IRSAD
WHITEPAPER

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EXECUTIVE SUMMARY

This whitepaper investigates the predictive utility of socioeconomic fundamentals – specifically, the ABS Index of Relative Socio-economic Advantage and Disadvantage (IRSAD) – in forecasting housing market performance at the LGA level. The central hypothesis being – where IRSAD scores materially diverge from local house prices, the discrepancy may signal latent mispricing, and thus opportunity for outsized returns.

A residual model was constructed by regressing IRSAD scores against median house prices for every LGA in Australia. Residuals – the difference between predicted and actual IRSAD – were used to classify LGAs into three categories:

- **Category 3:**
  Undervalued (based on expected IRSAD)

- **Category 2:**
  Fairly priced (based on expected IRSAD)

- **Category 1:**
  Overvalued (based on expected IRSAD)

We then tested the forward performance of these categories using capital growth data across three periods: 2011 to 2016, 2016 to 2021, and 2021 to 2025. Key findings included:

- **Strong performance in early years:** From 2011 to 2016, Category 3 LGAs appreciated by 180.6%, while Category 1 LGAs fell 13.3%. Over the full decade (2011–2021), Category 3 delivered 261.9% growth.

- **Model breakdown in later years:** The relationship reversed in both 2016–2021 and 2021–2025. Category 1 LGAs outperformed Category 3, eroding the model's predictive edge.

- **Tightening of IRSAD–price relationship:** The historical scatter plots show increasing correlation between IRSAD and price. This suggests the market now more efficiently prices in socioeconomic advantage.

- **IRSAD's lag limits responsiveness:** As a five-yearly, relative index, IRSAD may now reflect post-growth demographics rather than foreshadowing them – reducing its utility as a forward indicator.

- **Market conditions diluted fundamentals:** Liquidity shocks, low interest rates, and macroeconomic distortions during COVID-era booms may have suppressed the model's signal during 2016–2025.

INTRODUCTION

Investors face a perennial dilemma: How to identify markets with genuine upside potential before the crowd catches on. Conventional strategies lean heavily on backward-looking indicators – past price trends, transaction volumes, rental yields. While useful, these often miss deeper, structural drivers of capital growth.

This whitepaper explores one such structural driver: socioeconomic status, specifically as measured by the ABS Index of Relative Socio-economic Advantage and Disadvantage (IRSAD). IRSAD compresses an area's socioeconomic traits – income, education, employment, housing quality – into a decile score from 1 (most disadvantaged) to 10 (most advantaged). In essence, it reflects the level of affluence that a place attracts.

This alone, however, is insufficient. It is no revelation that houses in wealthier areas tend to be more expensive. High IRSAD scores frequently coincide with high house prices – and merely confirm what the market already knows. Rather, what may be valuable is when these two signals diverge.

Suppose we compare two LGAs, both with a median house price of $600,000:

- **Market A has an IRSAD score of 8**
- **Market B has an IRSAD score of 4**

Despite identical prices, Market A enjoys a more advantaged population. If capital follows affluence – can we therefore expect Market A's housing market to outperform?

In this study, we model IRSAD as a dependent variable – something that should be predictable from price, given the general correlation. We then compare an area's actual IRSAD to its predicted IRSAD, based on a linear regression of price and IRSAD across all LGAs.

The resulting residual – the gap between predicted and actual IRSAD – serves as a proxy for socioeconomic mispricing. Markets with high positive residuals (i.e. elevated advantage, relative to price) may be poised for above-average growth as the market moves to restore equilibrium between socioeconomic level and prices.

METHODOLOGY

This analysis draws on socioeconomic and property price data to assess whether relative advantage – adjusted for prevailing house prices – can serve as a leading indicator for subsequent growth. Our approach attempts to emphasise simplicity, transparency, and replicability.

