EXPLOSIVE PRICE DYNAMICS IN GLOBAL REIT MARKETS: EVIDENCE FROM DEVELOPED REGIONS

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Abstract

This paper investigates the presence and timing of explosive price dynamics in major listed real estate markets over the period 04 January 2011 – 11 February 2026. The analysis focuses on four benchmark indices: the FTSE EPRA Nareit Developed Europe Index, the FTSE Nareit All Equity REITs Index (USA), the FTSE EPRA Nareit Developed Asia Pacific Index, and the FTSE EPRA Nareit Developed Index (World). Using a bubble-detection framework designed to identify periods of explosive price behaviour, the study documents episodic, momentum-driven overheating phases across regions. The results reveal that explosive episodes are concentrated during sustained appreciation regimes and tend to precede or coincide with local and global market peaks. The post-pandemic recovery of 2020–2022 emerges as the most synchronised overheating phase across regions. While the U.S. market exhibits multiple moderate explosive clusters consistent with a long-term upward trend, Europe shows a pronounced pre-correction overheating phase around 2018–2020. Asia-Pacific displays recurrent but comparatively shorter-lived explosive episodes. At the global level, explosive dynamics intensify during periods of coordinated international expansion. Overall, the findings suggest that listed real estate markets are characterised by recurrent, regionally heterogeneous yet occasionally synchronised explosive dynamics. Monitoring acceleration phases in REIT prices may therefore provide valuable early warning signals of subsequent corrections and heightened systemic risk.

Keywords: asset price bubbles, real estate securities, financial econometrics, market overheating, bubble detection, financial stability

JEL Classification: G12, G15, R30, C22

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1. Introduction

The origins of the 2008–2009 global economic and financial crisis are widely linked to the sharp contraction in real estate values that occurred after an extended period of sustained expansion (Caraiani et al., 2019; Iancu et al., 2023). Recent studies emphasise that increasing housing prices stimulated bank lending through securitisation mechanisms, first displacing credit directed toward non-housing sectors and subsequently supporting a broader expansion of credit across the entire economy (Martín, Moral-Benito, and Schmitz, 2021; Blanco-Arroyo, Esteve, and Prats, 2026).

Conversely, residential real estate, typically viewed as a comparatively illiquid and more stable asset class, may serve as an indicator of overall economic conditions, household sentiment, and financial soundness within an economy. Changes in housing returns can therefore signal underlying macroeconomic adjustments that may not yet be fully reflected in the more rapidly responding equity markets (Salisu, Gupta, and Cepni, 2026).

The concept of a rational housing bubble refers to a situation in which housing asset prices diverge from their underlying fundamental values (Stiglitz, 1990). When increases in housing prices can be accounted for by economic fundamentals, the likelihood of a financial crisis remains limited, as prices would be expected to decline only in response to changes in those fundamentals. By contrast, when price growth is primarily driven by speculative factors, the presence of a rational housing bubble becomes more plausible, potentially generating adverse consequences for the broader real economy (Stiglitz, 2003; Kivedal, 2013). Conversely, the collapse of a bubble may trigger a financial crisis. Such an event can generate substantial adverse wealth effects for households that own residential property. Indeed, Carmen Reinhart and Kenneth Rogoff (2008) show that, in the aftermath of financial crises, the real level of debt tends to increase sharply, in many cases nearly doubling (Gil-Alana, Dettoni, Costamagna, and Valenzuela, 2019).

The economic relevance and far-reaching implications of real estate bubbles have contributed to the development of an extensive and rapidly expanding body of literature examining their formation, dynamics, and macro-financial consequences (Idrovo & Lennon, 2013; Miao, 2014; Kim & Lim, 2016; Zhang et al., 2017; Shi, 2017; Caraiani

& Călin, 2020; André et al., 2022; Iancu et al., 2023; Saritas et al., 2026).

This study advances the existing research on asset price bubbles in equity REIT markets by examining the presence of recurring episodes of speculative exuberance.

