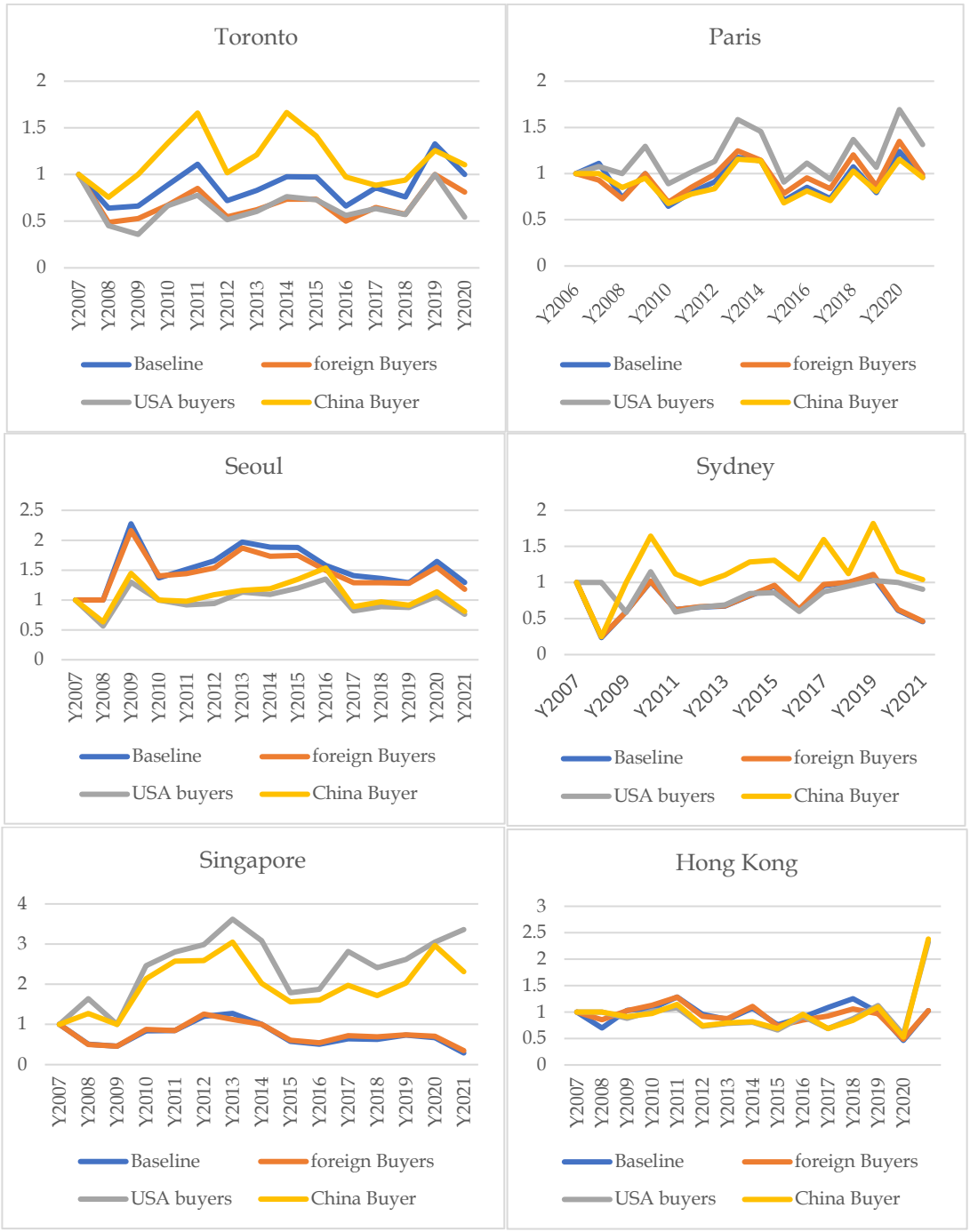


Figure A3 Hedonic Index Considering the Origin of Buyers

Figure A3 plots hedonic price indices for major global cities (Toronto, Paris, Seoul, Sydney, Singapore, Hong Kong), disaggregated by buyer origin. Across cities, properties purchased by Chinese buyers exhibit consistently higher hedonic price indices than those purchased by U.S. buyers or local buyers.

This pattern reflects nationality-specific price differentials of the form

$$\widehat{\ln P}_{b,c,t} \simeq \widehat{\ln P^{\text{fund}}_{c,t}} + B_{c,t} + \theta_{b\to c,t},$$

so that cross-buyer differences satisfy

$$\widehat{\ln P}_{CN,c,t} - \widehat{\ln P}_{US,c,t} \approx \theta_{CN\to c,t} - \theta_{US\to c,t} > 0.$$

Cities with strong urban productivity and severe land scarcity—such as Sydney, Singapore, and Hong Kong—display the largest gaps, indicating that both the bubble component $B_{c,t}$and the bargaining differential $\theta_{CN\to c,t}$are elevated.

Overall, Figure A3 provides visual evidence that Chinese buyers systematically pay higher quality-adjusted prices, and that these nationality-specific premia vary across cities in a manner correlated with global-city fundamentals.