DATA SOURCES

We combine two primary datasets:

- **Socioeconomic Data:** The ABS Index of Relative Socio-Economic Advantage and Disadvantage (IRSAD), drawn from the 2011, 2016, and 2021 Census cycles, published at the Local Government Area (LGA) level. Decile score of 1-10 for each LGA (1 being extreme disadvantage, 10 being extreme advantage).

- **Property Price Data:** Typical house prices by LGA, drawn from HTAG's time-series dataset, aligned to July in each census year.

Where necessary, LGA names were manually harmonised to ensure consistent matching between datasets across all three years.

PREDICTED IRSAD

While IRSAD is a well-known indicator of socioeconomic standing, its utility for forecasting is limited by its positive correlation with property prices: Wealthy areas tend to be expensive, which is largely self-evident.
The novelty in our approach lies in isolating the relative advantage of an area after accounting for its cost.

For each census year, we run a regression of IRSAD scores against typical house prices:

$$IRSAD_{predicted} = \beta_0 + \beta_1 \bullet ln(Typical\ Price)$$

This regression tells us what IRSAD score, or socioeconomic level, is expected, given a certain typical house price.
We take the natural logarithm of price in our regression because the relationship between house prices and IRSAD is non-linear. While IRSAD is bounded on a 1–10 scale, house prices are unbounded and grow exponentially. Using a logarithmic transformation compresses the price distribution and better captures the diminishing marginal relationship, where increases in price correspond to ever smaller increases in IRSAD at the upper end.

METHODOLOGY

We then take the predicted IRSAD scores for each LGA, and subtract these from the actual IRSAD score for each LGA, to arrive at a residual:

$$Residual = IRSAD_{actual} - IRSAD_{predicted}$$

These residuals represent the deviation from expected socioeconomic status, given the price point. A positive residual indicates that the area is more socioeconomically advantaged than its price suggests – potentially signalling undervaluation or enhanced growth potential.

CATEGORISATION BY DEVIATION

To provide a simple framework for the investigation of this effect, we segment LGAs into three categories based on the standard deviation (σ) of all residual scores:

- Category 3 (Elevated Advantage):

  Residual > +0.5 • σ

- Category 2 (As Expected):

  -0.5 • σ ≥ Residual ≥ +0.5 • σ

- Category 1 (Depressed Advantage):

  Residual < -0.5 • σ

This categorisation is repeated independently for each census year (2011, 2016, 2021), enabling temporal comparison and back testing.

A SIMPLIFIED EXPLANATION

At its core, this method is about comparing two things:

1. How wealthy an area seems (based on ABS socioeconomic data), and
2. How expensive it is (based on typical house prices).