Existing empirical research on listed real estate markets has predominantly focused on individual regional dynamics or has relied on conventional econometric approaches centred on cointegration relationships, volatility modelling, or fundamental valuation frameworks. While these studies provide important insights into local market behaviour, they offer limited evidence regarding the timing, recurrence, and cross-market interaction of speculative episodes at the global level. In contrast, the present study adopts a multi-regional perspective and employs the BSADF data-stamping methodology, which allows for the identification of multiple, non-overlapping episodes of explosive price dynamics across markets (Iancu et al., 2023). This framework further enables the investigation of synchronisation patterns, thereby providing new evidence on whether overheating phases in REIT markets emerge independently or reflect broader globally coordinated financial cycles.

The sample period considered in this study offers a particularly relevant macro-financial setting for the analysis of speculative dynamics in listed real estate markets. Spanning 2011–2026, the dataset covers three distinct global monetary regimes that shaped asset price behaviour following the Global Financial Crisis. The early phase is characterised by prolonged accommodative monetary policy and quantitative easing programs implemented across advanced economies, which supported capital inflows and asset price appreciation. This is followed by the unprecedented liquidity expansion associated with the COVID-19 pandemic, during which large-scale fiscal and monetary interventions generated rapid market recoveries and intensified risk-taking behaviour. The final segment of the sample captures the transition toward monetary tightening and higher interest rates, creating conditions conducive to valuation adjustments and market corrections. Examining explosive price dynamics across these contrasting regimes allows for a comprehensive assessment of how shifts in global liquidity and financial conditions influence overheating episodes in REIT markets.

To appropriately capture the complex dynamics of speculative behaviour observed in modern financial markets, this study relies on a recursive right-tailed unit root testing framework capable of identifying multiple, non-contiguous episodes of explosive price behaviour within a single sample. Traditional econometric approaches are often limited to detecting a single bubble episode or rely on ex-post valuation benchmarks, which may overlook short-lived or recurrent overheating phases. This limitation becomes particularly relevant in the post-pandemic environment, characterised by rapid liquidity expansions, abrupt regime shifts, and repeated acceleration patterns across asset classes. The Backward Supremum Augmented Dickey–Fuller (BSADF) methodology addresses these challenges by allowing both flexible subsample estimation and precise date-stamping of bubble origination and collapse periods. As a result, it has been increasingly applied in the empirical detection of speculative dynamics across a wide range of financial assets, including equity markets, commodities, cryptocurrencies, and real estate markets Yao and Li, 2021; Yao et al., 2023; Lupu et al., 2024; Huang and Wang, 2024; Lupu et al., 2025; Chen et al., 2025; Vriz and Grossi, 2026; Lupu et al., 2026. Its ability to identify recurrent explosive regimes makes it especially suitable for examining listed real estate markets, where multiple overheating episodes may emerge under changing global financial conditions Zhang et al., 2024; Cincinelli et al., 2024.

The current paper makes the following contributions. First, it provides a comprehensive and up-to-date cross-regional analysis of explosive price dynamics in listed real estate markets over an extended post–Global Financial Crisis horizon (2011–2026). By jointly examining Europe, the United States, Asia-Pacific, and a global aggregate benchmark, the study offers a unified comparative framework that allows for the identification of both regional heterogeneity and global synchronisation effects in REIT overheating episodes.

Second, the paper explicitly focuses on price indices (excluding dividend reinvestment), thereby isolating capital appreciation dynamics from income effects. This distinction is particularly relevant in REIT markets, where dividend yields are structurally significant. By concentrating on pure price movements, the analysis directly targets acceleration patterns consistent with speculative behaviour and short-term market overheating.

Third, the study documents the timing and clustering structure of explosive episodes across regions, highlighting the post-pandemic rebound (2020–2022) as the most globally synchronised overheating phase in the sample. The results show that explosive signals systematically precede or overlap with cyclical peaks, reinforcing the interpretation of acceleration phases as potential early warning indicators of subsequent corrections.

Fourth, the paper contributes to the systemic risk literature by demonstrating that global REIT overheating is not merely the sum of independent regional dynamics. Instead, synchronised explosive phases emerge during periods of coordinated international expansion, suggesting cross-market transmission mechanisms and global liquidity effects.

The remainder of the paper is structured as follows. Section 2 presents the data and outlines the empirical methodology employed to detect explosive price dynamics. Section 3 reports and discusses the main empirical results, highlighting cross-regional differences and synchronisation patterns. Section 4 concludes with implications for market monitoring and financial stability.