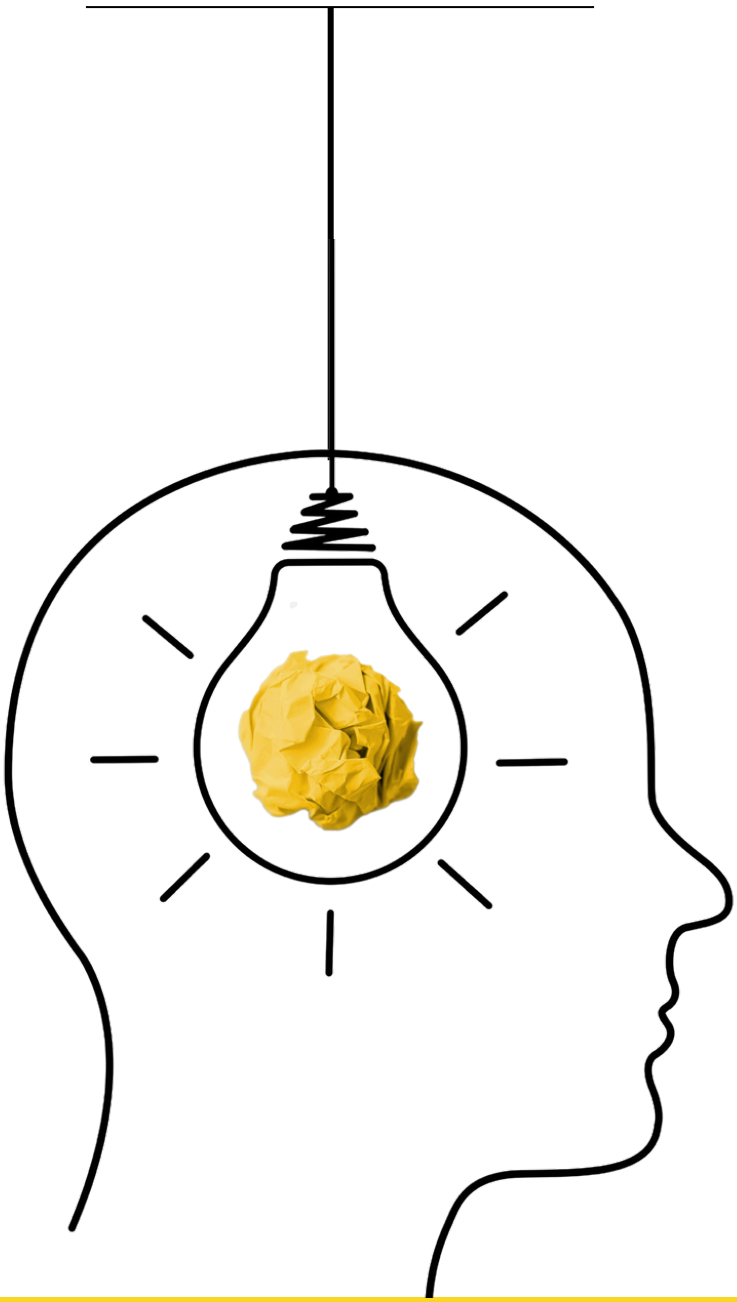
Normally, richer areas cost more. But if we find an area that appears wealthier than its price suggests, that mismatch may reveal hidden value for future growth.

METHODOLOGY

DATA SCOPE

To reduce skew and enhance interpretability:

- Chart x-axis was capped at $1.5 million for visualisation, although all values were included in calculations.
- LGAs with missing IRSAD or price data were excluded.
- Our primary time horizon for price growth assessment is five years following each census year (i.e. 2011–2016 and 2016–2021).



RESULTS

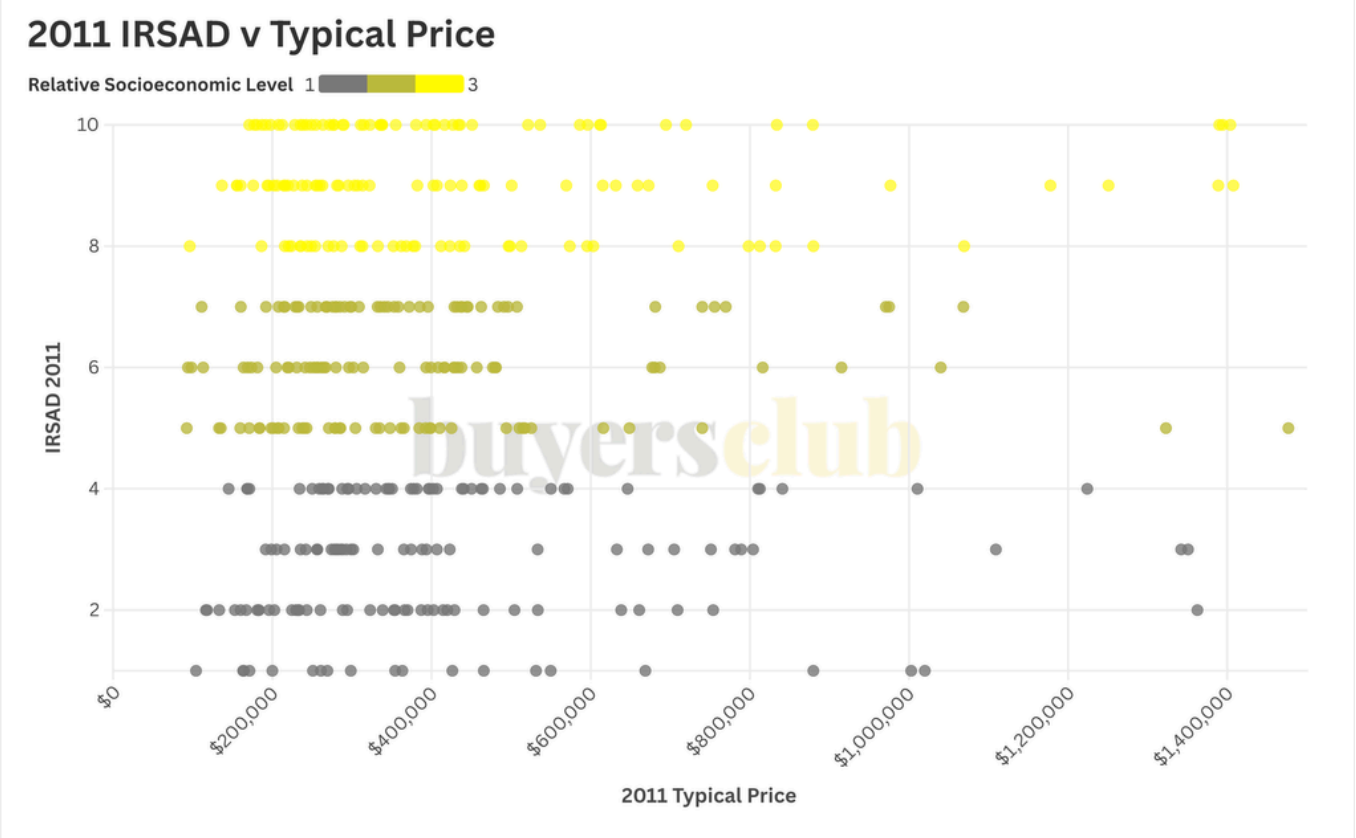
CATEGORISING LGAS BY RESIDUAL SOCIOECONOMIC QUALITY

We begin by visualising the raw relationship between socioeconomic status and typical house price across LGAs for each census year. The following scatter plots show IRSAD scores on the vertical axis and typical price on the horizontal, with colours denoting each LGA's residual classification.