2. Data and methodology

2.1. Data

The empirical analysis employs four major listed real estate benchmarks: the FTSE EPRA Nareit Developed Europe Index (FTSE W Europe REIT $ – Price Index), the FTSE Nareit All Equity REITs Index (FTSE USA REIT – Price Index), the FTSE EPRA Nareit Developed Index (FTSE World REIT $ – Price Index), and the FTSE EPRA Nareit Developed Asia Pacific Index (FTSE W Asia Pacific REIT $ – Price Index). The sample period spans from 04 January 2011 to 11 February 2026. All series are expressed as price indices (capital appreciation only), excluding dividend reinvestment, and denominated in U.S. dollars to ensure cross-regional comparability. The data were obtained from the London Stock Exchange Group (LSEG) platform.

The FTSE W Europe REIT index captures the price performance of publicly listed REITs and real estate operating companies across developed European markets, reflecting valuation dynamics within the European listed property sector and sensitivity to regional macroeconomic and monetary conditions.

The FTSE USA REIT index tracks U.S.-listed equity REITs operating across major property segments such as residential, retail, office, industrial, and healthcare real estate, providing a benchmark for the largest and most liquid REIT market globally.

The FTSE World REIT index represents an aggregate of developed listed real estate markets across North America, Europe, and Asia-Pacific, serving as a comprehensive proxy for global publicly traded real estate performance and enabling cross-market comparative analysis.

The FTSE W Asia Pacific REIT index measures the performance of REITs in developed Asia-Pacific markets, including Japan, Australia, Singapore, and Hong Kong, capturing regional real estate cycle heterogeneity and distinct macro-financial dynamics.

2.2. Methodology – Bubble detection with the BSADF method

Recursive Unit Root Testing for Bubble Identification

The econometric identification of speculative episodes in asset price time series has conventionally relied upon right-tailed extensions of the augmented Dickey–Fuller (ADF) unit root framework, which test for the presence of explosive autoregressive roots (Diba & Grossman, 1988). While theoretically sound, this class of tests exhibits substantial power losses when confronted with episodes of transient exuberance embedded within longer histories of stationary or near-unit-root dynamics. The methodological contribution of Phillips et al. (2011, 2015) addresses this limitation through a recursive testing strategy premised on the sequential application of right-tailed ADF statistics to systematically varying subsamples of the data, thereby permitting the detection and date-stamping of multiple, non-contiguous episodes of explosive behaviour.

Consider a univariate time series y_t observed over T periods. Define the fractional indices r_1 and r_2 as the proportional positions marking the origin and termination of a given subsample, respectively, such that the subsample contains observations indexed from $\lfloor r_1 T \rfloor$ to $\lfloor r_2 T \rfloor$, where $\lfloor \cdot \rfloor$ denotes the integer-part operator. The fractional window size is accordingly $r_w = r_2 - r_1$. Over each such subsample, the following augmented Dickey–Fuller specification is estimated:

$$\Delta y_t = c_{r_1,r_2} + \beta_{r_1,r_2} \cdot y_{t-1} + \sum_{i=1}^{k} \varphi_{r_1,r_2}^{i} \cdot \Delta y_{t-i} + \varepsilon_t, \qquad \varepsilon_t \sim iid\, N\left(0, {\sigma_{r_1,r_2}}^2\right) \tag{1}$$

where y_t denotes the natural logarithm of the real asset price or the continuously compounded return, Δy_t represents the first difference thereof, and the coefficients c, β, and φ are subsample-specific parameters to be estimated.

The lag order k is selected to ensure that the residual process ε_t is serially uncorrelated, typically via an information criterion such as the Akaike (AIC) or Schwarz (BIC). The error term ε_t is assumed to satisfy the standard conditions of zero mean, constant variance, and independence. Crucially, the fractional endpoints r_1 and r_2 express the subsample boundaries as proportions of the full sample size T.

Whereas the conventional ADF test is constructed under a unit root null hypothesis (β = 0) with a left-tailed stationary alternative (β < 0), the framework of Phillips et al. (2011) inverts the direction of the test by specifying a right-tailed alternative (β > 0), consistent with mildly explosive autoregressive dynamics. The authors demonstrate that right-tailed unit root tests possess meaningful inferential content for the early detection of asset price exuberance, thereby furnishing a prospective diagnostic for incipient speculative pressures.

The subsample-specific test statistic is defined as the ratio of the estimated coefficient to its standard error:

$$\boldsymbol{ADF}_{r_1}^{r_2} = \frac{\beta_{r_1,r_2}}{\text{s.e.}\left(\beta_{r_1,r_2}\right)}$$

To operationalise the recursive testing procedure, the full sample is normalised such that the fractional scale ranges from 0 to 1. The number of observations in any given subsample indexed by r_w is then $T_w = \lfloor r_w T \rfloor$. Given a minimum fractional window size r_0, which is typically set to ensure a sufficient number of degrees of freedom for reliable coefficient estimation, a sequence of ADF statistics may be constructed by systematically expanding the endpoint r_2 from r_0 to 1 while holding the starting point r_1 fixed at 0. The supremum of this sequence constitutes the Supremum ADF (SADF) statistic:

$$\boldsymbol{SADF}(r_0) = \sup_{r_2 \in [r_0,1]} \boldsymbol{ADF}_0^{r_2}$$

The SADF procedure performs well in identifying a single episode of explosive dynamics followed by collapse. However, its power deteriorates markedly in empirical settings characterised by multiple, temporally disjoint phases of exuberance. The fixed-origin design of the SADF statistic constrains its capacity to disentangle recurrent boom–bust sequences, as each forward-expanding subsample necessarily incorporates earlier episodes of instability, thereby diluting the signal associated with subsequent bubbles.

To remedy this deficiency, Phillips et al. (2015) generalised the SADF framework by permitting both the initial and terminal observations of each subsample to vary freely across the admissible range. This extension, termed the Generalised SADF (GSADF) statistic, evaluates the supremum over a substantially richer set of subsamples and thereby substantially enhances the procedure's ability to detect multiple distinct episodes within a single realisation.

The GSADF statistic is defined as:

$$\boldsymbol{GSADF}(r_0) = \sup_{r_2 \in [r_0,1],\, r_1 \in [0, r_2 - r_0]} \boldsymbol{ADF}_{r_1}^{r_2}$$

Rejection of the unit root null occurs when GSADF(r_0) exceeds the corresponding right-tailed critical value derived from the asymptotic distribution of the test statistic. Phillips et al. (2015) tabulate finite-sample critical values via Monte Carlo simulation, and these values are employed throughout the empirical analysis reported in this study. The 95% confidence interval critical values specific to the sample size under consideration are computed via 1,000 Monte Carlo replications and are provided in the supplementary materials.

Date-Stamping Algorithm and the BSADF Sequence

While the GSADF statistic furnishes a test for the presence of at least one explosive episode within the full sample, it does not directly identify the precise observation-level origination and termination dates of individual bubbles. Phillips et al. (2015) address this through a recursive date-stamping algorithm predicated on the Backward Supremum ADF (BSADF) sequence.

For any fixed terminal observation indexed by fractional endpoint r_2, the BSADF statistic is defined as the supremum of the ADF statistics computed over all admissible initial observations r_1 lying in the interval $[0, r_2 - r_0]$:

$$\boldsymbol{BSADF}_{r_2}(r_0) = \sup_{r_1 \in [0, r_2 - r_0]} \boldsymbol{ADF}_{r_1}^{r_2}$$

It follows immediately that the GSADF statistic may equivalently be expressed as the supremum of the BSADF sequence over all terminal observations:

$$\boldsymbol{GSADF}(r_0) = \sup_{r_2 \in [r_0,1]} \boldsymbol{BSADF}_{r_2}(r_0)$$

The BSADF sequence is then evaluated against the sample-size-adjusted critical values of the GSADF distribution. A speculative episode is deemed to have originated at the first observation r_e at which the BSADF statistic exceeds the right-tailed critical threshold:

$$\hat{r}_e = \inf_{r_2 \in [r_0, 1]} \left\{ r_2 : \boldsymbol{BSADF}_{r_2}(r_0) > cv^{\boldsymbol{SADF}}_{r_2,\alpha} \right\}$$

where $cv^{\boldsymbol{SADF}}_{r_2,\alpha}$ denotes the α%-level critical value of the SADF test evaluated on a subsample of size $\lfloor r_2 T \rfloor$ observations.