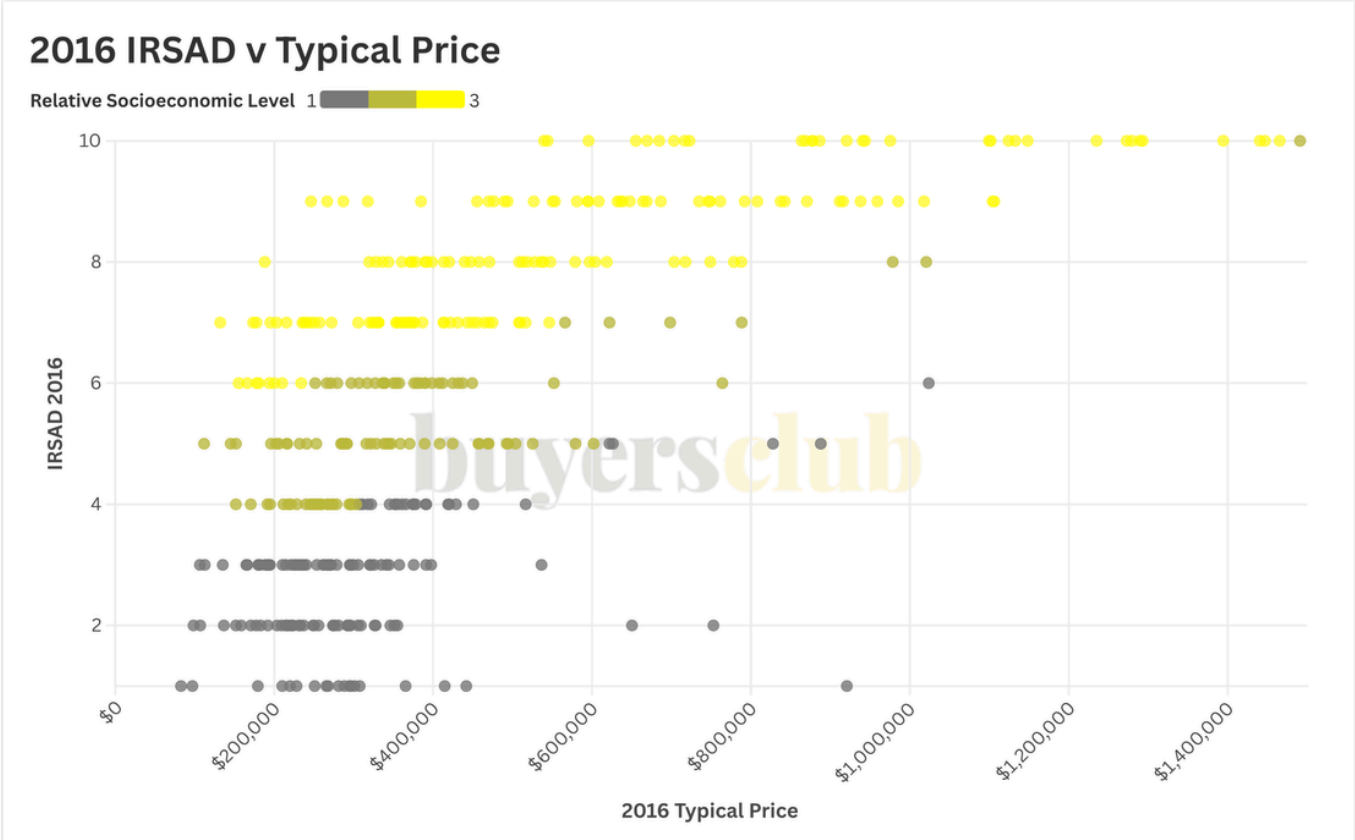
Each LGA was assigned a category, based on the residual between predicted and actual IRSAD. As explained earlier, category 2 is assigned to LGAs deemed to be within a normal or expected range for IRSAD and price (residual within one standard deviation of all residual values).