Correspondingly, the episode is considered to have collapsed at the first subsequent observation at which the BSADF statistic recedes below the critical threshold:

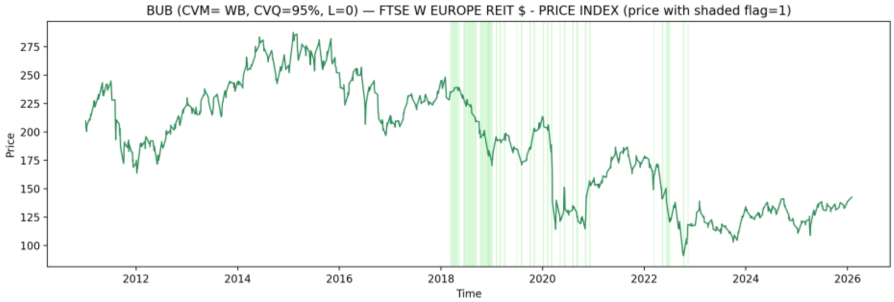
$$\hat{r}_f = \inf_{r_2 \geq \hat{r}_e} \left\{ r_2 : \boldsymbol{BSADF}_{r_2}(r_0) < cv^{\boldsymbol{SADF}}_{r_2,\alpha} \right\}$$

This date-stamping mechanism delivers precise, observation-level estimates of bubble inception and termination dates, thereby enabling the classification of individual crash events according to whether they occur during or immediately following a BSADF-identified speculative regime. The critical values employed in the origination and collapse tests are derived from the finite-sample distribution of the SADF statistic conditional on the subsample length, ensuring appropriate size control throughout the recursive procedure.

In our empirical implementation, we adopt the automatic initialisation rule proposed by Phillips, Shi, and Yu (2015), which sets the minimum fractional window size as $r_0 = 0.1 + 1.8/\sqrt{T}$, with the corresponding integer window size given by $T_0 = \lfloor r_0 T \rfloor$. This specification balances the competing objectives of ensuring sufficient subsample size for reliable coefficient estimation while maintaining adequate power against explosive alternatives in empirically relevant sample lengths.

3. Results and discussion

Figure 1
Bubbles for FTSE W Europe REIT $ – Price Index



Source: Author's computation

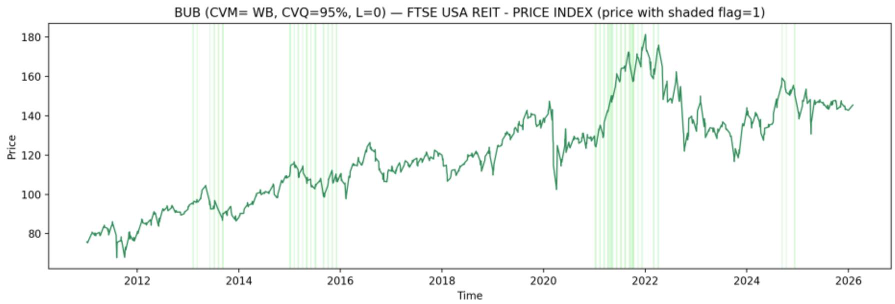
The figure displays the price evolution of the FTSE EPRA Nareit Developed Europe Index (FTSE W Europe REIT $ – Price Index) together with the corresponding bubble indicator (BUB) under the CVM framework (WB specification, CVQ = 95%, L = 0). The shaded green vertical bands mark the days classified as explosive (flag = 1), while the continuous line represents the underlying price index.

Over the sample period, the European REIT market exhibits a pronounced cyclical structure. After an initial correction in 2011–2012, the index entered a strong appreciation phase between 2013 and 2015, reaching a major peak around 2015–2016. This is followed by a gradual moderation and renewed upward movement until 2018. Beginning in 2018–2019, the index enters a sustained downward trajectory, which intensifies during the COVID-19 shock in 2020, leading to a sharp structural break and substantial price compression. The post-pandemic recovery (2021) proves temporary, as the market experiences renewed weakness in 2022–2023, consistent with tightening financial conditions and rising interest rates. The final segment of the sample (2024–2026) suggests stabilisation at a lower valuation regime compared to the mid-2010s peak.

The bubble detection pattern differs notably from the Asia-Pacific case. Explosive signals are heavily concentrated in the 2018–2020 interval, immediately preceding and overlapping with the major structural downturn. This clustering indicates that the methodology identifies late-stage acceleration and instability prior to the substantial correction. In contrast, earlier expansion phases (e.g., 2013–2015) generate comparatively fewer or no persistent explosive flags, suggesting that the price increases during that period were more gradual and less characterised by explosive dynamics.

Figure 2

Bubbles for FTSE USA REIT – Price Index



Source: Author's computation

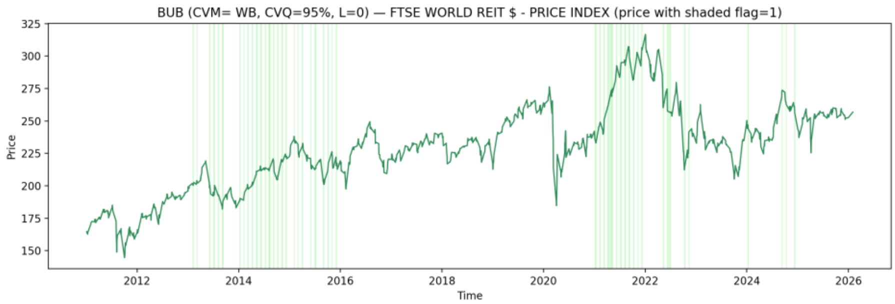
The U.S. REIT market displays a relatively smoother and more persistent upward trend compared to the European benchmark. Between 2011 and 2016, the index follows a steady appreciation path with moderate corrections. The 2016–2019 period is characterised by continued expansion, reflecting favourable financing conditions and strong real estate fundamentals. The COVID-19 shock in 2020 produced a visible but relatively short-lived contraction, followed by a strong rebound that culminated in a pronounced peak during 2021–2022. Subsequently, the index corrects amid tightening monetary policy and higher interest rates, before stabilising in the 2023–2026 interval at levels below the 2021 peak but significantly above the early-sample valuations.

Explosive signals appear in several distinct clusters. Early episodes are visible around 2013–2014 and again during 2015–2016, coinciding with sustained price acceleration phases. A more pronounced and dense concentration of flags emerges during the 2021–2022 expansion, immediately preceding and overlapping with the local maximum. This clustering suggests intensified upward momentum and potential overheating during the post-pandemic recovery. In contrast, the 2020 downturn itself does not exhibit persistent explosive signals, consistent with the upward-focused nature of the detection framework.

Overall, the U.S. REIT market appears to experience multiple momentum-driven episodes, with the most significant cluster occurring during the rapid post-COVID rebound. The distribution of explosive flags supports the interpretation that overheating dynamics tend to materialise during strong appreciation phases, particularly when price growth accelerates beyond its long-run trend.

Figure 3

Bubbles for FTSE World REIT $ – Price Index



Source: Author's computation

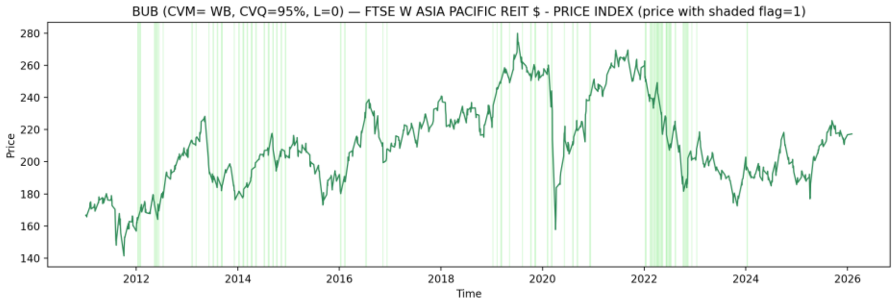
The figure presents the price evolution of the FTSE EPRA Nareit Developed Index (FTSE World REIT $ – Price Index) over the sample period, with shaded vertical bands marking days identified as explosive (flag = 1).

The global REIT benchmark exhibits a clear long-run upward trajectory from 2011 to 2019, characterised by successive expansion phases interspersed with moderate corrections. The index rises steadily through 2013–2016, followed by continued growth until the pre-pandemic peak. The COVID-19 shock in early 2020 produced a sharp and abrupt contraction, representing the most significant negative break in the sample. This decline is followed by a strong and rapid recovery during 2020–2021, culminating in a new global maximum around 2021–2022. Thereafter, the index enters a correction phase associated with tightening global financial conditions, before stabilising in the 2023–2026 interval at levels below the peak but well above early-sample valuations.