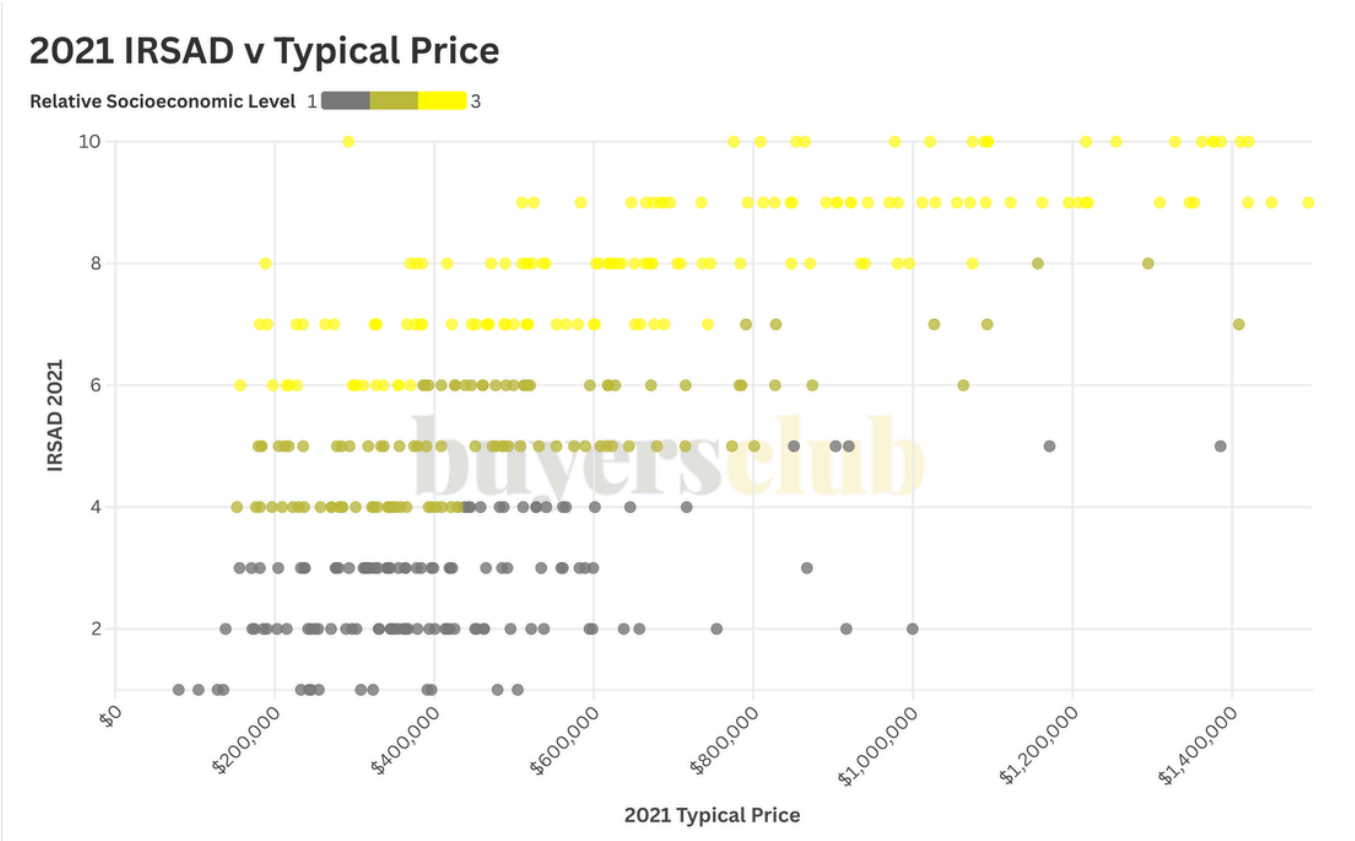
LGAs with a residual above this range were assigned to category 3 and are represented in bright yellow in the charts below. Conversely, LGAs with a residual below this range were assigned to category 1 and are represented in dark grey.

According to the hypothesis, we expect that LGAs represented in yellow exhibited stronger price growth over time than those represented in other colours.



RESULTS


2016 IRSAD v Typical Price
Relative Socioeconomic Level 1 3
IRSAD 2016
10
8
6
4
2
$0
$200,000
$400,000
$600,000
$800,000
$1,000,000
$1,200,000
$1,400,000
2016 Typical Price
buyersclub


2021 IRSAD v Typical Price
Relative Socioeconomic Level 1 3
IRSAD 2021
10
8
6
4
2
$0
$200,000
$400,000
$600,000
$800,000
$1,000,000
$1,200,000
$1,400,000
2021 Typical Price
buyersclub

RESULTS

INTERPRETING IRSAD–PRICE DIVERGENCES

The charts from 2011, 2016, and 2021 reveal a broadly linear relationship between socioeconomic status and price – wealthier areas tend to be more expensive. Yet within this pattern, notable divergences emerge.

In 2011, the dispersion is wide and correlation is low: high and low IRSAD scores are scattered across the price spectrum. By 2021, the slope steepens noticeably – advantaged LGAs cluster more tightly at higher price points, and disadvantaged LGAs are increasingly confined to the lower end of the market.

This tightening relationship may reflect growing socioeconomic stratification in Australian housing: high-quality locations are becoming more expensive, while lower-quality areas fall further behind. It reinforces the merit of identifying exceptions – LGAs that defy this trend – as possible sites of repricing or capital misallocation.