Explosive signals appear in multiple clusters across the sample. A dense concentration is observed during the 2013–2016 expansion phase, coinciding with sustained and accelerating appreciation. Another prominent cluster emerges during the post-pandemic rebound in 2021–2022, immediately preceding and overlapping with the global peak. In contrast, the 2020 collapse itself shows limited explosive activity, consistent with the focus on detecting upward price acceleration rather than downturn dynamics.

Figure 4

Bubbles for FTSE W Asia Pacific REIT



Source: Author's computation

The figure presents the price dynamics of the FTSE EPRA Nareit Developed Asia Pacific Index (FTSE W Asia Pacific REIT $ – Price Index) over the sample period, together with the binary bubble indicator (BUB) obtained under the CVM framework (WB specification, CVQ = 95%, L = 0). The green vertical shaded areas correspond to days classified as explosive episodes (flag = 1), while the solid line represents the underlying price index.

From a descriptive standpoint, the index exhibits multiple cyclical phases. The 2011–2013 period shows moderate growth with intermittent corrections, followed by a more sustained upward trajectory between 2016 and 2019, culminating in a pronounced peak just prior to the COVID-19 shock. The sharp contraction in early 2020 reflects the pandemic-induced disruption in global real estate markets. Subsequently, the index rebounds strongly through 2021, reaching new local highs, before entering a correction phase during 2022–2023, likely associated with tightening global monetary conditions and rising interest rates. The most recent period (2024–2026) indicates partial recovery and stabilisation.

The bubble detection results suggest that explosive signals are not uniformly distributed across the sample. Instead, they tend to cluster around periods of rapid price acceleration. A relatively dense concentration of flags appears during the 2012–2014 interval, coinciding with sustained upward momentum. Additional clusters are visible in the pre-pandemic expansion phase (2017–2019) and again during the post-pandemic rebound in 2021–2022. In contrast, crisis periods characterised by sharp downward adjustments (notably early 2020) show limited or no explosive flags, consistent with the methodology's focus on detecting exuberant price dynamics rather than crashes.

4. Conclusions

This study examined the presence and timing of explosive price dynamics across four major listed real estate benchmarks: the FTSE EPRA Nareit Developed Europe Index, the FTSE Nareit All Equity REITs Index, the FTSE EPRA Nareit Developed Index, and the FTSE EPRA Nareit Developed Asia Pacific Index, over the period 04 January 2011 – 11 February 2026. The evidence indicates that explosive episodes are episodic, momentum-driven, and predominantly concentrated around phases of accelerated appreciation preceding local or global peaks.

Across all regions, explosive signals tend to cluster during sustained upward movements rather than during downturns. The post-pandemic rebound of 2020–2022 emerges as the most synchronized overheating phase at the global level, with dense flag concentrations in the U.S., Asia-Pacific, and the global aggregate index. This suggests that the rapid liquidity-driven recovery following the COVID-19 shock generated conditions consistent with temporary price acceleration beyond long-run fundamentals.

Regional heterogeneity is nevertheless evident. The European REIT market displays a pronounced concentration of explosive signals in the 2018–2020 interval, preceding a substantial structural correction. In contrast, the U.S. market shows a more gradual long-term appreciation path, punctuated by multiple smaller explosive clusters and a particularly strong episode during the 2021–2022 expansion. The Asia-Pacific index exhibits several momentum-driven phases, though with less structural persistence compared to Europe. The global index largely reflects the synchronisation of these regional cycles, amplifying signals during periods of coordinated expansion.

Importantly, explosive flags systematically precede or overlap with cyclical peaks, while crisis and contraction periods show limited explosive activity. This pattern supports the interpretation that overheating in listed real estate markets materialises during acceleration phases rather than during downturns. The results are therefore consistent with a boom–correction dynamic in which speculative pressures accumulate during strong appreciation regimes and dissipate once financial conditions tighten or external shocks materialise.

Overall, the findings indicate that the listed real estate markets are susceptible to recurrent, regionally heterogeneous, yet occasionally synchronised explosive dynamics. The post-pandemic expansion stands out as the most globally aligned overheating episode in the sample. These results contribute to the understanding of cyclical risk in publicly traded real estate and provide empirical support for monitoring acceleration phases as early warning signals of potential market corrections.

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