At every census year, a meaningful number of LGAs exhibit either:

- **Elevated IRSAD relative to their price point (top-left quadrant), or**
- **Depressed IRSAD despite high prices (bottom-right quadrant).**

These outliers form the analytical basis for our categorisation. Markets represented in yellow – those with higher-than-expected socioeconomic scores – may represent latent value, i.e. high-quality populations not yet priced in. Conversely, markets represented in the dark grey may already be priced beyond their socioeconomic fundamentals.

BACKTEST OF GROWTH PERFORMANCE BY CATEGORY

To evaluate the predictive value of the IRSAD residual categories, we grouped LGAs based on their 2011 residuals and tracked typical dwelling price growth across subsequent periods:

	2011-2016 Growth %	2016-2021 Growth %	2011-2021 Growth %
Category 1 (negative residual)	-13.26	37.74	22.73
Category 2 (within normal range)	42.59	36.76	97.81
Category 3 (positive residual)	180.62	32.21	261.91

RESULTS

Category 1 (negative residuals): These LGAs were identified as potentially overvalued relative to their IRSAD score in 2011. Over the full decade, they returned 22.73% cumulative growth – well below national averages.

Category 2 (within expected range): LGAs with IRSAD scores within the expected ranged exhibited 97.81% growth over the same period, representing a baseline for typical market movement.

Category 3 (positive residuals): LGAs flagged as having a high relative IRSAD for their price point delivered 261.91% growth – strong outperformance consistent with the original hypothesis.

However, the clear performance gap between undervalued and overvalued LGAs appeared to weaken and even invert in the 2016–2021 period. Growth across categories was more compressed, with all segments showing near-identical average returns of 37-32%.

POST-2021 PERFORMANCE

While our primary analysis focused on the two five-year periods following the 2011 and 2016 censuses, it is natural to ask whether our valuation framework continues to hold explanatory power in more recent years.

Although the ABS has not yet released updated IRSAD figures beyond 2021, we can nonetheless examine price growth from 2021 to 2024 across the 2021 residual categories. This provides a forward-looking test: Did markets that appeared undervalued in 2021 go on to outperform? Were overvalued markets punished? Or has the signal degraded?

By anchoring our categories in 2021 and observing subsequent capital growth, we assess whether relative socioeconomic advantage – measured at a single point in time – remains a viable indicator of short-term performance. In effect, this becomes a real-time validation test of the model's ongoing relevance.

	2021-2025 Growth %
Category 1 (negative residual)	42.16
Category 2 (within normal range)	37.55
Category 3 (positive residual)	34.04

RESULTS

Following on from 2016-2021, where the predictive power of this approach seemed to decline, the data reveals a similar trend from 2021-2025. LGAs deemed overvalued, on the basis of IRSAD, outperformed those labelled undervalued. While the difference in performance is modest, the directionality is significant.

DISCUSSION

This whitepaper tested the hypothesis that discrepancies between IRSAD scores and typical property prices could help identify undervalued markets and forecast above-average capital growth. The evidence from the earlier half of the study period was strongly supportive, but the model's predictive strength weakened over time.

EARLY PREDICTIVE STRENGTH (2011–2016)

The clearest validation of the IRSAD–price residual model came during the 2011–2016 period. Here, the divergence between socioeconomic fundamentals and price appeared most pronounced, and the model was most effective at distinguishing under- and overvalued markets. LGAs with positive residuals (Category 3) experienced remarkable growth of 180.62%, while those with negative residuals (Category 1) declined 13.26%.

Even across the full decade to 2021, the model's signal remained directionally accurate. Undervalued LGAs from 2011 went on to deliver 261.91% growth, far outpacing the market. These strong results suggest that IRSAD–price divergence was, at that time, a useful valuation signal.

MODEL DEGRADATION (2016–2025)

However, the model's performance degraded over time. In the 2016–2021 period, the predictive pattern weakened. Category 1 (overvalued) and Category 3 (undervalued) LGAs delivered very similar returns, and the direction inverted: Category 1 LGAs outperformed Category 3.

A similar inversion emerged in the forward validation from 2021 to 2025. Despite being classified as overvalued based on 2021 IRSAD residuals, Category 1 LGAs again outperformed. The performance spread across all categories compressed significantly from 2011-2016. These results suggest that the relationship between IRSAD residuals and capital growth had weakened or reversed.

DISCUSSION

A TIGHTENING IRSAD–PRICE RELATIONSHIP

One probable explanation lies in the structural changes observed in the IRSAD–price relationship itself. Scatter plots of IRSAD versus price from 2011 to 2021 show a clear tightening of the trend: Whereas in 2011 there was considerable dispersion of IRSAD scores at all price points, as indicated by the scatter plot, by 2021 the relationship had become more linear and tightly clustered. This suggests that IRSAD was increasingly being priced in.

Reducing residual variance may reflect a more efficient housing market – one that more consistently prices in the socioeconomic fundamentals that IRSAD captures. As the signal becomes absorbed into valuations, the opportunity to exploit divergence diminishes.

IRSAD AS A LAGGING INDICATOR

A second issue is temporal. IRSAD is published only once every five years, making it a slow-moving and lagging measure of relative socioeconomic status. In fast-gentrifying areas, price growth may occur before the IRSAD update reflects demographic or income improvements. The model may then flag a gentrified market as still undervalued when the growth has already occurred, or vice versa. This creates a “rear-view mirror” problem. The IRSAD–price relationship may appear predictive at first glance but has since become retroactive.

BROAD-BASED GROWTH AND MACRO DISTORTIONS

The 2016–2021 and 2021–2025 periods were characterised by broad-based, stimulus-fuelled housing booms. Low interest rates, pandemic-related migration, and highly liquid credit conditions lifted prices across all socioeconomic strata. In such conditions, fundamentals became less discriminating – nearly all LGAs grew, regardless of their relative positioning on IRSAD or valuation metrics. Models based on fundamental mispricing will naturally lose their edge in this context.

DISCUSSION

IMPLICATIONS FOR INVESTMENT ANALYSIS

Despite its declining predictive power, IRSAD remains conceptually valuable. It captures long-term social and economic differences that shape housing demand and liveability. However, its use as a short-term valuation tool is now questionable. Investors relying on IRSAD residuals should be aware of its lag, its reduced variance, and its limitations during liquidity-driven booms. Not that socioeconomic factors are unimportant, rather, that the market seems to have become better at pricing them.

FUTURE DIRECTIONS

The release of the 2026 Census presents an opportunity to re-evaluate IRSAD–price residuals with a refreshed dataset. If residuals remain compressed and price growth is undifferentiated by category, it may confirm that the market has fully absorbed this signal.

Meanwhile, model refinement is warranted. One improvement would be to replace IRSAD with more granular and frequently updated data, such as household income or education levels. Alternatively, shifting from a simple single-variable regression to a multivariate valuation model would allow a richer understanding of price drivers – and allow residual analysis to operate from a more comprehensive baseline.

CONCLUSION

This investigation tested whether mismatches between socioeconomic status and house prices, measured through IRSAD residuals, can identify undervalued markets with strong growth potential. The model showed clear predictive strength from 2011 to 2016, but its effectiveness weakened over time.

Several factors likely contributed to this change. The correlation between IRSAD and price tightened, suggesting the market has become more efficient at pricing in socioeconomic fundamentals. The IRSAD index is only updated every five years, which creates a lag in how quickly it reflects real changes. In addition, the housing booms of 2020 to 2022, driven by low interest rates and increased liquidity, lifted prices across most areas and made fundamentals less useful in distinguishing between markets.

However, this does not mean the model is without value. While the average performance across categories has flattened, there may still be significant opportunity at the extremes. LGAs with very high or very low residuals could still represent genuine mispricings. These outliers may offer either hidden value or risk, even if the broader trend appears neutral.

IRSAD residuals should not be used as a standalone filter for investment, but when used alongside other indicators, they can still provide useful insight. Particularly in cases where prices seem out of step with the quality of the population, this method remains a helpful lens for spotting early signals.